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# **T.B. Direct Observation of Treatment, Short Course (DOTS) - Political Commitment, Policy Transfer and Adaptation in Papua New Guinea**

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A thesis submitted in fulfilment of the requirements for the  
degree of

Doctor of Philosophy

(Medicine)



THE UNIVERSITY OF  
**SYDNEY**

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## **Preface**

### **Author's contribution**

I, John Hall, was primarily responsible for the: development of the research proposal and questions; selection of research methods; data collection and analysis; interpretation and presentation of research findings in this study.

I acknowledge the assistance of my supervisor, Associate Professor James Gillespie, who provided guidance and constructive feedback on all stages of the project. I am grateful to Claudia Koller and Patricia Hall for proof reading and Leanne Rose for assisting with formatting of this thesis.



## **Abstract**

Tuberculosis (TB) in Papua New Guinea (PNG) is a major public health problem. In 2013 the World Health Organization (WHO) estimated a TB incidence of 347 cases per 100,000 per year in PNG. This is the third highest TB incidence in the WHO Western Pacific Region. Recent TB incidence studies in Western Province of 500 cases per 100,000 per year, and 1290 cases per 100,000 per year in Gulf Province indicate that PNG has one of the highest incidences of TB in the world. As well there is evidence of increasing numbers of drug resistant TB cases. PNG faces major challenges in TB control. The rugged terrain, poor road access, and major law and order problems provide enormous challenges in health service provision, including TB control. In addition PNG has a weak health system which has been impacted significantly by a clientelist political system which has entrenched nepotism and corruption in health system governance directly affecting capacity to provide even the most basic health services.

The WHO Direct Observation of Treatment, Short Course (DOTS) has been the PNG National Department of Health (NDOH) approach to TB control since 1997. However, it was later, in 2006 that TB moved onto the health policy agenda in PNG becoming a so called Tier 1 priority disease. Soon after a successful Global Fund to Fight Aids, TB and Malaria (GFATM) Round 6 Stop TB in PNG Grant application provided \$US20m for a national rollout of TB DOTS to all 20 provinces in PNG.

This research undertakes a health policy analysis of the formulation and implementation of the 2006 PNG Stop TB Policy. Using policy analysis methodology the research describes and critiques the first component of the WHO TB DOTS Policy

“political commitment”, in both the formulation and implementation of the policy. It analyses what “political commitment” means in the PNG context and how the particular PNG construct of “political commitment” provided the context for the 2006 Stop TB policy. The research then undertakes a detailed analysis of the 2006 policy “agenda setting” process examining the role and influence of aid donors and policy entrepreneurs and how power relationships influence policy in an aid dependent setting such as PNG.

The research finds that political commitment is driven by cultural constructs of “wantokism”, the “big man” and clientelism which entrench nepotism, corruption and consequent significant dysfunction in the PNG Health System. Rather than addressing these entrenched governance constraints the 2006 Global Fund Grant established parallel structures in order to implement the TB DOTS policy bypassing, and even further weakening, the government health system. One result of not addressing the significant structural governance issues was the temporary suspension of the Round 6 grant, the resignation of the NDOH as the Round 6 Grant Principal Recipient, and the appointment of World Vision, an international NGO, to oversee the implementation of the national TB DOTS policy. The 2006 PNG Stop TB policy did not achieve its principle stated objective of achieving 80% coverage of the population with DOTS, detecting 70% and curing 85% of TB cases; nor did it result in a strengthened health system.

This research identifies and adds new evidence based knowledge on those key factors which must be addressed in future approaches to health policy formulation and implementation in resource poor settings such as PNG. Firstly, health policy must start

with a consideration of and address the major policy contextual issues and constraints especially with regard to political commitment as the first component of all health policy. Secondly, examples of leadership do exist in PNG which take into account the common good. These models require further research on how they can be applied to health policy formulation and implementation. Secondly, where successful models of health policy implementation do exist, such as the PNG Churches Health services capacity to overcome the constraints of “wantokism” by “performance management” of staff with effective “hire and fire” strategies, these models need to be further researched so they can be better understood in the PNG context and incorporated into future health policy formulation. Otherwise donor funded health policy which may meet the short term needs of aid donors will continue to not result in sustainable outcomes in disease burden nor stronger health systems.



## **Acknowledgments**

This research would not have been possible without the patient support and guidance of my supervisor Associate Professor James Gillespie, whose deep commitment to understanding health policy and the policy process has helped to form and guide this research. Thank you Jim for being so patient.

This research has come about as a result of discussions with many colleagues over years in Pakistan, Vanuatu and Papua New Guinea on why and how health policy and health systems work or do not work. To each one of those dedicated colleagues and the participants in this research from the primary health care to the national level I am indebted. It is their commitment to the delivery of basic health services, often in the most difficult of circumstances, which has inspired me to undertake this research to try to understand processes which are often beyond our individual control.

Finally to Patricia, Brigid, Max, Tom, Ellen, Carmel and Therese a huge thankyou to each of you for the gift of time, understanding and support to allow me to complete this work.

## Acronyms

AAP – Annual Activity Plan

ACMS – Advocacy, Communication & Social Mobilization

ADB – Asian Development Bank

AMS – Area Medical Store

AUD – Australian Dollar

AusAID – Australian Agency for International Development

AP – Aid Post

APO – Aid Post Orderly

CBSC – The Capacity Building Service Centre

CCM – Country Coordinating Committee

CHW – Community Health Worker

CMC – Churches Medical Council

DFAT – Australian Department of Foreign Affairs and Trade

DH – District Hospital

DHO – District Health Office

DOF – Department of Finance

DOT – Direct Observation of Treatment

DOTS – Direct Observation, Short Course

DP – Development Partners

DPM – Department of Personnel Management

DRS – Drug Resistance Surveillance

DST – Drug Susceptibility Testing

DTP1 – Diphtheria/Tetanus/Pertussis injection number 1

GFATM – The Global Fund to Fight Aids, Tuberculosis and Malaria

HC – Health Centre

HEO – Health Extension Officer

HIS – Health Information System

HIV – Human Immunodeficiency Virus

HDSP – Health System Development Project

HSIP – Health Sector Improvement Program

IMRG – Independent Monitoring and Review Group

LLG – Local Level Government

M&E – Monitoring & Evaluation

M&RB – Monitoring & Review Branch, PNG National Department of Health

MDG – Millennium Development Goal

MDR-TB – Multi Drug Resistant Tuberculosis

MOU – Memorandum of Understanding

MSB – Medical Supply Branch

NCD – National Capital District

NDOH – PNG National Department of Health

NGO – Non-Government Organisation

NHIS – National Health Information System

NOL – New Organic Law

NTP – PNG National TB Control Program

ODA – Overseas Development Assistance

OIC – Officer in Charge

PHA – Provincial Health Adviser

PHC – Primary Health Care

PVA - Provincial Health Authority

PHO – Provincial Health Office

PMDT – Programmatic Management of Drug Resistant TB

PNG – Papua New Guinea

PR – Principal Recipient

PSM – Procurement and Supply Management

PUP – Pharmaceutical Upgrade Project

QML – Queensland Mycobacterium Laboratory

SEM – Senior Executive Management

STIs – Sexually Transmitted Infections

SR – Sub Recipients

SWAp – Sector Wide Approach

TDR-TB – Totally Drug Resistant Tuberculosis

TB – Tuberculosis

UN – The United Nations

UNAIDS – The Joint United Nations Programme on HIV/AIDS

UPNG – University of Papua New Guinea

USA – United States of America

VHV – Village Health Volunteer

WB – World Bank

WHO – The World Health Organization

WPRO – Western Pacific Regional Office

XDR – Extremely Drug Resistant

XDR-TB – Extensively Drug Resistant Tuberculosis

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# Part 1 – Introduction, Literature Review and Methods

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Part 1 of this thesis introduces the research (Chapter 1), the literature review to identify current gaps in knowledge and to refine the methods used in this research (Chapter 2), and the methods used (Chapter 3) to achieve the aim and objectives of this research.



# 1 Introduction

*“DOTS is an internationally recognized strategy for delivering the basics of TB case-finding and cure. It is not simply a clinical approach to patients, but rather a management strategy for public health systems, including political commitment as well as case-detection through quality assured bacteriology, short-course chemotherapy, ensuring patient adherence to treatment, adequate drug supply, and sound reporting and recording systems.”*

Source: (Stop TB Partnership and World Health Organization 2006)

This research analyses the 2006 Tuberculosis (TB) Direct Observation of Treatment (DOT), Short Course (DOTS) Policy<sup>1</sup> in Papua New Guinea (PNG)<sup>2</sup>, a resource poor setting with a weak health system still reliant on international donor assistance for the funding of the majority of its disease control programmes. The research specifically critiques the 2006 PNG TB DOTS Policy.

TB is a major health problem in PNG. With an official TB incidence of 347 new cases per 100,000 per year<sup>3</sup>(UNDP 2015), PNG is ranked second, after Cambodia, among 37 countries in the World Health Organization (WHO) Western Pacific Region (WHO 2011). TB control is a major disease control and health service challenge in PNG (GovPNG 2010) in a setting of a HIV epidemic (UNAIDS 2012) and rapidly emerging drug resistant-TB (Phuanukoonnon, Suarkia et al. 2008, Ahmadova, Heldal et al. 2012, Ballif, Harino et al. 2012, Kirby 2013).

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<sup>1</sup> The “2006 TB DOTS Policy” is used interchangeably with “2006 Stop TB Policy” throughout this thesis as even though the title of the WHO Global Strategy for TB Control changed from “TB DOTS” to “Stop TB” in 2006, DOTS was still the first and central component of the 2006 Global Strategy approach to TB control.

<sup>2</sup> PNG is used as the abbreviation for Papua New Guinea throughout this research.

<sup>3</sup> A detailed critique of the burden of TB in PNG is undertaken in Chapter 4.



## 1.1 Papua New Guinea

PNG is the largest Pacific Island country, located in the Western Pacific, just below the equator, with Indonesia's West Papua Province to the west, and Australia to the south. With a population of over 7 million people in the 2011 census, 85% of whom live in rural areas, and 42% living in the highlands region (WHO 2011), the population density is small for the size of the country, with large areas not settled by humans. This is partly due to the terrain but has also been attributed to the impact of diseases, particularly malaria, limiting where humans could live as well as the density of settlement (Riley 1983).

There are over 800 language groups (Serjeantson, Kirk et al. 1983, Wurm 1983, Foley 2000, Pawley 2006) with significant cultural diversity and strong loyalty to language group (Ploeg 1993, Schmid 1993) which is reinforced by PNG's mostly mountainous terrain. With a very limited road network, as well as many small islands, transport between the major centres and provinces is by plane or coastal shipping. The capital city, Port Moresby, has no road access, beyond a few kilometres, with the rest of the country. With these major access problems due to the terrain, high levels of poverty (Cammack 2008, Rogers, Bleakley et al. 2010), inadequate government investment and strategic planning, corruption, significant law and order issues, and human resource problems, health service provision is a massive challenge in PNG (Gibson and Rozelle 2003, Bolger, Mandie-Filer et al. 2005). PNG is ranked 156 on the Human Development Index (UNDP 2015) and will not achieve any of its Millennium Development Goals (UNDP 2015) despite significant foreign aid inputs specifically directed to assisting PNG to do so.

PNG has some of the worst health indicators in the Asia Pacific region (Pincock 2006), with a Maternal Mortality Ratio over 500 deaths per 100,000 live births (GovPNG 2009, NDOH 2009, Mola and Kirby 2013), under-five child mortality of 78 per 1,000 live births (Bauze, Tran et al. 2012), and immunization coverage rates of 60% in many parts of PNG (Clements, Morgan et al. 2006, Toikilik, Tuges et al. 2010). Along with continuing high rates of malaria (GovPNG 2009, UNDP 2015) previously unknown diseases such as cholera have emerged in PNG in recent years (Hall, Gillespie et al. 2013).

These poor health outcomes are a direct result of a weak health system which has declined in capacity over the past thirty years. There is a dysfunctional health governance structure with no real responsibility or accountability between the three levels of government – national, provincial and district. The result is low and declining capacity to deliver basic health services throughout PNG with poor health service delivery and health outcome indicators. This provided the setting and context for the 2006 TB DOTS (Direct Observation of Treatment, Short Course) policy with a \$US20m Global Fund to fight AIDS, TB and Malaria (GFATM) grant to fund the national roll out of TB DOTS. Critically examining and understanding the process by which the 2006 TB policy came onto the policy agenda, how it was formulated and implemented is the goal of this thesis.

## **1.2 History of this research and origin of the research questions**

The ideas for this research originated in November 2005, November 2006 and May 2007 when the author was the Public Health (Community Health / Health Promotion) Expert on the Independent Monitoring and Review Group (IMRG) for the PNG Health Sector SWAp (Sector Wide Approach). In this role, after extensive travel to observe

the PNG Health System, and consultations with health workers and health managers at the national, provincial and district levels throughout PNG, as well as aid donors to the PNG health sector the author contributed to IMRG Reports, in November 2005, November 2006 and May 2007, on matters relating to the provision of health services at the community level in PNG.

When it was announced in late 2006 that the PNG TB DOTS Policy, as outlined and defined by the *Country Status Report of National TB Program, PNG, 1997-2005* (Aia, Yadav et al. 2006), and the PNG *Country Strategic Plan to Stop TB, 2006-2010* (Aia, Yadav et al. 2006), had moved TB from a low policy priority disease to become a high policy priority disease, and was to be funded by a Round 6 \$US20mill Global Fund to Fight TB, Malaria and AIDS (GFATM) Grant (PNG CCM 2006), to implement TB DOTS throughout PNG from 2006-2010, questions about the formulation, adoption and funding of a national PNG TB DOTS Policy immediately came to mind.

The author knew from his work on the PNG Health Sector IMRG that TB was not a designated priority disease for PNG in the PNG National Health Plan 2000-2010 (GovPNG 2000), nor in the National Department of Health (NDOH) Strategic Plan for 2006-2008 (Mann 2006). The two priority diseases for funding and implementation of nationwide prevention and control Policies for the PNG Government, and therefore external donor assistance, up to 2006 were Malaria and HIV/AIDS (Mann 2006).

The announcement in late 2006 that TB had become a priority disease in PNG (now equal with HIV and Malaria) and had quickly received a Global Fund \$US20mill Grant to

fund the national roll out of the new 2006 PNG TB DOTS Policy, marked a dramatic change in PNG TB Control Policy, in a very short period of time.

This announcement prompted many, initially random, questions given the authors' recent experience of the PNG Health System. Over time these questions developed into three sets of questions.

The first question(s) was about the actual magnitude of TB as a health problem in PNG that justified a major Global Fund grant of this size, when TB had not been a Policy priority before 2006:

- What is the actual burden of TB as a disease in PNG that it should become a Policy Priority disease in PNG?
- Was the magnitude of the burden of TB in PNG a factor in this significant policy change?

The second question(s) came from the observation, also made whilst the author was a member of the PNG health sector IMRG, that in the 10 years leading up to 2006 every indicator of health outcome, and health service provision and performance had significantly declined. Underpinning this decline were major Governance reforms, with the decentralization of responsibility for all government services, including health, to the provincial and district level. These reforms created a governance structure which resulted in little or no accountability between the three levels of government, including for the implementation of health policies and programs, essentially causing complete fragmentation of the Health System. A central part of this observation during the 2005, 2006 and 2007 visits was the turbulent PNG political context, with

over 50% of members of Parliament losing their seats every five years, along with frequent changes in political alliances leading to regular changes in Governments and Ministerial portfolios in the life of one Parliament.

- What was the impact of this political instability and constant change on how the policy process works in PNG?

On deeper reflection it was apparent that these were questions directly relating to *TB DOTS Component 1 - Political Commitment*, which is seen as the first step in ensuring a TB DOTS Policy is delivered (WHO 2003, Stop TB Partnership and World Health Organization 2006). This led to a series of questions about political commitment and leadership in PNG, and the impact of political commitment and leadership on those governance structures which deliver Health Services in PNG:

- What does political commitment and leadership mean in PNG?
- What are the social, political, and economic factors (cultural institutions) which shape and construct Political Commitment and Leadership in PNG?
- How are Political Commitment and Leadership exercised in PNG?
- How has Political Commitment and Leadership shaped governance structures and the Health System in PNG?
- How do the resulting Governance structures impact on the PNG Health Systems capacity to formulate and deliver a TB DOTS Policy?
- What is the impact of the PNG construct of Political Commitment and Leadership on health system governance and capacity in PNG?

The answers to these questions provided the *health policy context* in PNG which any new health policy needs to deal with if the policy is to achieve its goals and objectives.

A third series of questions arose from the manner in which TB DOTS moved from being a low policy priority disease to become as important as HIV and malaria on the PNG Health policy agenda, in such a short period of time from 2004-2006:

- How did this dramatic and significant change in PNG TB Control Policy come about?
- What were the events and who were the key actors in the Policy Process which brought this significant policy change about?

In the absence of any previous published research on TB policy in PNG these questions informed and shape the research aims and objectives of this thesis.

These questions were then refined down to four questions which are the basis for the aims and objectives of this research:

- What is the true burden of TB in PNG requiring a national TB policy response?
- What does TB DOTS *Component 1 - Political commitment*, actually mean in the PNG, and the impact of this on the PNG Health Systems capacity to formulate and deliver a TB DOTS Policy?
- How did TB DOTS come onto the Health Policy Agenda in PNG in 2006; and how, and indeed if, the complex PNG Policy context was taken into consideration in the formulation of the 2006 PNG TB DOTS Policy?
- How did the PNG construct of political commitment impact on the implementation of the 2006 TB DOTS policy?

### 1.2.1 Research Aim:

The overarching aim is to describe and better understand how Health Policy is formulated in PNG by specifically examining the 2006 PNG TB DOTS Policy.

### 1.2.2 Research Objectives:

The four research objectives for this thesis are:

1. To describe TB as a health problem in PNG i.e. what is the actual health burden of TB in PNG as policy problem?
2. To describe and critique the PNG policy context with regard to TB DOTS *Component 1 – Political commitment*, the resultant governance structures, and the impact of these on the PNG health systems capacity to formulate a TB DOTS Policy?
3. To describe and critique the PNG TB DOTS policy *agenda setting process* from 2004 – 2006. What were the determinates of the key events, who were and what role did the key actors play, in TB DOTS coming onto the health policy agenda in PNG in 2006?
4. To describe and critique the impact of the PNG construct of *political commitment* on the implementation of the 2006 TB DOTS policy.

Central to this research is not to simply describe what happened to the TB Control Policy in PNG, but to critically articulate and understand why and how TB DOTS Policy came onto the PNG policy agenda in 2006, and if the complex PNG Health policy context was taken into consideration in both the formulation and implementation of the policy.

### **1.3 Structure of the Thesis**

The research is structured in six sections, or parts, so as to address and achieve each of the four Research Objectives.

#### ***Part 1 – Introduction, Methods and Literature Review***

Part 1 of this thesis introduces the research (Chapter 1), the literature review to identify current gaps in knowledge and to refine the methods used in this research (Chapter 2), and the methods used (Chapter 3) to achieve the aim and objectives of this research.

#### ***Part 2 – The Burden of TB in PNG***

Part 2 of this thesis addresses “*Objective 1 – To describe TB as a health problem in PNG*” i.e. what is the actual health burden of TB in PNG as policy Problem.

- *Chapter 4 – Tuberculosis in Papua New Guinea*, examines in depth the burden of TB in PNG. Starting with the official incidence and prevalence data for TB in PNG it finds that a weak health information system (HIS) means that the actual incidence and prevalence is not known for either drug sensitive or drug resistant strains of TB. There is no reliable data on which to plan or evaluate a TB DOTS Policy in PNG.



### ***Part 3 – Political Commitment and Leadership in PNG - the PNG Health Policy Context***

Part 3 of this thesis deals in detail with “*Objective 2 - To describe and critique TB DOTS Component 1 – Political commitment, the resultant governance structures, and the impact of these on the PNG Health Systems capacity to deliver a TB DOTS Policy*”:

- *Chapter 5 - Cultural institutions underpinning political commitment and leadership*, undertakes an in-depth critique and analysis of the cultural institutions in PNG which determines and forms political commitment and leadership in PNG;
- *Chapter 6 – Political Commitment, Governance Reforms and PNG Health System Performance and Capacity*, then critically examines how the unique PNG construct and style of political commitment and leadership influences and determines the PNG Health governance structures in PNG.
- *Chapter 7 – Political Commitment and TB DOTS in PNG – Standardized Treatment & Effective Drug Supply* examines in detail how the health system governance has directly affected the PNG Health System’s capacity to implement a TB DOTS Policy.

In summary, Part 3 undertakes a detailed analysis of the PNG TB DOTS *policy context* into which a TB DOTS Policy has to be delivered. It is only when this complex PNG *policy context* is understood that we can truly understand what is required to be addressed in formulating and implementing a TB DOTS Policy in PNG, and also see if these factors were taken into consideration during the 2006 PNG TB DOTS policy agenda setting process. Part 3 concentrates on the period from 1997 to 2006, in order to provide a clear picture of the PNG *policy context* leading up and at the time of TB DOTS moving onto the policy agenda in 2006.

#### ***Part 4 - Agenda Setting in the 2006 PNG TB DOTS***

Part 4 of this thesis deals with *Objective 3 - To describe and critique the 2006 PNG TB DOTS Policy Agenda Setting Process from 2004 – 2006*. Part 4 examines in detail the power relationships and role of various policy actors – international (aid donors), domestic, and technical advisers (policy entrepreneurs), and the sequence of events in this period which moved TB DOTS onto the policy agenda in PNG in the period from 2004-2006 resulting in the 2006 PNG TB DOTS Policy.

- *Chapter 8 - Agenda Setting and International Actors in the 2006 PNG TB DOTS Policy* describes and critiques the *policy actors at the regional and global level* who exert significant power and influence in the 2006 PNG TB DOTS policy agenda setting process.
- *Chapter 9 - Agenda Setting within PNG 2004-2006 in the 2006 PNG TB DOTS Policy* describes and critiques the agenda setting process in the 2006 PNG TB DOTS policy, the role of *key policy actors and entrepreneurs in PNG* in that process PNG during this period.

#### ***Part 5 – Political Commitment and Policy Implementation***

Part 5 of the thesis deals with *Objective 4 - To describe and critique the impact of the PNG construct of political commitment on the implementation of the 2006 TB DOTS policy*.

- *Chapter 10 – Political Commitment in Implementation of 2006 TB DOTS policy*, deals with how the PNG construct of political commitment affected the implementation of the 2006 Policy and the policy outcomes up to June 2013. Did the policy achieve its stated goal and targets and what determined these outcomes?

**Part 6 - Discussion & Conclusion**

- *Chapter 11- Discussion & Conclusion* brings the key points of the thesis together and offers suggestions for future research, as well as offering suggestions arising from this research as to how to address the health policy process in low and middle income countries such as PNG.

**1.4 PNG TB Policy Research Timeline**

Below is a Timeline of TB Control Policy in PNG. The grey area in this Timeline is the period of focus for this particular research and gives the key events which frame the research and which the research addresses in detail.

**Table 1 - PNG TB DOTS Policy Timeline**

**(Shaded areas is the period of study for this research)**

Year	PNG TB Policy Critical Junctures, Actors, Policy Windows & Policy Entrepreneurs
1871-1971	Unknown whether TB was present in PNG when the Europeans started to arrive in the late 19th century. However, with the arrival of Europeans circumstances changed and conditions developed that favoured the spread of TB. Once established in the PNG population TB quickly spread. Initial approach to TB case management was isolation of cases; with the introduction of antibiotics in 1950s & 1960s active case detection and treatment introduced.
1975	<b>PNG Independence</b>  Active case detection & 18 month treatment
1993	WHO declares <b>TB a global emergency</b>
1994/1995	<b>TB DOTS</b> adopted globally as official <b>WHO TB Policy</b> as the evidence based approach to TB Control.
1997	<b>TB DOTS Adopted as the policy for TB control in PNG.</b>  TB DOTS pilot programs in Lae District and National Capital District (urban settings, good communications & road access, populations able to access health services)  Small amount of PNG Govt recurrent budget, <b>NO international donor funding for TB control in PNG</b>

2000	<p><b>PNG National Health Plan 2000-2010</b></p> <p><b>Tier 1 Diseases</b> – HIV &amp; Malaria (focus for recurrent PNG funding &amp; donor funding)</p> <p><b>Tier 2 Diseases</b> – TB, not a priority disease.</p>
2001-2005	<p><b>AusAID – WHO/WPRO MOU for AusAID to fund WHO PNG Posts of a Medical Officer (TB) &amp; Secretarial Assistant (TB) for PNG in Port Moresby.</b></p> <p>AusAID – WHO/WPRO MOU renewed for period 2007-2008</p>
2002-2007	<p><b>Sir Peter Barter</b> appointed as PNG Minister for Health &amp; HIV. Good manager, very efficient.</p>
2003	<p><b>Round 3 GFATM</b> Grant for <b>Malaria Control</b> in PNG Approved \$US29.9mill (1<sup>st</sup> Aug 2004 to 31<sup>st</sup> July 2009)</p>
2004	<p><b>Dr Paul Aia</b> appointed Director PNG National TB Control Program</p>
2004	<p><b>Round 4 GFATM</b> Grant for <b>HIV/AIDS</b> in PNG Approved \$US29.9mill (1<sup>st</sup> Sept 2005 to 31<sup>st</sup> August 2010)</p>
Sept 2004-2009	<p><b>Dr Rajendra Yadav</b> appointed WHO Country Medical Officer, Stop TB. Good manager, very efficient. <b>AusAID funded position.</b></p>
2005	<p><b>Round 5 GFATM</b> Grant for <b>National PNG TB DOTS Policy</b> application submitted.</p> <p><b>Rejected</b> – National TB Control Program too weak.</p>
11 <sup>th</sup> Feb. 2005	<p><b>Meeting of major Program Partners’ to review the National TB Program and discuss the formulation of a TB Control Plan</b></p>
15 <sup>th</sup> – 22 <sup>nd</sup> March 2005	<p><b>Intra- and inter-branch meetings of the NDOH and the National AIDS Council Secretariat to discuss the formulation of a TB Control Plan</b></p>
21 <sup>st</sup> – 23 <sup>rd</sup> March 2005	<p><b>National TB Review Meeting and Workshop</b></p>
11 <sup>th</sup> – 12 <sup>th</sup> August 2005	<p><b>National Workshop for “Country Policy on TB/HIV Collaborative Activities”</b></p>
2005	<p><b>PNG NDOH Strategic Plan for the Papua New Guinea Health Sector 2006-2008</b></p> <p>Four Priority Public Health Strategic Directions – Immunization, Malaria, Maternal Mortality, HIV</p> <p>TB <b>NOT</b> a priority disease control area</p>
Jan & Feb 2006	<p><b>Dr Anastasios Konstantinos</b>, Director, Queensland TB Control Centre, hired by <b>AusAID as Consultant</b> to advise on &amp; write the PNG Country Status Report 1997-2005 &amp; Country Strategic Pan 2006-2010</p>
April 2006	<p><b>Sir Peter Barter, PNG Minister for Health &amp; HIV declares TB a “National Emergency”.</b></p>

	<ul style="list-style-type: none"> <li>• <b>TB a Tier 1 Disease in PNG</b></li> <li>• <b>TB onto the Policy Agenda in PNG</b></li> </ul>
July 2006	Round 6 GFATM Grant -“Expanding and implementing the Stop TB Strategy in Papua New Guinea” for \$US20.8 mill. <b>Approved</b> (1 <sup>st</sup> Oct 2007 to 30 <sup>th</sup> Sept. 2012)
2007-2008	<b>Roll out of TB DOTS to PNG commences</b> with parallel systems in place bypassing NDOH & PNG Health System
October 2009	<b>Dr Rajendra Yadav leaves PNG</b> to take up post with WHO Cambodia Stop TB Programme
2009	External Review of GFATM inputs identifies needs for Health System Strengthening as focus for GFATM inputs rather than large Disease Control Grants & need for situational analysis to improve GFATM proposal contextualization.
December 2010	GFATM adds PNG to list of recipient countries where “Additional Safeguard Policy” is required due to Grant implementation irregularities. OIG GFATM (5 July 2012). "Audit of Global Fund Grants to the Independent State of Papua New Guinea." <b>Due to corrupt use of funds Round 6 Grant suspended</b>
Feb 2011	Australia & PNG announce a new separate <i>Stop TB in Western Province</i> \$Aus11m project; 2 months after Round 6 TB Grant suspended In Western Province only, includes MDR-TB component World Vision is implementing agency
15 <sup>th</sup> April 2011	PNG National Department of Health resigns as the Principal Recipient for Global Fund supported Programs in PNG for TB Round 6.
5 <sup>th</sup> July 2012	World Vision appointed a new Principal Recipient for Round 6 TB Grant.
June 2013	<b>Round 6 GFATM Grant ends</b> , no immediate TB DOTS funding in PNG
June 2013 -October 2013	No funding for TB control activities in PNG
December 2013 – December 2014	Interim Global Fund Grant of \$US9.5m whilst further grant application prepared
Feb 2015	Gates Foundation announces \$Aus18m donations for TB control in PNG via Global Fund; World Vision also donates \$Aus8m; all funds to be administered by World Vision

## **2 Review of the Literature**

### **2.1 Introduction**

There are two aims of the literature review for this research:

The *first* is a critique of the literature in order to describe and critique current knowledge on TB as a global policy problem and then in PNG in particular. We then examine the global context and significant trends affecting health policy with regard to TB control in developing countries – a major increase in funding, the growth of policy transfer, and the emphasis on health system strengthening.

The *second* aim of this literature review is to describe and critique current understandings of health policy and the health policy process. We also identify and undertake a critique of frameworks available in the literature for their ability to describe and critique health policy as it applies to political commitment (objectives 2 and 4) and agenda setting (objective 3) in the development of the 2006 TB DOTS Policy in PNG. This is particularly with regard to political commitment, agenda setting, the role of international actors, and governance in health systems so as to critique and describe the policy process which led to the adoption and funding of the 2006 TB DOTS Policy in PNG.

### **2.2 Review of Peer Reviewed Literature**

In order to describe and critique the complex policy process and to identify, from the literature, the most applicable frameworks for analysis of the process in the 2006 PNG TB DOTS policy, the terms used for the review of the peer reviewed literature was

guided by the four research objectives. Medline, PubMed and Google Scholar data bases were searched. The first stage of the literature review used the search term(s) “Papua New Guinea” in combination with “Tuberculosis”, “Tuberculosis Control”, “DOTS”, “DOT”, “Short Course”, “Health System”, “Governance”, “Health Governance”, “Health Information”, and “HIS”. As the literature review was being conducted it became apparent the further terms were significant and were included in the search - “Health Reform”, “Health Sector Reform”, “Organic Law”, “Donor Assistance”, “World Bank”, “Asian Development Bank”, “World Health Organization”, “AusAID”, and “Global Fund”. This resulted in 254 papers. Based on the abstracts of these papers the main themes that emerged were – health systems; health systems governance; political leadership and commitment; aid donors; donor assistance; policy transfer; agenda setting; policy implementation; TB DOTS; AusAID; WHO; Global Fund to fight AIDS, TB and Malaria. As a result of the literature review the research objectives were further refined and the research methods developed as we set out in the remainder of this Chapter.

### **2.3 Grey (non-peer reviewed) Literature**

The review of the grey literature review commenced with a search of the websites of those organisations identified in the review of the peer reviewed literature. The grey literature review was extended to include those reports and documents identified in the key informant interviews as relevant to the health system, governance and TB control in PNG. Reports were collected during the three field visits to PNG, as well as during the subsequent visit to AusAID in Canberra in June 2008. The grey literature identified using these methods produced a significant number of reports – feasibility studies; base line, commencement of project, mid-term and end of project reports and

reviews, for and on donor funded health projects in PNG. As well there were a number of consultant's reviews of the PNG Health System prepared for United Nations agencies, bilateral agencies, non-government organizations and the development banks. Reports identified as being relevant to the themes for this research, from the 1960s up to 2014, were included in the analysis by themes, using the same terms as those for the peer reviewed literature. The synthesis of the major themes arising from the literature review is presented next.

#### **2.4 Tuberculosis as a Global Health Policy Problem**

Firstly, TB remains a disease of global health significance, in the top twenty diseases in the most recent Global Burden of Disease study (GBD 2013). WHO data states that there were 9.0 million cases of TB with 1.5 million deaths from TB globally in 2013 (WHO 2014). TB became a low global health priority disease in the 1970s and early 1980s following the discovery of effective antibiotics in the 1950s and 1960s with the virtual elimination of TB in developed countries (Fox 1958, Fox 1979, Ogden, Walt et al. 2003). The emergence of Human Immunodeficiency Virus (HIV) in the 1980s and 1990s, the emergence of TB in HIV infected men in North America in the late 1980s (Cantwell, Snider et al. 1994), and the recognition of the strong association between TB and HIV (Odhiambo, Borgdorff et al. 1999), brought a renewed recognition of TB as a disease of global health significance. This provided the "policy window" for TB to again come onto the global health agenda (Ogden, Walt et al. 2003).

In April 1993 WHO declared TB a "global emergency", and by 1994 was branding its new TB DOTS Policy as its official policy response to the re-emergence of TB and the



“required breakthrough in TB Control” (Kochi 1994, Ogden, Walt et al. 2003). WHO employed staff with very strong advocacy skills to successfully market the TB DOTS Policy. This was extremely successful to the point of declaring “*we now have the cure for TB*” (Kochi 1991, Ogden, Walt et al. 2003). This implied that if the TB DOTS Policy was fully implemented there was now no need for further diagnostics or treatments for TB. DOTS Policy advocates argued that TB Policy needed to be simple so that it could be easily adapted to the resource poor context. The DOTS advocates believed that if you kept a policy to five easily understood components, with clear targets to achieve those components, then the Policy would be able to be implemented in a resource poor setting (Kochi 1991, Ogden, Walt et al. 2003).

This approach was questioned and criticized by experienced TB control personnel and academics as both oversimplifying the complexity of the required response to TB control within individual countries, and also as most likely resulting in no further research funding for TB diagnostics or treatments, if the TB DOTS Policy was branded as “the solution” (Brown 1997, Ogden, Walt et al. 2003). Their concern was the same as Fourier who points out that the absence of empirical evidence, based on reliable data, resulting in “*evidence based policy making*”, we end up with “*policy-based evidence making*” (Fourie 2014). Fourier made these observations in researching HIV policy in weak states (Fourie 2014), such as PNG. Indeed, further, research has questioned the validity of the Direct Observation of Treatment (DOT) component of the TB DOTS Policy (Zwarenstein, Schoeman et al. 1998, Volmink and Garner 2007). Alternative policy approaches to TB control have been proposed based on successful programs in Central and South America in the 1990s focused on MDR-TB (Farmer 2001).

The TB DOTS Policy was based on the work of Dr Karol Styblo, an epidemiologist working in Africa on TB control in the 1970s and 1980s, when TB was no longer on the policy agenda in the developed world (Styblo 1978, Styblo 1985). As a result when TB re-emerged as a major public health problem in HIV positive men in North America in the late 1980s Karol Styblo had a TB control Policy when the rest of the world had none (Cantwell, Snider et al. 1994, Ogden, Walt et al. 2003). Karol Styblo's work became the basis for the TB DOTS policy.

The five components of the WHO TB DOTS Policy are (WHO 2012, WHO 2014):

- (1) Political commitment, with increased and sustained financing;
- (2) Case detection through quality-assured bacteriology;
- (3) Standardized treatment, with supervision and patient support;
- (4) An effective drug supply and management system; and
- (5) Monitoring and evaluation system, and impact measurement.

The goal of TB DOTS at the country level is to detect 70% of cases, and cure 85% in order to reduce TB incidence cases (WHO 2002). As the official WHO policy for TB control TB DOTS has been the only approach to TB control being implemented in low and middle income countries such as PNG (Stop TB Partnership and World Health Organization 2006, WHO 2014). Officially the local context was and is meant to be taken into consideration as the policy was transferred and adapted to each country setting.

TB was made one of the three priority diseases (HIV, TB and malaria) to achieve MDG 6, when the MDGs were declared in 2000, with the target of reducing prevalence of TB and deaths due to TB by 50% compared to the 1990 baseline, by 2015 (Stop TB Partnership and World Health Organization 2006, Lawn and Zumla 2011). As a result TB was made one of the priority diseases for funding by the Global Fund to Fight Aids, TB and Malaria (GFATM) which was established in 2002 and which has been successful in mobilizing significant levels of funds to achieve MDG 6 (GFATM 2001, Feachem and Sabot 2007). The emergence of multi-drug resistant (MDR-TB) (Kochi, Vareldzis et al. 1993), extensively (XDR-TB) (Gandhi, Moll et al. 2006, Gandhi, Nunn et al. 2010) and totally drug resistant TB (TDR-TB) (Velayati, Masjedi et al. 2009) has maintained TB on the global health agenda. Recent reviews of approaches to global TB control have raised concerns about the impact of this major increase in funding on health systems in developing countries (Atun, Weil et al. 2010, Marais, Raviglione et al. 2010). The need to “assess potential for synergy; ensure optimal use of available resources, support best-practice models and reduce duplication/waste” (Marais, Raviglione et al. 2010) is emphasized. Further “although external funds help to provide essential services for tuberculosis in many poor countries, these funds might reduce local ownership, as well as the identification of sustainable local solutions” (Marais, Raviglione et al. 2010). The reviews also note that the “unintended consequences” of donor driven health interventions are rarely studied or reported (Marais, Raviglione et al. 2010).

## **2.5 Tuberculosis in Papua New Guinea**

It is unknown whether TB was present in PNG when the Europeans started to arrive in any number in the late 19th century, when missionaries and traders came to

settle(Wigley 1975, Ley, Riley et al. 2014). However, with the arrival of Europeans circumstances changed and conditions developed that favoured the spread of previously unknown diseases and of diseases that had been contained in small populations because of their comparative isolation(Wigley 1975, Ley, Riley et al. 2014). Once established in the PNG population TB quickly spread. As in the rest of the world, other than isolation of TB cases, an extremely difficult task in the PNG setting, there was little that could be done to control TB until the 1950s and 1960s when effective antibiotics became available to treat TB (Wigley 1975, Ley, Riley et al. 2014).

Once antibiotics did become available in PNG treatment protocols using the new antibiotics were developed (Tao 1975, Wigley 1975). The initial protocols required from 18 months to 2 years of treatment as an inpatient. The side effects of the antibiotics made compliance a significant issue. Regular colonial administration run health patrols in which doctors and nurses were available down to the district level in PNG made ambulatory care possible after the intensive hospital period of treatment (Wigley 1975). Despite this compliance was still a major issue (Wigley 1975). In the post-colonial period, after Independence in 1975, these protocols continued combined with active case detection to detect and treat TB (Tao 1975, Endo 1979, Levy, Dakulala et al. 1998).

This was the approach to TB control in PNG until 1997 when TB DOTS was introduced in PNG in two Provinces – the National Capital District and Lae (Aia, Yadav et al. 2006). The initial TB DOTS programs in PNG were limited to these two provinces with limited funds, and no foreign donor funds, as TB was not a priority policy disease in PNG until 2006 (Aia, Yadav et al. 2006). Whilst TB DOTS was adopted as the approach to TB

Control in these two provinces TB and TB DOTS did not actually come onto the PNG Policy Agenda and attract sufficient funding for it to become national policy until 2006.

The formulation, agenda setting and implementation of the 2006 PNG TB DOTS (Stop TB) Policy is the focus for this research. How TB moved from being a low policy priority to become a so called Tier 1 High Priority Disease, and how the TB DOTS policy became an attractive policy option at the political level, both within PNG and to aid donors, is central to this research. A further point of interest is if the unique and complex PNG policy context was taken into consideration in that policy process.

## **2.6 Global Context for Health Policy**

It is apparent from the literature that health policy in PNG, and the 2006 TB DOTS policy in particular, did not develop in isolation but was influenced by global developments or trends which had a major impact on how the 2006 policy came into existence. From the literature review three global trends have emerged in the last two decades that have significantly influenced how health policy comes onto the policy agenda, and is formulated and implemented in developing countries – an increase in aid funding for health in developing countries, an increase in health policy transfer to developing countries, and recognition of the importance of strong health systems to deliver disease control policies, including TB control policy. These are also why undertaking health policy analysis at the global and resource poor level, and of the policy interaction between these levels, has taken on greater importance.

### 2.6.1 Increased Funding for TB DOTS

The first of these major trends is *a significant increase in funding for health in developing countries*. In the early 2000s major health initiatives were established in order to mobilize funds to achieve the Millennium Development Goal (MDG) targets in developing countries. Public private partnerships such as the Global Fund to Fight AIDS, TB and Malaria (GFATM), and the Global Alliance for Vaccines and Immunisation (GAVI) were established. Along with new bilateral funding initiatives such as the U.S. Presidents Emergency Plan for AIDS Relief (PEPFAR), these organizations have been successful in mobilizing significant levels of funding specifically for MDG target diseases (Brugha 2008, McCoy, Chand et al. 2009, Lu, Schneider et al. 2010). Founded in 2002, the Global Fund alone in its first five years mobilized \$US9.6bill globally for HIV, TB and malaria programs in developing countries (Feachem and Sabot 2007). This was a massive increase in the level of funding available to assist developing countries achieve their MDG6 targets. By 2013 aid donors provided \$US31.3 bill in development assistance for health in low and middle income countries(Institute for Health Metrics and Evaluation 2014), a fivefold increase on 1990 levels. The increased funds these global health and bilateral agency initiatives were able to provide, came significant influence on health policy formulation and implementation in a resource poor, which leads to the next important trend.

### 2.6.2 The Growth of Policy Transfer

The second important trend in health policy in developing countries is *the growth of policy transfer “in which knowledge about policies, administrative arrangements, institutions and ideas in one political setting (past or present) is used in the*

*development of policies, administrative arrangements, institutions and ideas in another political setting” (Dolowitz and Marsh 2000).*

The increase in aid funds for health is often linked with particular health policies. TB DOTS is an excellent example. For the past twenty years there has been an identified need to increase knowledge about, and the understanding of, the process of policy transfer, from the global to the national levels, and from the national to the sub-national levels. There was a need to develop systematic evidence and understanding of how policy transfer takes place (Dolowitz and Marsh 1996, Dolowitz and Marsh 2000). This has led to an increase in interest and research on the policy process in developing countries and the different stages of the policy process, including policy transfer. To undertake this research existing frameworks from the political sciences in North America and Europe have been adapted and applied to health policy analysis in developing countries. It has also led to the development of new methods and frameworks applicable to the particular needs of health policy analysis in developing countries. Major reviews of the health policy literature undertaken in 2008 (Gilson and Raphaely 2008, Walt, Shiffman et al. 2008) and in 2014 (Berlan, Buse et al. 2014, Erasmus, Orgill et al. 2014) have noted that whilst there have been major contributions to understanding how health policy takes place in, and is transferred to developing countries, there are still major gaps in knowledge. Two areas in particular are identified: first, the analysis of power relationships involved in policy transfer between global health initiatives and developing countries; and second, the workings of local policy processes in developing countries, in very different policy contexts to North America and Europe. A good example is provided by the lack of research into the

nature and forms of *political commitment*, a central component of global health initiative policies.

### 2.6.3 Health System Strengthening

The third important trend or development in global health policy was the focus on *health system strengthening*. Despite the major increase in funding for HIV, TB and Malaria to achieve the Millennium Development Goal targets, these targets were not being achieved by the mid 2000s. The lack of capacity within local health systems to deliver interventions to achieve population coverage was recognized as the major constraint. As a result the Health Systems Strengthening initiative came about, also in the early 2000s.

In the World Health Report of 2000 the World Health Organization was the first group to address health system performance. This provided a catalyst for a debate and focus on the importance of health systems (WHO 2000, WHO 2007, de Savigny and Adam 2009, Hafner and Shiffman 2013). WHO defines a health system as “*the collection of organizations and actors whose main intent is to promote, restore and maintain health*”(WHO 2007). WHO identifies six building blocks of a health system in its framework: “*service delivery, a well-performing health workforce, good health information system, access to medical products and technologies, financing, and leadership and governance to ensure and monitor performance*”.(WHO 2007).

However, this framework has been criticised for over simplifying the local complexity of health systems. Health systems are far more complex than six building blocks and this representation of health systems has not received full global support (Atun 2012, Hafner and Shiffman 2013).



Coker and Atun in researching the impact of TB DOTS programs found that health systems need to be understood within a much more complex local context which they compare to a Gordian knot (Coker, Atun et al. 2004). In trying to understand why TB DOTS programs do or do not achieve targets they found the level of integration into the local health system was a key factor - *“in many countries integration is not achieved and (TB DOTS) programmes are set up in parallel with existing health systems. At worst, the objectives of vertical programmes are not fully aligned with countries’ governmental health priorities and are ‘owned’ by international development agencies or local NGOs that have different lines of management and accountability, resulting in fragmentation and duplication of services.”* (Atun, Lennox-Chhugani et al. 2004)

They identified the need to develop evaluation instruments or tools which took this complexity into consideration when evaluating TB control programs (Atun, Lennox-Chhugani et al. 2004, Coker, Atun et al. 2004). They found that traditional epidemiological methods missed the complexity, and often the more important health system and local contextual factors which influenced and determined outcomes were “controlled out” of analysis by epidemiological studies (Coker, Atun et al. 2004). To capture the impact of the complexity of both local context and health systems they drew on the work of Pawson’s realistic evaluation approach (Pawson and Tilley 1997, Atun, Lennox-Chhugani et al. 2004, Coker, Atun et al. 2004) to firstly examine the elements of the health system within which the infectious diseases programme is embedded, and secondly to assess the infectious disease specific components of the programme. Pawson and Tilley attempts to go beyond the usual question of did a

programme work or not work to ask why a programme works, for whom and in what circumstances does a program work(Coker, Balen et al. 2010).

They provide five elements to this framework to evaluate a programme whilst acknowledging its complexity and the environment in which it sits by critically examining (Coker, Balen et al. 2010). First, *context* denotes the political, legislative, social, economic and technological environments within which communicable disease control programmes sit. Secondly, the *epidemiological problem* refers to infection levels and various disease characteristics. For example, this might relate to upstream risk factors such as the emergence of drug-resistant strains of TB or HIV. The third component is the *intervention* intended to serve public health. For example, in TB control this could be the DOTS strategy and its respective components. The fourth element is the *mechanism* by which interventions are delivered. The fifth element of the conceptual framework relates to *outputs*. Outputs are public health concepts that can be measured or determined.(Coker, Balen et al. 2010).

This tool was used to evaluate the impact and integration of GFATM funded HIV, TB and Malaria projects in Vietnam (Conseil, Mounier-Jack et al. 2010), Indonesia (Desai, Rudge et al. 2010), Thailand (Hanvoravongchai, Warakamin et al. 2010), Laos (Mounier-Jack, Rudge et al. 2010) and Papua New Guinea (Rudge, Phuanakoonon et al. 2010) have been undertaken.

The evaluation of the impact and integration of GFATM grants in PNG was based on 30 interviews along with a review of relevant documents and reports (Rudge, Phuanakoonon et al. 2010). The evaluation found that the GFATM Grants had

developed positive synergies between the government health system and civil society partners.

However, the performance based nature of the Global Fund projects within a weak PNG health system had led to parallel monitoring and evaluation, and drug procurement and supply chain systems. The evaluation noted that the severely limited and overburdened pool of human resources in the PNG health system had been skewed towards the three Global Fund project diseases both at the management and service delivery levels. All these factors, given the dependence on donors and a weak system, raised questions about the sustainability of the programmes (Rudge, Phuanakoonon et al. 2010). Table 2 provides the summary of the results when applying the framework to PNG (Rudge, Phuanakoonon et al. 2010).

**Table 2– Extent of integration of Global Fund portfolios for HIV and TB into the disease programmes, and the disease programmes into the general health system, for each health system element and function in Papua New Guinea**

Health system functions	Elements of integration	Global Fund portfolio into the disease programme		Disease programme into the health system	
		HIV	TB	HIV	TB
Stewardship and governance	Overall extent of integration				
	1: Regulatory mechanisms				
	2: Accountability framework				
Service delivery	Overall extent of integration				
	3: Human resources for counselling and testing				
	4: Human resources for laboratory testing				
	5: Human resources for care and treatment				
	6: Human resources for delivery of HIV-positive mothers		n.a.		n.a.
	7: Physical infrastructure for counselling and testing				
	8: Physical infrastructure for laboratory testing				
	9: Physical infrastructure for care and treatment				
	10: Physical infrastructure for pregnant HIV-positive females		n.a.		n.a.
	11: Procurement and supply of laboratory equipment				
	12: Procurement and supply of medicines				
	13: Care pathways for opportunistic infections		n.a.		n.a.
	14: Care pathways for preventing mother-to-child transmission (PMTCT)		n.a.		n.a.
	Demand generation	Overall extent of integration			
15: Financial incentives					
16: Information, education and communication					
Monitoring and evaluation	Overall extent of integration				
	17: Data collection and recording				
	18: Data analysis				
	19: Reporting systems				
	20: Performance management system				
Planning	Overall extent of integration				
	21: Planning				
Financing	Overall extent of integration				
	22: Fund pooling				
	23: Provider payment methods				
	24: Funding source	n.a.	n.a.		
	25: Cross-programme use of funds				

**Key:**

- This element is **fully** or **predominantly** integrated into the general health system, i.e. this element is (quasi) exclusively under the management and control of the general health care system.
- This element is **partially** integrated into the health system or; this element is integrated in some but not all cases, i.e. this element is managed and controlled both by the general health care system and a specific programme-related structure.
- This element is **not**, or only to a very limited extent, integrated into the health system as a whole, i.e. this element is (quasi) exclusively under the management and control of a specific programme-related structure which is distinct from the general healthcare system.
- Does not apply.

Source: (Rudge, Phuanakoonon et al. 2010)

The Coker and Atun framework was developed with Global Fund support to provide a tool or instrument to rapidly assess the implementation, impact and integration of disease control programmes into health systems in developing countries (Coker, Balen et al. 2010, Rudge, Phuanakoonon et al. 2010). However, this thesis is asking fundamentally different questions which are about the policy process leading up to the formulation and agenda setting for the 2006 TB DOTS policy. From the literature it is apparent that it is the policy sciences which provide the methods that enable us to undertake an analysis of these policy processes.

## **2.7 The Policy Process**

In 1951 Harold Lasswell first defined the “*policy sciences*” (Lasswell 1951, deLeon and Vogenbeck 2007) as the attempt “*to resolve the problems pressing society and its government*” (deLeon and Vogenbeck 2007). Scientific methods could and should be brought to the analysis of how public policies came into existence, and how policy makers arrived at the set of policies or direction which governments put into place to govern society (deLeon and Vogenbeck 2007). This marked the commencement of bringing academic rigor to the understanding and study of Public Policy. It was also the start of a major academic discipline, now generally referred to as Public Policy Analysis, and has led to a major field of research in order to research and understand why policy decisions are made in the process a policy goes through to become a policy that is formulated, adopted and implemented (deLeon and Vogenbeck 2007).

In the broader public policy literature the policy process was initially conceived of as following a simple linear process of problem recognition and issue selection, policy

formulation and decision-making, implementation, and finally evaluation –the so called *stages heuristic* or *policy cycle* model (Lasswell 1951, deLeon 1999). In the 1980s it was recognized that in the real world the policy process often does not follow a logical linear sequence. “Policy formulation and decision-making” can and does take place before “problem recognition and issue selection” has taken place. Policy is subject to external influences by a complex range of actors who can change over time. There can be periods of stagnation and then rapid development when political and social circumstances change. The linear nature with clear differentiation into distinct stages of the stages heuristic is not able to take the complexity of the real world nature of the policy process into consideration and new frameworks for policy analysis needed to be developed (Sabatier 1999, deLeon and Vogenbeck 2007, Jann and Wegrich 2007).

## **2.8 The Multiple Streams Framework - Agenda Setting**

John Kingdon in his in-depth study of the policy process in the USA in the 1970s developed a framework which takes into consideration the complexity of the real world nature of the policy process. He was particularly interested in understanding and examining why and how one particular policy, from multiple alternative policy options, came onto the public policy agenda (Kingdon 2011). This became known as *agenda setting*.

Kingdon found that policy making does not proceed neatly in stages, steps or phases (Kingdon 2011). He describes the policy process as “organized anarchy” (Kingdon 2011). His research was focused on the “organized” aspect, rather than the “anarchy”,

of the policy process i.e. a policy actually goes through a policy process which has definite characteristics, so whilst not linear, it is organized, and therefore is open to rigorous examination and understanding (Kingdon 2011).

Kingdon identifies three independent policy making streams which flow through the policy system all at once, each with a life of its own (Kingdon 2011):

1. The *problem stream* refers to the manner in which, out of multiple policy problems confronting society and government, one particular policy problem becomes of sufficient importance to receive the attention of policy makers. This may be due to the size of a problem, or the perception of the size of the problem i.e. *“the perception of problems as public matters requiring government action.”* (Buse, Mays et al. 2006).
2. The *policy stream* consists of *“the ongoing analyses of problems and their solutions together with the debates surrounding their proposed solutions.”* (Buse, Mays et al. 2006). From multiple policy options the *policy stream* provides the policy or solution to the policy problem.
3. The *politics stream* *“operates quite separately of the other two streams and is comprised of events such as swings of national mood, changes of government and campaigns by interest groups.”* (Buse, Mays et al. 2006). The *politics stream* takes place at the political level, when a problem becomes sufficiently important to require a policy to respond to the problem. The politics stream is however significantly influenced by policy actors outside the politics stream.

Using the term “coupling” Kingdon found that a policy issue *“is most likely to achieve public agenda status when public problems, policy alternatives, and political*

*opportunities intersect*" (Kingdon 2011), at what is called a "*policy window*", i.e. an event, or series of events, that brings the *problem stream*, the *policy stream* (the policy solution to the policy problem) and the *political stream* (an openness or demand at the political level for a policy response), together so that the policy is adopted by the government i.e. the policy comes onto the policy agenda.

There are patterns to the intersection of the three policy streams; they are not random. Kingdon found that *policy entrepreneurs* know how to pull the three policy streams together, however this is difficult to accomplish (Kingdon 2011). Policy entrepreneurs are continually looking for connections between the politics and policy making and creating "*windows of opportunity*" (Kingdon 2011). Whilst politicians are central, other policy actors - "*interest groups and lobbyists, academics and consultants are also influential*" (Kingdon 2011), in agenda setting.

However, the problem or constraint in applying the multiple streams framework to this research is that it was developed specifically for analysis of agenda setting and the policy process in the United States of America (USA). We need to be aware of the significant differences in the policy context and process between the USA, where Kingdon undertook his research and developed the three streams framework, and PNG. A major difference is how and where power in the policy process and agenda setting lies. In the USA power lies within the United States politics stream, and much of the three streams policy analysis focuses on how power is exercised within this specific context.



As we have already seen there is a very different power dynamic and imbalance in the policy process in developing countries such as PNG due to the influence donors exert due to their major levels of aid funding. The three streams framework as applied in the USA does not allow us to take such an overwhelming power imbalance into consideration. Given that aid donors contribute a significant proportion of funds to health services provision in PNG there is a very different set of elements operating in the policy process in PNG. Aid donors exert much power and influence in the policy process and agenda setting in PNG with much of the policy process taking place outside of PNG at the regional and global levels. So we need to adapt the three streams framework to our analysis of the 2006 PNG TB DOTS policy.

In order to undertake analysis of policy agenda setting in a resource poor setting PNG to answer the research questions arising from *Objective 3 - To describe and critique the PNG TB DOTS policy agenda setting process from 2004 – 2006*. (i.e. what were the determinates of the key events, who were and what role did the key actors play, in TB DOTS coming onto the health policy agenda in PNG in 2006), we now examine the adaption of the three streams framework to the resource poor setting by Walt et al. This adaption enables an analysis of the regional and global policy process, including power relationships in agenda setting, and policy formulation, transfer and implementation which provides the most useful framework for the analysis undertaken in this thesis.

## 2.9 Health Policy Analysis – Context, Process, Actors, Content

Drawing on the policy sciences and the three streams framework Walt et. al. (Walt and Gilson 1994) were amongst the first to apply the broader public policy methods to health policy. They believed, and confirmed in their research, that health policy matters because policy determines resource allocation for health and as a result is a central determinant of people's health and health outcomes. *“Who makes and implements policy decisions (those with power) and how decisions are made (process) largely determine the content of health policy and, thereby, ultimately people's health”* (Buse, Mays et al. 2006).

It is the Walt et. al. definition of *health policy* which is used in this research - *“Health Policy covers courses of action (and inaction) that affect the set of institutions, organizations, services and funding arrangements of the health care system (both public and private)”* (Buse, Mays et al. 2006).

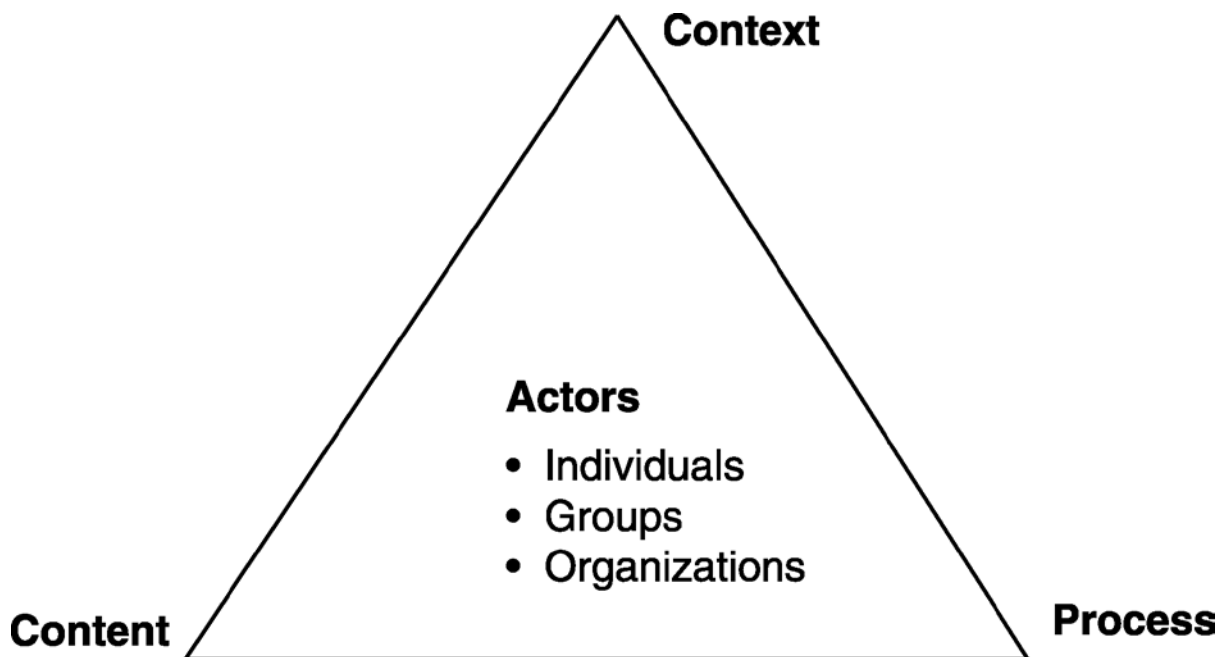
They also started with the insight that health policy is not simply about the wording or the content of the policy but is the result of a *policy process* which they defined as *“The way in which policies are initiated, developed and formulated, negotiated, communicated, implemented and evaluated”* (Buse, Mays et al. 2006) which is a dynamic process with *“the policy environment continuously shifting, transforming relations between groups and between institutions* (Walt and Gilson 1994).

Given the impact of health policy on people's health and health outcomes undertaking health policy analysis is both legitimate and necessary because it helps and enables us to act effectively to improve the health of people (Walt and Gilson 1994). They see

*health policy analysis as being “concerned with the processes of policymaking, it is also centrally concerned with the behaviour of actors in formulating and implementing policy and the context within which policies are promulgated. ... policy is not simply about prescription or description, and nor does it develop in a social vacuum; it is the outcome of complex social political and economic interactions” (Walt and Gilson 1994).*

Walt and Gilson (Walt and Gilson 1994) were also the first to identify the need to develop distinct frameworks for policy analysis in the health sector in low and middle income countries. *“Policy analysis is an established discipline in the industrialized world, yet its application to developing countries has been limited. The health sector in particular appears to have been neglected” (Walt and Gilson 1994).*

Walt et. al. developed the Context, Process, Actors and Content Framework for policy analysis which requires a detailed examination of not just the *content* of the policy but also of the *actors* involved in developing policy, the *context* within which the policy was developed and also the *process* the policy underwent as it was developed (Walt and Gilson 1994, Buse, Mays et al. 2006). This framework is conceptualized in Figure 1 the Policy Analysis Triangle.



**Figure 1 – Policy Analysis Triangle**

*Source:(Walt and Gilson 1994, Buse, Mays et al. 2006)*

An *actor* is anyone who has influence in the policy process. This can be individuals, organizations, interest or pressure groups or networks, civil society organizations or multinational organizations.

*Context* draws on the work of Leichter (Leichter 1979) , the complex mix of “*political, economic and social, both national and international, which impacts on health policy*”(Buse, Mays et al. 2006). Using the approach of Leichter(Leichter 1979), and that of Walt et. al.(Walt and Gilson 1994) as articulated in Buse(Buse, Mays et al. 2006), to critique and understand the complex PNG policy context is central to this research on TB DOTS Policy in PNG.

*Process* refers to “*the way in which policies are initiated, developed or formulated, negotiated, communicated, implemented and evaluated*”(Buse, Mays et al. 2006).

*Content* of the policy can only be understood when it is examined as part of the policy process which involves and considers actors, context and process.

A central tenet of the Walt et. al. framework is the need to understand power structures and relationships in the policy process. Power within relationships in policy decisions, and the process by which decisions are made, determines the content of health policy. They make the point that the policy process is often about *“political compromise and not a rational debate”* (Walt and Gilson 1994), so that the power of the actors and organizations to influence the policy process is central to the direction the policy process takes. They point out that *“important and professional networks of managers and professionals”*(Walt and Gilson 1994), bring influence to the policy process. Critically examining and understanding the role of power in relationships in the policy process is even more important in the case of low and middle income countries, with complex external power relationships such as aid donors, technical advisers etc., influencing the policy process. *“In many low income countries there are large gaps between top and lower level bureaucrats, between nurses and doctors, between policy elites and managers. In such countries power is further complicated because it rests not only on internal relationships, but significantly, on external relationships with advisers, experts, aid donors and financial institutions. Policy analysis cannot continue to ignore the influence of values and group interests – the “who” of ..... policy choice and implementation practices”*(Walt and Gilson 1994).

This framework provides the ability to critically examine and understand the dynamic and complex PNG TB DOTS policy process – the actors (internal and external) including the power relationships between those actors, the complex PNG policy context

(cultural institutions, governance and health system), and the capacity to formulate and implement health policy in PNG, which means this framework provides the relevant method to undertake analysis of the TB DOTS Policy in PNG.

Applying these methods Walt et al undertook one of the first studies examining the role of international organizations in the transfer of policy ideas, and the promotion of particular macro-level policies (Walt, Lush et al. 2004). This study examined the development and transfer of TB DOTS policy and syndromic management of sexually transmitted infections (STIs) policy to developing countries. It found that policy transfer took place in *three separate but interrelated iterative loops*. Each loop had its own network of actors with links to organizations and varying degrees of authority and funding. The *first loop* (field level, context specific genesis of policy) was the development of the policy at the local level, before agenda setting and policy transfer (Walt, Lush et al. 2004). This occurred at the local level through a “bottoms up”, field oriented, context specific process with local groups of public health doctors and epidemiologists. In the case of TB DOTS this stage took place over many years starting in the 1960s in India with ambulatory care of TB patients instead of hospital care. In the 1980s in Africa the length of TB treatment was shortened to 6 months and to ensure compliance, an initial two month intensive phase of treatment as an inpatient in hospital was introduced. The *second loop* (global policy networks) took place at the global level in international organizations in the late 1980s and early 1990s when there was the need for a TB policy to respond to the rapid re-emergence of TB in North America in HIV positive patients (Walt, Lush et al. 2004). The second loop involved a related, but separate, group of policy actors in international organizations who took up the work done in the first loop and consolidated the knowledge generated in the very

context specific first loop. They turned that knowledge into a global health policy called TB Direct Observation of Treatment, Short Course (DOTS). The *third loop* (marketing and dissemination) involved distilling this policy down into a standardized, global, generic “one-size-fits all” TB DOTS policy which has five components: political commitment; case detection using sputum microscopy; standardized short course chemotherapy; regular drug supply; a standardized recording and reporting system (Walt, Lush et al. 2004). A very professional advocacy and marketing campaign branding TB DOTS as *the policy solution* to the increasing burden of TB was mounted (Ogden, Walt et al. 2003). In this loop there is a clear shift away from science and research, to advocacy and marketing. This was not without debate and dissent (Brown 1997, Ogden, Walt et al. 2003, Coker, Atun et al. 2004). In contrast with the first loop this third loop was “top down” and authoritarian. With the backing of powerful global organizations such as the World Health Organization and the World Bank, TB DOTS programs were being imposed on countries, service providers and patients, and were seen by opponents of the policy as being out of touch with the needs of TB patients and health services realities on the ground (Walt, Lush et al. 2004).

The Walt et. al. adaption of the three streams framework has been used by Klugman to study non-government organizations as agents for change in South Africa (Klugman 2000); by Ogden to analyse the adoption of TB DOTS as a global health policy driven by WHO in the 1990s (Ogden, Walt et al. 2003); and by Shiffman to undertake a detailed analysis of agenda setting of Safe Motherhood Initiatives in India (Shiffman and Ved 2007). These studies establish the relevance of this methodology in this research of how TB DOTS became the national TB Control Policy in PNG in 2006.

The Walt et. al. (Walt and Gilson 1994, Walt, Lush et al. 2004, Buse, Mays et al. 2006) Context, Process, Actors and Content Framework adapts the three streams framework to the resource poor setting. It takes into consideration the fact that much of the policy process takes place at the global level, as well as at the country level, and the manner in which international policy actors exert considerable, and often unequal, power in the policy process. This is the great contribution of the Walt et. al. adaption of the three streams framework. It is the use of this method which enables us to address *Objective 3 - To describe and critique the PNG TB DOTS policy agenda setting process from 2004 – 2006*, and answer the research question what were the determinates of the key events, who were and what role did the key actors play, in TB DOTS coming onto the health policy agenda in PNG in 2006? It also provides an overarching framework for this thesis which is to describe and critique health policy and the health policy process in a resource poor setting.

## **2.10 Framework on Determinants of Political Priority for Global Initiatives**

Before we move on we need to briefly look at another framework which has recently received attention in the peer reviewed literature. In 2007 Shiffman and Smith, drawing on Walt and Gilson (Walt and Gilson 1994, Buse, Mays et al. 2006), proposed a new *Framework on determinants of political priority for global health initiatives* (Shiffman and Smith 2007) in order to research and understand what determines “political priority” for global health initiatives in low and middle income countries.

The underlying goal of Shiffman’s framework is to understand why global health initiative policies do or do not come onto the policy agenda in low and middle income



countries. Since being proposed the framework has been used to research and understand why global health initiatives do or do not come onto the policy agenda in low and middle income countries (Shiffman and Smith 2007, Schmidt, Joosen et al. 2010, Benzian, Hobdell et al. 2011, Keeling 2012, Pelletier, Frongillo et al. 2012, Walt and Gilson 2014).

The Shiffman framework has four categories or elements (see Table 3):

1. The power of the actors involved.
2. The ideas they use to portray the issue
3. The nature of the political contexts in which they operate
4. The characteristics of the issue itself.

**Table 3– The Four Categories for the Framework on Determinants of Political Priority for Global initiatives**

	Description	Factors shaping political priority
Actor power	The strength of the individuals and organisations concerned with the issue	<ol style="list-style-type: none"> <li>1 Policy community cohesion: the degree of coalescence among the network of individuals and organisations that are centrally involved with the issue at the global level</li> <li>2 Leadership: the presence of individuals capable of uniting the policy community and acknowledged as particularly strong champions for the cause</li> <li>3 Guiding institutions: the effectiveness of organisations or coordinating mechanisms with a mandate to lead the initiative</li> <li>4 Civil society mobilisation: the extent to which grassroots organisations have mobilised to press international and national political authorities to address the issue at the global level</li> </ol>
Ideas	The ways in which those involved with the issue understand and portray it	<ol style="list-style-type: none"> <li>5 Internal frame: the degree to which the policy community agrees on the definition of, causes of, and solutions to the problem</li> <li>6 External frame: public portrayals of the issue in ways that resonate with external audiences, especially the political leaders who control resources</li> </ol>
Political contexts	The environments in which actors operate	<ol style="list-style-type: none"> <li>7 Policy windows: political moments when global conditions align favourably for an issue, presenting opportunities for advocates to influence decisionmakers</li> <li>8 Global governance structure: the degree to which norms and institutions operating in a sector provide a platform for effective collective action</li> </ol>
Issue characteristics	Features of the problem	<ol style="list-style-type: none"> <li>9 Credible indicators: clear measures that show the severity of the problem and that can be used to monitor progress</li> <li>10 Severity: the size of the burden relative to other problems, as indicated by objective measures such as mortality levels</li> <li>11 Effective interventions: the extent to which proposed means of addressing the problem are clearly explained, cost effective, backed by scientific evidence, simple to implement, and inexpensive</li> </ol>

Source: (Shiffman and Smith 2007)

However, the Shiffman framework (see Table 3, Category 3 “Political Contexts”), only undertakes analysis or research on two factors of the *political context* which influence whether a global health initiative does, or does not, make it onto the policy agenda in

a low or middle income country. These two factors are *policy windows* and *global governance structure* with regard to the global health initiative (Shiffman and Smith 2007). It *does not* include or undertake analysis of *the recipient countries own complex policy context*, which is central to this research on the 2006 PNG TB DOTS Policy. It is the complexity of the cultural institutions, the governance structures, and the resulting health service delivery challenges within PNG which we need to examine in detail, and which the *framework on determinants of political priority for global initiatives* is not yet sufficiently developed to enable. The logical conclusion, if Shiffman's framework were applied to this research on TB DOTS policy in PNG, is that the priority setting (or agenda setting) was successful as the TB DOTS Policy did come onto the PNG policy agenda. This research is asking fundamentally different questions. Finally, the starting point for the Shiffman framework is that the global health initiative policy e.g. TB DOTS, is *the* right policy for the particular policy context in all countries. It does not allow for a critical examination of the global health initiative policy taking into account an analysis of the local context into which the policy has to be implemented so as to consider if the policy is actually implementable.

We next examine the literature to provide us with methods to enable us to critically examine TB DOTS *Component 1 – Political commitment* in the 2006 TB policy process and the impact of the particular PNG construct of political commitment on the implementation of the 2006 TB policy.

## 2.11 Political Commitment - how to frame and measure

Objective 2 of this thesis is *to describe and critique the PNG policy context with regard to TB DOTS Component 1 – Political commitment, the resultant governance structures, and the impact of these on the PNG health systems capacity to formulate and implement a TB DOTS Policy?* Objective 4 is *to describe and critique the impact of the PNG construct of political commitment on the implementation of the 2006 TB DOTS policy.* These two objectives are about political commitment in the formulation and implementation of the 2006 policy. We now look to the literature to understand what political commitment means and to examine frameworks which enable us to undertake an analysis of political commitment in the 2006 policy process.

The first thing to note from the WHO literature is that the meaning and how the term “political commitment” is used in TB DOTS policy has changed and evolved, as the TB DOTS policy evolved since its announcement in 1994. In 1994 TB DOTS Component 1 was stated as *“Government commitment to sustained TB control activities”* (WHO 1999). By 2006 in the Stop TB Partnership Strategic Plan for TB Control 2006-2015 (Stop TB Partnership and World Health Organization 2006) “political commitment” had evolved to more specifically include a commitment to long term planning, along with human and financial resources. *“Political commitment, with long-term planning, adequate human resources, expanded and sustainable financing, to reach the targets set by the World Health Assembly and the Stop TB Partnership”* (Stop TB Partnership and World Health Organization 2006)

The second thing to note from the peer reviewed literature is that there is little or no research on just what political commitment means in TB DOTS policy even though

*“Political commitment with increased and sustained funding”* (WHO 2014) is the first component of the TB DOTS policy. With regard to TB DOTS there are only two studies in the peer reviewed literature which have investigated political commitment. In a study of political commitment to TB DOTS Policy in Peru political commitment was measured in terms of ensuring sufficient funding and human resources to implement a TB DOTS policy (Bonilla and Bayonab 2007). In a more recent study investigating the existing and expected dimensions of political commitment to TB control in Ghana, Amo-Adjei (Amo-Adjei 2014) found four dimensions of political commitment emerged from a series of in-depth interviews which were combined with a documentary review:

1. Provision of adequate resources (financial, human and infrastructure),
2. Political authorities’ participation in advocacy for TB,
3. Laws and policies promulgated, and
4. Social protection interventions (Amo-Adjei 2014).

Frameworks by which to investigate the level and meaning of political commitment are also not extensive in other health policy research. Te Lintole, in a study to analyse the government of India’s political commitment to reducing hunger and malnutrition, defined and analysed political commitment as having three dimensions:

- 1) policies and programs,
- 2) public expenditure, and
- 3) legal frameworks (te Lintelo 2012).

However, there has been a small but growing literature in the past decade which attempts to define and measure the key characteristics of political commitment in HIV research, and also to analyse the link between political commitment and HIV health

policy outcomes (Fox, Goldberg et al. 2011). Fox has made the observation that *“because political science research is primarily interested in explaining political phenomena rather than health outcomes, this body of research has tended to focus on explaining political commitment rather than the effects of political commitment on policy outcomes”*(Fox, Goldberg et al. 2011).

Much of the research on political commitment concerns the response to the HIV epidemic. Fox et. al.(Fox, Goldberg et al. 2011) attempted to conceptualize and measure political commitment to the HIV epidemic, and to examine links with HIV outcomes. While expressed commitment and budgetary commitment are important components of political commitment they identify institutional commitment as a crucial underlying component (Fox, Goldberg et al. 2011). Commitment means little if it is not based on establishing enduring governance structures and bureaucracies that facilitate and enable policy formulation and implementation.

Based on this work they developed a framework to assess a government’s level of political commitment to respond to the HIV outbreak, and link political commitment to HIV outcomes (Fox, Goldberg et al. 2011). They found three components of political commitment:

1) Expressed commitment

- public pronouncements in line with scientific evidence and internationally recognized standards

2) Institutional commitment

- established AIDS bureaucracies,

- adoption of laws and regulations,
- HIV surveillance and monitoring and evaluation mechanisms

### 3) Budgetary commitment

- disbursement and allocation of funds towards HIV

Fox's review identified a set of variables defined as determinants, effect modifiers and mediators of political commitment. These relate to domestic political processes including state capacity, regime type and governance, responses to earlier health epidemics, ethnic and social fragmentation, magnitude of the epidemic, response of non-state actors (e.g. civil society), and international actors (pressure and donor funding) (Fox, Goldberg et al. 2011).

Further, Fox has more recently applied this framework to analyse political commitment in food and nutrition security, establishing the validity of the framework as well as its application beyond HIV as an approach to analyse political commitment (Fox, Balarajan et al. 2014).

A further contribution to the current understanding of political commitment comes from the health systems research done by Atun. In a review article on health systems strengthening and TB control Atun (Atun, Weil et al. 2010) speaks of political commitment using the term *governance and stewardship*. Drawing on the WHO definition, he defines governance and stewardship as creating a *"Policy environment, regulatory environment, stewardship function, and structural arrangements for purchasers, providers, and market regulators. WHO judges that good governance means that strategic policy frameworks exist and are combined with effective*

*oversight, coalition building, the provision of appropriate regulations and incentives, attention to system design, and accountability.” (Atun, Weil et al. 2010)*

This is similar to the *institutional commitment* component of Fox et. al. framework. So the framework developed by Fox et al provided a good starting point for this research on political commitment in PNG in the period from 1997 to 2006. Political commitment is about the institutions and structures which governments establish in order to deliver services in order to implement policy. It involves ensuring governance structures which enable and facilitate the delivery of the policy, along with robust health information systems to enable the monitoring and evaluation of the policy. Further it examines and takes into consideration the domestic political context and processes such as the capacity to govern, the type of political structures, and the role of both non state and international actors in the policy process. This framework does not examine political commitment simply in terms of political statements, and/or financial and human resource commitment with regard to the policy.

## **2.12 Gaps in knowledge on Health Policy, Political Commitment and Agenda Setting in PNG**

The final part of the literature review was undertaken to identify previous research and studies on health policy, political commitment, the health policy process and agenda setting in PNG. From the literature there has been little or no research on health policy and the health policy process in PNG. There has been no use or application of the health policy analysis frameworks adapted to resource poor settings to research political commitment, agenda setting, policy formulation or policy implementation in PNG. One Masters of Philosophy thesis critically examines the formulation of HIV Policy in PNG (Topp 2006) using discourse analysis but only in

relation to HIV policy. This is the only previous research which brings methodological rigor to health policy analysis in PNG. There is no previously published research on health policy process with regard to agenda setting, political commitment, policy formulation and implementation of TB Control policy in PNG.

The application of the Coker and Atun framework (Coker, Balen et al. 2010) to evaluate the impact and integration of the Global Fund programs into the PNG health system (Rudge, Phuanakoonon et al. 2010) quite specifically evaluated the impact and integration of the Global Fund HIV, TB and Malaria funded projects into the PNG health system with some level of methodological rigour with methods used and validated in TB DOTS programs in other parts of the world. However, this evaluation does not attempt to undertake a policy analysis of the PNG TB DOTS policy.

There is an absence of research on the health policy process in PNG and the complex PNG policy context, particularly with regard to political commitment and agenda setting therefore this research is addressing a genuine gap in knowledge and is an original contribution to knowledge.

### **2.13 Conclusion**

In conclusion the existing literature does provide us with methodologies to adequately answer the research questions and achieve the research objectives of this research.

The literature also identifies gaps in the literature both in relation to political commitment and agenda setting generally, but especially in relation to PNG which make this research an original contribution to knowledge.



Based on what we have found in this Chapter the overarching approach to answering the research questions will be framed within the Walt and Gilson - Context, Process, Actors and Content Framework (Walt and Gilson 1994, Buse, Mays et al. 2006). With regard to political commitment in PNG the framework of Fox et. al. (Fox, Goldberg et al. 2011) will be used to undertake the analysis of political commitment to achieve the research objectives.

Compared to Shiffman's framework, the three streams approach with its neutral starting point, as adapted by Walt et. al. in the Context, Process, Actors and Content Framework will enable an in-depth description and critique of the policy context, process and actors in PNG, will frame the analysis of agenda setting for the 2006 PNG TB policy.

## 3 Methods - Doing Health Policy Research

### 3.1 Introduction

This chapter outlines the research methodology, methods undertaken and data sources used to achieve these research objectives.

### 3.2 Methods for this research

This research aims to uncover and understand the complex contextual factors that drive and influence policy, decisions and outcomes. Standard epidemiological approaches aiming to establish associations and causality are of little assistance in answering these research questions. The literature review has identified three frameworks which enable us to answer the research questions and so achieve the research objectives. These frameworks bring a high level of rigour, have an established record in the policy sciences literature, and are capable of being applied in resource poor contexts.

The *context, actors, process, content* framework (Walt and Gilson 1994, Buse, Mays et al. 2006) allows an analysis of the interactions and relationships of actors in the policy process, especially its ability to describe and critique power structures and relationships in the policy process. Critically examining and understanding the role of power in relationships in the policy process is crucial in low and middle income countries, where complex external power relationships with aid donors, technical adviser's etc. influence the policy process. This framework enables the researcher to critically examine and understand the dynamic and complex PNG TB DOTS policy

process – the actors (internal and external), including the power relationships between those actors, the complex PNG policy context (cultural institutions, governance and health system), and the capacity to formulate and implement health policy in PNG, which means this framework provides a relevant method to undertake analysis of the TB DOTS Policy in PNG.

The *political commitment analysis framework* (Fox, Balarajan et al. 2014) identifies three components to political commitment – expressed commitment, institutional commitment, and budgetary commitment. This framework allows for a detailed analysis of the *institutional commitment* component of political commitment in PNG which other frameworks do not allow. *Institutional commitment* is about the institutions and structures which governments establish to deliver services in order to implement policy. It involves ensuring governance structures which enable and facilitate the delivery of the policy, along with robust health information systems to enable the monitoring and evaluation of the policy. Further it examines and takes into consideration the domestic political context and processes such as the capacity to govern, the type of political structures, and the role of both non state and international actors in the policy process. This framework does not examine political commitment simply in terms of political statements, and/or financial and human resource commitment with regard to the policy. So the framework developed by Fox et al provided a legitimate starting point for this research on political commitment in PNG in the period from 1997 to 2006. The political commitment framework provides the method for analysis of *political commitment* in Chapters 5, 6, 7 and 10 of this thesis.

The third framework relevant to this research is the *multiple streams framework* which finds that policy making does not proceed neatly in stages, steps or phases (Kingdon 2011). The *multiple streams framework* identifies three independent policy making streams which flow through the policy system all at once, each with a life of its own (Kingdon 2011): 1) The *problem stream* refers to the process by which, out of multiple policy problems confronting society and government, one particular policy problem becomes of sufficient importance as to come to the attention of policy makers (Buse, Mays et al. 2006). 2) The *policy stream* consists of “*the ongoing analyses of problems and their solutions together with the debates surrounding their proposed solutions.*” (Buse, Mays et al. 2006). 3) The *politics stream* “*operates quite separately of the other two streams and is comprised of events such as swings of national mood, changes of government and campaigns by interest groups.*” (Buse, Mays et al. 2006). The *politics stream* takes place at the political level, when a problem becomes sufficiently important to require a policy to respond to the problem. It is only when these three streams come together in what is a *policy window* that the policy moves onto the government’s *policy agenda*.

This framework enables us to describe and critique in detail each of the components of the policy agenda setting process in the 2006 PNG TB DOTS policy. We present this analysis in Chapters 8 and 9 of this thesis. However, as we need to adapt the multiple stream framework to analyse the agenda setting process in the PNG context in the light of the significant differences in the policy context and process between the United States of America, where Kingdon undertook his research and developed the multiple streams framework, and Papua New Guinea. The major difference is how and where power in the policy process and agenda setting lies. In the USA power lies

within the United States politics stream, and much of the research applying the three streams policy analysis focuses on how power is exercised within the United States context. PNG is a very different policy context. Given that aid donors contribute a significant proportion of funds to health services provision in PNG there is a very different set of elements operating in the policy process in the PNG. Aid donors exert more power and influence in the policy process and the agenda setting process in PNG. As a result much of the policy process takes place outside of PNG at the regional and global levels. So we need to adapt the multiple streams framework to our analysis of the 2006 PNG TB DOTS policy. We do this by dedicating Chapter 8 to an analysis of these global and regional relationships which exert influence and power on *agenda setting* in the 2006 PNG TB DOTS policy. In Chapter 9 we analyse the events within PNG itself which brought TB DOTS onto the policy agenda in 2006.

A further advantage of the multiple streams framework over other policy analysis frameworks is that it starts the policy analysis from a neutral stance with regard to global health initiative policies e.g. TB DOTS. It does not presume, or use as its starting point, the stance that the global health initiative policy is *the* best or only policy for the particular context. This neutrality in the starting point allows for a more objective analysis of the *agenda setting* process making the *multiple streams framework* the appropriate framework for the analysis of agenda setting in the 2006 PNG TB DOTS Policy.

All three of these frameworks use in-depth interviews with key actors in the policy process; the observation of events, context, interactions, and relative positions of power and influence; and an extensive analysis of published and unpublished literature

to achieve triangulation of the data. This is a well-established method in undertaking health policy analysis (Gilson 2014) in order to research and articulate the policy process, the context and role and interactions of key actors in that process.

In order to understand as fully as possible the process that enabled TB DOTS to come onto the policy agenda in PNG in 2006, and the PNG construct of political commitment, this the research uses the following data sources:

- 1 In-depth interviews with key relevant personnel involved in the 2006 PNG TB DOTS policy process;
- 2 Observations made on field trips;
- 3 Review of published research on PNG, health policy analysis and TB and TB DOTS policy; and
- 4 Analysis of government reports and documents (both PNG and Australian), and bilateral agency reports.

It is the combination of the data from these sources for analysis which allows triangulation of the data.

By taking the 2006 PNG TB DOTS Policy we have a *defined policy* within a *defined time period* which frames this research. See Table 1. Key Government of PNG documents which help provide the *time frame* for, but do not define or limit, this research are:

1. *Papua New Guinea National Health Plan 2000-2010*(GovPNG 2000)
2. Aia, P., et al. (2006). *Country Status Report of National TB Program, Papua New Guinea, 1997-2005*. Port Moresby, National TB Program Unit, Disease Control Branch, National Department of Health, Papua New Guinea(Aia, Yadav et al. 2006).

3. Aia, P., et al. (2006). *PNG Country Strategic Plan to Stop TB, 2006-2010*. Port Moresby, National TB Program Unit, Disease Control Branch, National Department of Health, Papua New Guinea.(Aia, Yadav et al. 2006)
4. Papua New Guinea Country Coordinating Committee (2006). *Proposal Form - Sixth Call for Proposals - Expanding and Implementing the Stop TB Strategy in Papua New Guinea*. The Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM). Port Moresby. July 2006.(PNG CCM 2006)

These sources, along with other sources, were used to construct a detailed *historical time line* of the events surrounding the development of the 2006 PNG TB DOTS Policy.

The purpose of the timeline is to enable an understanding of the context and process of policy development as well as to identify and understand key events and factors influencing the policy process in the development of the 2006 PNG TB DOTS Policy.

This detailed timeline is provided at the end of Chapter 1 - Introduction.

### **3.3 Key Informant Interviews**

The starting point for the key informant interviews was those people listed as having participated in the meetings and workshops leading up to the development of the 2006 Country Status Report of National TB Program(Aia, Yadav et al. 2006), and the Papua New Guinea, 1997-2005 2006 Country Strategic Plan to Stop TB, 2006-2010(Aia 2012). As a result the initial key informant interviewees were people in government, bilateral and multi-lateral aid and UN agencies, and not-for-profit organizations working in health in PNG. Each interviewee was asked to identify other individuals who held relevant positions who would be willing to participate (a technique known as snowballing). During the initial interviews it became apparent that the interviews

needed to extend beyond PNG to include technical experts from outside of PNG who had played roles in the development of the 2006 PNG TB DOTS policy. As a result further interviews were conducted in Australia. See Field Visit 4 and 5, page 63. Where interviewees consented to be identified they are identified throughout this thesis in the following manner (interviewee surname, date). See Appendix 1 for a *Profile of the Interviewees*. Where the interviewee volunteered the reason for not consenting to being identified the usual reason was that their employment could have been affected by having their views expressed publically. There is a genuine concern that if further detail is provided it will actually identify those interviewees who requested they not be identified. PNG is a comparatively small country and the people involved in TB control are even smaller in number. This is acknowledged as a limitation of this research.

A total of 18 key informant interviews were conducted for this research. 16 of these interviews were conducted between April and November 2008. A field visit was undertaken to PNG in April 2008 to conduct the majority of the interviews. Six interviews were conducted in Australia. Two of these were with interviewees who had left PNG, having worked as researchers in political science and the policy process in PNG, and were now based at the Australian National University. One was with a retired academic who had initially worked as a district medical officer in PNG before taking up the position of Professor of Community Health at UPNG. The fourth was with a senior AusAID official working on the AusAID PNG Health sector aid program. The fifth was a telephone interview with the Director of the Queensland TB control program. A follow-up telephone interview was conducted in 2010 when clarification



of points from the initial interview was required. This also allowed for collection of further data on progress with the implementation of the 2006 policy.

Interviews were semi-structured and conducted in English. The interviews ranged in length from a half hour up to one hour and a half hours. All interviews were conducted face to face, except two interviews, including the 2010 follow-up interview, which was conducted via phone. The interviews were then transcribed by this researcher and coded according to the themes identified by the literature review.

### **3.4 Ethics**

This research was approved by the University of Sydney Human Research Ethics Committee (Reference No: 10740). Each interviewee was provided with the *Participant information sheet* and, if they agreed to proceed, signed the *Participant consent form*. Further clarification of the research, how data would be managed etc. was provided as requested by the interviewee before the interview proceeded. See Appendix 2 and 3.

Of the 18 interviewees 6 gave consent for their names to be identified. 3 interviewees, when signing the consent form, requested that they remain anonymous. When there was no indication of agreement to have their identity revealed when the *Participant consent form* was signed then it was assumed consent has not been given to reveal the participants identity. This was the case with 9 participants. The group who did not give consent, or who did not indicate consent on the Participant consent form, were either government employees or working for Non-Government Organisation (NGO)

where their employment was in TB DOTS implementation in PNG, and identifying them could place their work in jeopardy. Any data from these interviews is referenced so as to ensure the identity of the interviewee is not revealed.

### **3.5 Field Trip Observations**

The findings arising from the literature review and the key informant interviews are then triangulated with field trips observations made by this researcher on three field trips to PNG. I was the Community Health / Public Health member of three PNG Health Sector SWAp Independent Monitoring and Review Group (IMRG) Teams which undertook reviews of the PNG Health Sector SWAP in November 2005, November 2006 and April / May 2007. My field visit notes are incorporated into the final reports produced by the IMRG. These IMRG reports have been approved by the National Department of Health (NDOH), the Government of PNG, for general release. So the field data used in this PhD research is from IMRG reports in the public domain i.e. approved by the PNG NDOH, the Government of PNG.

These field trips took place in:

#### **Field Visit 1 – November 2005**

In November 2005 (Research Field Notes November 2005) visits were made to:

- The National Department of Health (NDOH), Port Moresby; PNG National AIDS Council; World Health Organization; UNICEF; AusAID, the Australian High Commission, Port Moresby
- Milne Bay Province: The Provincial Health Office, Alotau, Provincial Capital of Milne Bay Province; Provincial Hospital Alotau.

### **Field Visit 2 – November 2006**

In November 2006 (Research Field Notes November 2006) visits were made to:

- The National Department of Health (NDOH) in Port Moresby; PNG National AIDS Council; World Health Organization; AusAID, The Australian High Commission, Port Moresby; and Churches Medical Council, Port Moresby.
- Sandaun (West Sepik) Province: The Provincial Health Office (PHO) in Vanimo, Provincial Capital of Sandaun; Vanimo Town Health Centre; and Bewani Health Centre inland from Vanimo.

### **Field Visit 3 – April / May 2007**

May 2007 field visits (Research Field Visit Notes May 2007) were made to:

- The National Department of Health (NDOH) in Port Moresby; PNG National AIDS Council; World Health Organization; AusAID, The Australian High Commission, Port Moresby; and Department of Public Health, School of Medicine and Health Sciences, The University of Papua New Guinea.
- Madang Province: The Faculty of Health Sciences, Divine Word University, Madang; The Provincial Health Office (PHO) in Madang, Provincial Capital of Madang; visit to Bogia District Hospital / Health Centre, on the west coast of Madang Province; and
- Western Province: The Provincial Health Office (PHO) and District Health Office (DHO) in the Provincial Centre of Daru; Daru Provincial Hospital, Daru; visit to Mabudawan Health Centre on the Torres Strait coast of Western Province.

#### **Field Visit 4 – April 2008**

In April 2008 a further visit was undertaken to Port Moresby and Madang in Papua New Guinea during which interviews were conducted for this research. Additional PNG government, bilateral and multilateral agency reports identified during the interviews as being relevant to this research were also collected.

#### **Field Visit 5 – June 2008**

A further field visit was undertaken to Canberra, Australia in June 2008 where further interviews were conducted, and further reports relevant to this research were also collected.

### **3.6 Application of Research Methods to Data analysis to achieve the Research Objectives**

Data from the peer reviewed and grey literature, the key informant interviews and field visit notes were coded by this author according to the research themes identified from the literature review, and analysis was undertaken. Information provided through the interviews has been corroborated with information from the field visit notes and also the peer reviewed and grey literature to ensure triangulation has been achieved. The results of the analysis are presented in Sections 2, 3 and 4 of this thesis.

#### ***Objective 1 – To describe TB as a health problem in PNG***

In *Part 2 - Chapter 4 – Tuberculosis in Papua New Guinea*, peer reviewed literature, grey literature, key –informant interviews and field observations are used to describe and critique the burden of TB in PNG. It examines the official incidence and prevalence data for TB in PNG, the PNG health information system (HIS) with regard to TB

incidence and prevalence and the presence of multi-drug resistant TB in PNG in order to establish reliable data on which to plan and evaluate a TB DOTS Policy in PNG.

***Objective 2 - To describe and critique TB DOTS Component 1 – Political commitment, the resultant governance structures, and the impact of these the PNG Health Systems capacity to deliver a TB DOTS Policy***

*Part 3* of this thesis presents the data analysis to achieve *Objective 2 - To describe and critique TB DOTS Component 1 – Political commitment, the resultant governance structures, and the impact of these the PNG Health Systems capacity to deliver a TB DOTS Policy*. The *political commitment analysis framework* (Fox, Balarajan et al. 2014) is applied to the peer reviewed literature, grey literature, key –informant interviews and field observations in order to analyse, describe and critique the particular PNG construct of *political commitment*. All three elements of political commitment – expressed commitment, institutional commitment and budgetary commitment are analysed throughout Part 3. However particular attention is paid to *institutional commitment* in the analysis of governance structures and the consequent impact on the health systems capacity to deliver a national TB DOTS policy. This analysis is structured in the following way:

- *Chapter 5 - Cultural institutions underpinning political commitment and leadership*, undertakes an in-depth analysis and critique of the cultural institutions in PNG which determines and forms *political commitment* and leadership;
- *Chapter 6 – Political Commitment, Governance Reforms and PNG Health system Performance* deals with the impact of PNG health system governance (*institutional commitment*) on the capacity and performance, and health outcomes.

- *Chapter 7 – Political Commitment and TB DOTS in PNG* to examine in detail how the health system governance directly affected the health system's capacity to implement a TB DOTS Policy.

In summary, Part 3 undertakes a detailed analysis of the PNG TB DOTS *policy context* into which a TB DOTS Policy has to be delivered. It is only when this complex PNG Health policy context is understood that we can truly understand what is required to be addressed in formulating and implementing a TB DOTS Policy in PNG, and also see if these factors were taken into consideration during the 2006 PNG TB DOTS policy *agenda setting* process. Part 3 concentrates on the period from 1997 to 2006, in order to provide a clear picture of the PNG policy context leading up and at the time of TB DOTS moving onto the PNG policy agenda in 2006.

***Objective 3 - To describe and critique the 2006 PNG TB DOTS Policy Agenda Setting***

***Process from 2004 – 2006***

Part 4 of this thesis deals with *Objective 3 - To describe and critique the 2006 PNG TB DOTS Policy Agenda Setting Process from 2004 – 2006*. The *multiple streams framework* (Kingdon 2011) as refined and adapted to the resource poor setting by Walt et. al. (Buse, Mays et al. 2006, Walt, Shiffman et al. 2008) is used to analyse the peer reviewed literature, grey literature, key –informant interviews and field observations in order to analyse, describe and critique the role of various policy actors - domestic, international, and technical advisers, and the power relationships between PNG and international actors, and the sequence of events in this period which moved TB DOTS onto the policy agenda in PNG in 2006. Each of the three streams – problem stream, policy stream and politics stream are dealt with in detail and adapted to the

particular PNG policy context. To deal with the power imbalance which results in much of the policy process in the 2006 PNG TB DOTS policy taking place outside of PNG, this analysis adapts the multiple streams framework to deal with the PNG context by starting this analysis with those international actors and organizations and the policy process which takes place outside of PNG (Chapter 8). This then sets the context for the analysis of the agenda setting process within PNG itself from 2004-2006 (Chapter 9). This analysis is structured in the following way:

- *Chapter 8 - Agenda Setting and International Actors in the 2006 PNG TB DOTS Policy* describes and critiques the policy actors who exert significant influence and power, their relationships and interactions, and the key events at the regional and global level in the 2006 PNG TB DOTS policy *agenda setting* process.
- *Chapter 9 - Agenda Setting within PNG in the 2006 PNG TB DOTS Policy* describes and critiques the agenda setting process in the 2006 PNG TB DOTS policy, the role of, and relationships between the key policy actors and entrepreneurs in that process in PNG during this period.

***Objective 4 - To describe and critique the impact of the PNG construct of political commitment on the implementation of the 2006 TB DOTS policy.***

*Part 5* of this thesis then describes and critiques the implementation of the 2006 TB policy.

- *Chapter 10 - Political Commitment in Implementation of the 2006 TB DOTS Policy* again uses the political commitment framework of Fox et al (expressed commitment, bureaucratic commitment and financial commitment) to describe and critique the implementation of the 2006 policy.

*Part 6 - Discussion and Conclusion* (Chapter 10) then brings the results together in a detailed discussion and conclusion and an outline of the implications of this research for policy making in resource limited settings.

### **3.7 Limitations of the Research**

There are limitations to some of the data used in this research. The data from PNG government, bilateral and multilateral agency literature had undergone a peer review process only in some cases. When this peer review process was not outlined in the report or document, these data were used only when the data was verified by one of the other primary data sources i.e. key informant interviews or field notes.

The other potential limitation of this research is one noted by Walt and Gilson when they identified the need for, and encouraged further health policy research, which is - *“We emphasize the critical importance of sensitivity and caution in this approach to policy analysis, recognizing the potential influence of the analyst's own values and perspectives over the analysis and even the decisions made. (Walt and Gilson 1994)”*.

The importance of triangulation of data to address this potential limitation is addressed by ensuring triangulation with a high level of rigor is applied at all stages of the research.

### **3.8 Conclusion**

In conclusion this chapter has outlined the methods and frameworks for this research. As well it has detailed the data sources and how data collection took place to meet



ethical requirements. Finally it has outlined how data analysis has been carried out to achieve the research objectives.

## Part 2 – Burden of TB in PNG

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Part 2 of this thesis addresses *Objective 1 – To describe TB as a health problem in PNG*

i.e. what is the actual health burden of TB in PNG as policy Problem. *Chapter 4 –*

*Tuberculosis in Papua New Guinea*, examines in depth the burden of TB in PNG.

Starting with the official incidence and prevalence data for TB in PNG it finds that a weak HIS means that the actual incidence and prevalence is not known for either drug sensitive or drug resistant strains of TB. There is no reliable data on which to plan or evaluate a TB DOTS Policy in PNG.



## **4 Tuberculosis Incidence in Papua New Guinea – Impact of Governance Structures and Donor Needs**

*“One of the ground-breaking elements of the DOTS strategy has been its clear methods for routine case notification, reporting, treatment cohort analysis, supervision for validation, and related performance indicators. These approaches are urgently needed to measure progress towards the MDG and Partnership impact targets.”*

Source: (Stop TB Partnership and World Health Organization 2006)

### **4.1 Introduction**

The aim of this chapter is to evaluate the extent of TB as a health problem in PNG,

what is the actual TB incidence and what are other indicators of burden of TB in PNG?

WHO and the Stop TB Partnership emphasise the importance of TB DOTS *Component 5 - Monitoring and Evaluation System, and Impact Measurement*, placing major

emphasis on the central role reliable data have in a national TB DOTS Program in order to plan, as well as evaluate the impact or otherwise of TB control programmes.

Reliable evaluation of TB control interventions requires good quality data. This chapter critically examines TB data and health information in general in PNG in order to understand the quality of data, and to assist us with examining how and if data are used to inform policy in the subsequent chapters of this thesis. To understand why there was no reliable TB incidence or TB burden of disease data leading up to the 2006 PNG TB DOTS policy coming onto the policy agenda in 2006, it is necessary to examine in some detail the HIS in general, as well as TB data in particular – how these data are collected, reported and collated. It is necessary to understand who has responsibility for health data at the different levels of the Health System and the lines of responsibility for health data reporting and quality. This research finds that data on TB are extremely poor with insufficient reliable data to enable an accurate estimate of TB

incidence and prevalence. Nor are there sufficient reliable data to enable accurate monitoring and evaluation of TB disease outcomes or the National TB Control Program.

There are four key findings in this chapter:

1. There is a poorly functioning HIS, despite past attempts to address data collection, collation and analysis.
2. The underlying issues with the quality of TB data are beyond the control of the NDOH and date back to governance structures that came about as a result of the Organic Laws of 1977 and 1995. Health districts and provinces, at the lower level of the Health System, do not actually have responsibility to the NDOH for collecting or reporting health information.
3. Aid donor reporting requirements drive and demand different data to routine HIS data. These donor requirements have added to the complexity of TB HIS by demanding data on TB indicators which the HIS is not capable of providing. In response donors have either unsuccessfully attempted to strengthen the existing HIS, or created parallel HIS systems, adding to an already dysfunctional HIS, and confusing what is already a very imprecise calculation of the true TB incidence and burden of TB.
4. PNG has an emerging problem with drug resistant TB, both multi-drug resistant (MDR-TB) and extensively drug resistant (XDR-TB), but the current HIS and PNG National TB Control Program (NTP) do not have HIS reporting capacity or instruments to measure the extent of this significant problem.

#### **4.2 TB Incidence and Burden in Papua New Guinea**

There is significant inconsistency in the official measurements of TB incidence in PNG. A review of Western Province HC TB case records in 2012 found a TB incidence of *500 cases per 100,000 people per year*, similar to that in Mozambique and Cambodia (McBryde 2012). These data were collected as part of an independent review of the AusAID inputs into TB control in the Western Province. This review used data taken directly from HCs and did not rely on data from the NDOH HIS. The TB incidence in Western Province reported in the review is significantly higher than the official National TB incidence, and also the WHO reported TB incidence for the whole of PNG. WHO Geneva gives a TB incidence of *303 (197-430)* in its World TB Report 2011 (WHO 2011). The Western Pacific TB Report 2010 states that the TB incidence is *250 (210-300)* with wide provincial level variation (WHO 2011). The PNG NDOH reports an incidence of TB of *250*, which is actually based on 2007 data (NDOH 2011). The official WHO Reports quote the NDOH as the source of data. At the same time the NDOH quotes the WHO as the source of their data. When the two data are compared, there is inconsistency in the official reported incidence. Neither source outlines the methodology used to calculate the TB incidence and burden of TB. Whilst within a similar range, these variations in incidence, along with the absence of an explained methodology, raise the important question as to just how accurately these official TB incidence data actually reflect the true incidence of TB.

#### **4.3 TB Data and Health Information in Papua New Guinea**

The current PNG National Health Information System (NHIS) dates back to 1995, when an updated HIS form with a standardized set of indicators was developed and

introduced following consultation with provinces and districts and field testing in Chimbu Province, to address the need for reliable, standard, country-wide health indicators (NDOH 2005). The HIS form was rolled out along with a manual providing the necessary protocols and guidelines in a form that is *'simple, flexible, acceptable, affordable and provides information that is sensitive, timely, representative and useful for public health action'* (Cibulskis and Hiawalyer 2002, Hiawalyer 2005).

These standardized hard-copy NHIS forms, which are still in use, are what each Aid Post and HC is meant to complete and return to the PHO each month (Hiawalyer 2005, Kitur 2012), where the data is collated for use at the provincial level. Forms are then forwarded to the Monitoring and Review Branch (M&RB) at the NDOH in Port Moresby where the data is entered a second time (Kitur 2012). Morbidity and mortality data on hospitalized patients are collected separately by health facilities and sent directly to M&RB. These hospital data are regarded as the most accurate reflection of TB cases presenting to hospitals in PNG (GovPNG 2014). However, they do not provide data on those TB cases who do not present to hospitals which may account for a major burden of cases in PNG. These combined data sets form the basis of the health data (Hiawalyer 2005, Kitur 2012), and are meant to be used for planning, implementation, monitoring and evaluation of health status and programs (Hiawalyer 2005, Kitur 2012), as well as for reporting to international agencies and donors.

There are several constraints that impact on and limit the quality of data in the HIS. Firstly, returns of the monthly NHIS forms to the M&RB are often delayed for six months or longer (Kitur 2012, Research Field Notes November 2005). *"Trying to get*

*basic reports back from aid posts and clinics (Health Centres), is very difficult. The road would be cut off during certain times of the year, then you have to remember also PNG is partly an archipelago so also when the seas aren't right, and technology is poor. Even people who do fill it out do get frustrated when they don't get any feedback and say oh well you know we've done all these forms and now we don't get even an acknowledgement so why do we do it the next month"* (Anonymous 2 - Interview 11th April 2008), and *"People often had difficulty submitting the forms in a timely manner, the fax machine was probably not working, or they didn't have a fax machine, or the ferry that was meant to take the report to the mainland decided to skip that island that quarter, the electricity was down for 3 months, so these are the realities in PNG."*(Adepoybi - Interview 12th April 2008) Also, there is large variation among provinces in the number of paper-based forms returned to M&RB, with less than 50% of NHIS returns reaching M&RB from some provinces (Kitur 2012, Research Field Notes November 2005). Further, there are delays of up to two years in NHIS data being entered into the M&RB data base (Research Field Notes November 2005). Finally, there had not been an epidemiologist in the M&RB for ten years, limiting the quality of analysis of the NHIS data (Kitur 2012, Research Field Notes November 2005).

Questions about HIS data quality were raised in a comprehensive evaluation of the data in 2006 by Ashwell and Barclay (Ashwell and Barclay 2010), who examined HIS data collected over seven years from 1998-2004 as part of an evaluation of a national development project The study examined how reliable the HIS was in measuring community health status at the local level. Using in-depth quantitative and qualitative data from 10 Provinces (50% of the provinces), 19 districts (21% of the districts), 175 health personnel, and 77 community focus group discussions, the study found



significant problems in the quality of health data collected by the HIS at the AP and HC level with '*under-reporting, over-reporting, and errors with calculation and transcription*' along with '*discrepancies when provincial and national level records were compared with health centre records*' (Ashwell and Barclay 2010). The study also found that in some of the 10 provinces, data from APs was included in the local HC monthly HIS forms, whilst in others, AP data was not included as AP Community Health Workers (CHW) were not considered to be sufficiently competent to make accurate diagnoses to include the data from APs in the routine HIS (Ashwell and Barclay 2010). The study concluded that the quality of HIS data from the HC level is highly questionable (Ashwell and Barclay 2010). Recent reviews of the HIS find that these fundamental problems with the HIS and data quality continue up to the present (Kitur 2012).

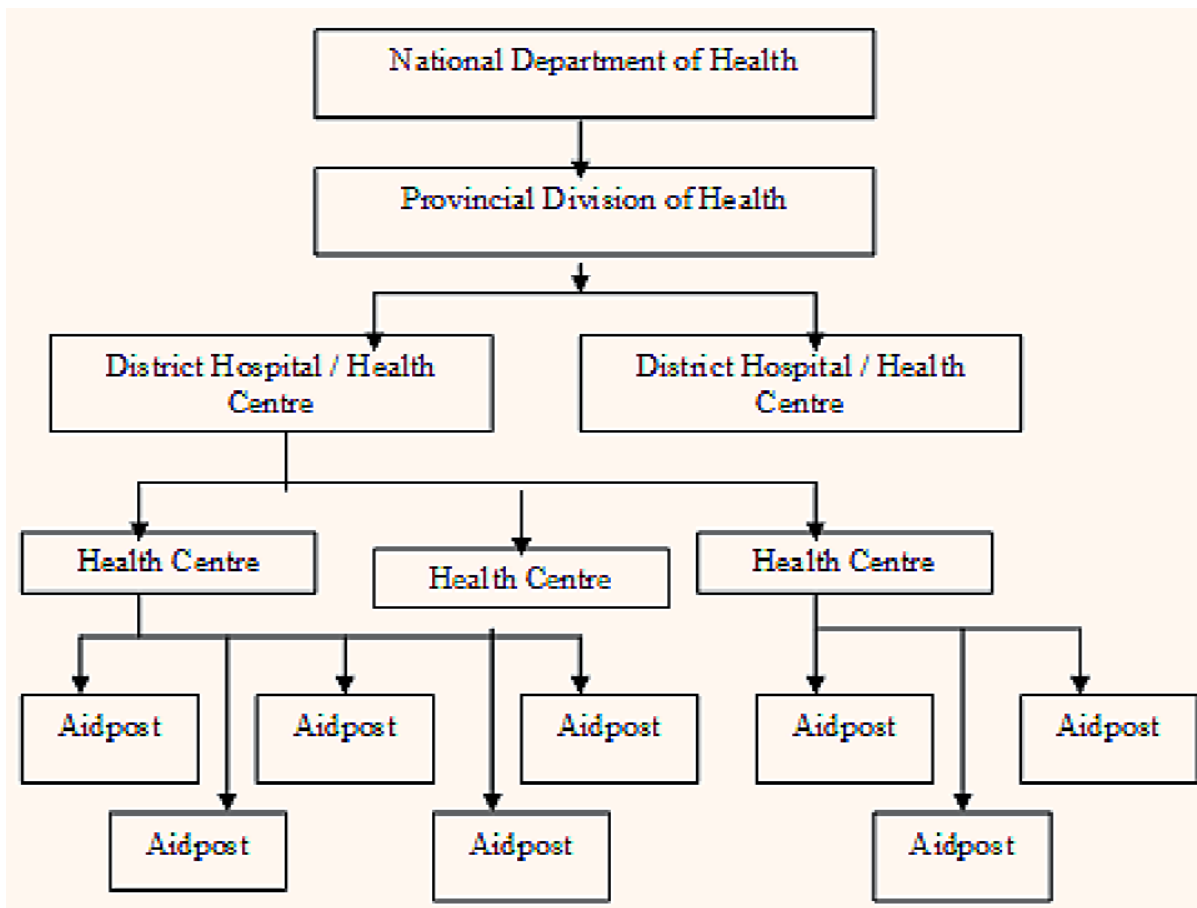
One interviewee for this research observed that "*the wrong people are trained to complete the NIH reports. Clinicians, (doctors, HEOs and nursing officers) are receiving the HIS training. But I can guarantee you in over 95% of TB sections in Health Centres it's a CHW in there. Nurses don't want to work in the TB section, they don't want to catch TB, it's highly stigmatised. The poor CHW gets stuck there, and the CHW has limited education and capacity and that's why the WHO refuses to train them. So the CHW still has no idea how to fill in the forms properly because of their limited capacity sometimes they just spend all day dispensing drugs and they don't even record anything. This was problematic as CHWs form a significant part of the PNG TB control workforce*" (Adepoibi - Interview 12th April 2008). It is these very AP and HC TB data that are used to calculate the TB incidence, contributing to questions about the quality of these calculations.

Beside these NHIS data bases there are disease-specific data bases in the NDOH, which are required to report to international TB program donors (NDOH NTP 2011). The TB control program data, from which the TB DOTS quarterly cohort reports are prepared, are collected by the TB Control Program, separate from the routine NHIS returns.

*Table 4 Variations in Global Fund and PNG National Department of Health (NDOH) TB Monitoring and Evaluation reporting indicators in Papua New Guinea*, sets out the TB indicators these forms collect for NTP. However, the TB Control Program reports also are not timely with delays of many months or years, and many forms not completed, leaving gaps in TB data (Research Field Notes November 2005).

Further, major communication problems exist between the M&RB and the TB Control Program in the NDOH with very poor or non-existent communication or information sharing due to internal conflict (Research Field Notes November 2005). As a result, the available TB data are not freely shared within the PNG Health System for TB control planning, or monitoring and evaluation. Finally, there has been no trained epidemiologist or a standard method provided by the TB Control Program in the NDOH as to how the TB incidence is actually calculated (Research Field Notes November 2005).

In summary, the reported TB incidence does not have a strong basis for reflecting the true TB incidence and does not provide a good foundation for assessing the needs on the ground or progress made, with respect to donor funding. Nor does the HIS provide a basis for the monitoring and evaluation of TB inputs or outcomes.



**Figure 2 – The Papua New Guinea Health System**

Source: (Ashwell and Barclay 2010)

#### **4.4 TB Under Reporting – Health System Factors**

The problems with routine and TB specific health information stem from the overwhelming health system issues in PNG, (Please see *Figure 2 The Papua New Guinea Health System* for the organizational structure of the PNG Health services).

With 85% of the population living in rural areas, APs have been the main providers of health services to the majority of the population since Independence and should be the main source of data for basic disease surveillance. (Frankel 1984, GovPNG 2010).

The 2,400 Aid Posts (Aps) are the first line of contact with the health system in rural PNG (Asian Development Bank 2003). Staffed by an Aid Post Orderly (APO) and CHW, AP are situated in or near most villages, and provide the majority of primary care services. Under the 1995 New Organic Law (see the following section and Chapter 5

for details of the impact of the Organic Laws in PNG), it became the responsibility of Local Level Government (LLG) (Districts) to maintain APs and pay the staff wages. However, due to a lack of funds for staff wages, medications shortages and lack of maintenance of buildings, over 50% of APs had closed in the preceding 20 years (Asian Development Bank 2003, Cammack 2008). This means that up to fifty percent of the population now do not have access to health services of any type, nor is health data collected about their state of health or health outcomes (Bolger, Mandie-Filer et al. 2005, NDOH 2009, GovPNG 2010). As a result of the AP closures, more people must travel long distances to access services at HCs, the next level of care in the health system. It is well documented that the further people have to travel to access health services, the less likely they are to attend for treatment (Müller, Smith et al. 1998, Gibson and Rozelle 2003, Toikilik, Tuges et al. 2010). Time away from home involves the economic cost of leaving gardens necessary for survival in a subsistence culture; in addition, the trip can be hazardous due to difficult terrain and/or breakdown in law and order (Bolger, Mandie-Filer et al. 2005).

#### **4.5 Impact of the Organic Laws on the PNG Health Information System**

The impact of the Governance structure reforms in PNG of the Organic Laws of 1977 and 1995, on TB Control in particular, and Health service delivery in general, will be dealt with in more detail in Part 3. However, as this research has been undertaken it has become apparent that these Laws are, in fact, a fundamental factor underpinning the poor quality of TB data and health data in general. So we briefly need to deal with the implications of the Organic Laws at this point in this thesis.

A short time after Independence in 1975, PNG was confronted with secessionist movements in several provinces with the real possibility of the country splitting up along linguistic and regional lines (Standish 1983). In an attempt to prevent this from happening, by engaging these secessionist groups in the direct decision making of government, the Organic Law of 1977 devolved responsibility for all service provision down to the Provincial level (Standish 1983). This did not placate the secessionist groups. A bloody civil war broke out and was fought in the Province of Bougainville in the 1980s and 1990s. The New Organic Law (NOL) of 1995 devolved government service provision, even further, down to the lowest level of government, the LLG, also called the District. Under the 1995 New Organic Law reforms, Districts and Provinces were responsible for the provision of all services, including health services along with TB control, as well as health information collection and reporting. The National Level of Government was then only responsible for policy setting and reporting to donors.

With regard to Health Information, the result of these governance reforms in the 1970s, 1980s and 1990s, was a variety of fragmented sets of health data in different health districts with no central coordination or analysis (Cibulskis and Hiawalyer 2002, Hiawalyer 2005). There was, and still is, no obligation on districts to collect, collate or analyse health data in a standard format. As a result, national level disease control and health information managers no longer had control over HIS. There was no statutory obligation on the Health Districts, i.e. at the HC and AP level, to report health data to a higher level. From an early stage in the history of post-independence PNG health service provision, a lack of accountability or responsibility to the levels above the district became entrenched. This fragmentation continues to impact on data collection, quality and analysis and underpins the current low level of HIS HC Reporting

Form returned to the provincial and national levels as well as incomplete forms returned.

The NDOH is aware of these problems in health data collection and quality, and has attempted to address some of the underlying issues (Cibulskis and Hiawalyer 2002, Kitur 2012). The new 1995 HIS Forms and more recent attempts to improve the rates of HIS Form returns are an example of this (Cibulskis and Hiawalyer 2002, Kitur 2012). However, these attempts to reform the HIS have no statutory authority to force provinces or districts to accept or implement them.

#### **4.6 Donors Reporting needs and parallel TB data in PNG**

Donors to the health sector in PNG have attempted to deal with these major constraints regarding HIS in one of two ways. One way has been to attempt to reform and improve the existing HIS. The second has been to create parallel HISs in order to meet the donors' own reporting needs.

An example of an attempt to reform the HIS in PNG is the Asian Development Bank (ADB) Third Rural Health Services Project in the 1980s, which had the goal to build capacity in the Provincial Management (Newbrander, Thomason et al. 1988). One component of this project was an attempt to establish a standardized set of health indicators (Campos-Outcalt 1991). Micro-computers were introduced in seven of the then nineteen provinces with the goal of standardizing and improving health data quality (Campos-Outcalt 1991). Pilot projects developed with input from short-term consultants showed initial favourable findings (Campos-Outcalt 1991). However, these

programs were not rolled out nationally and did not continue beyond the life of the project.

A further example of donors creating parallel systems to the PNG HIS is the assistance PNG received from the Global Fund to Fight AIDS, TB and Malaria (GFATM). In 2007, as part of Global Fund PNG TB DOTS Round 6 Grants, PNG was awarded \$US20mill over five years, to enable PNG to implement a national TB DOTS program (PNG CCM 2006). However a significant issue was that routine NHIS does not collect data for all the Global Fund program indicators, the latter requiring a broader range of indicators. Table 4 sets out in detail the TB indicators required by GFATM compared to the indicators of the PNG TB Control Program. The stringent Global Fund reporting indicators are set in Geneva and written into the grant agreement. If these data are not provided as required, further tranches of funds are not released. To address this, one major component of the Round 6 GFATM Grant was to improve TB data collection (PNGCCM 2006). Under this component of the grant, the GFATM Grant sub-recipient actually employed GFATM project contractor monitoring and evaluation officers down to the provincial level, in those provinces where the Global Fund programs are being rolled out (Adepybi - Interview 12th April 2008). This has resulted in a parallel set of data being collected, one using the NHIS routine data form, and one collecting the extra data required for reporting against the GFATM indicators (Table 4). As one senior official working with one of the Round 6 Global Fund TB Grant sub-recipients observed *“looking at the reporting, it was all really output driven, numbers of posters printed, numbers of meetings held, number of world TB days events done, number of vehicles purchased, just trying to spend money. There was not really any attempt to look at what we were doing in terms of real impact (on TB outcomes). Talk about*

*setting up parallel and unsustainable systems, setting up parallel structures - district, provincial, national (Adepoybi - Interview 12th April 2008).*

The requirement of two sets of data has resulted in confusion at the HC level as to what TB data are required. In mid-2012, the Global Fund announced that it would not be approving further funding for disease control programs (OIG GFATM 5 July 2012), inadequate reporting by PNG against the required Global Fund indicators being one of the reasons given. These problems with reporting occurred despite the additional GFATM Round 6 Grant support given to improved data collection.

**Table 4 - Variations in Global Fund and PNG National Department of Health TB Monitoring and Evaluation reporting Indicators**

<b>Global Fund</b>	<b>PNG NDOH</b>	
<b>T B C a s e D e t e c t i o n</b>		
	<b>Monitoring at national level</b>	
<b>Number</b> of <u>all</u> TB cases registered and reported to the national health authority in the past year (prevalence)	<b>Proportion</b> of new smear-positive and all TB cases detected among estimated total population	
<b>Number</b> of <u>new</u> smear-positive pulmonary TB cases registered and reported to the national health authority in the past year (incidence)	<b>Proportion</b> of TB cases detected who were sputum- smear positive (indicator of quality of diagnosis)	
	<b>Monitoring at health facility level</b>	
	Proportion of TB suspects tested who were 13 years and over among all adult outpatients	
	Proportion of TB suspects tested who were sputum smear positive	
<b>T r e a t m e n t O u t c o m e s</b>		
<b>Number</b> of new smear-positive pulmonary TB cases in a specified period who subsequently were successfully treated (i.e. "cured" plus "treatment completed")	<b>Proportion</b> of new sputum-smear positive cases converted at 2 or 3 months; Proportion of new smear-positive, smear positive, all other TB cases (including respective TB cases) with the following treatment outcomes: cure, treatment completed, treatment failure, died, default, transfer out, treatment success rate (proportion cured plus completed)	
Number of laboratories showing adequate performance (specify: smear microscopy, culture or drug		



susceptibility)		
Number of reporting unites who did not report stock-out of the first-line or second-line anti TB drugs used in the national TB program over a defined period		
Number of reporting units at all levels of data flow that submitted timely case-finding and treatment outcome reports to the national TB program in the previous quarter.		
<b>T B / H I V</b>		
TB/HIV indicators: Number of TB patients tested for HIV; HIV positive TB patients receiving CPT therapy; ... receiving ARV)		
<b>M D R - T B I n d i c a t o r s</b>		
Number of TB cases (new and re-treatment) who received diagnostic drug susceptibility testing for at least isoniazid and rifampicin during the period of assessment	TB patients with results for isoniazid and rifampicin	
-	Confirmed MDR-TB detected among TB patients tested for isoniazid and rifampicin drug sensitivity testing (DST)	
Number of laboratory-confirmed MDR-TB cases registered and started on a prescribed second-line anti-TB treatment regimen during the specified period of assessment	-	
-	Confirmed MDR-TB tested for susceptibility to fluoroquinolone and second line injectable	
-	Delay in diagnosis of MDR-TB suspected and date for DST	
<b>E n r o l m e n t o n M D R - T B t r e a t m e n t i n d i c a t o r s</b>		
Delay between the date of MDR-TB confirmation and date patient started a prescribed second-line drug regimen	Duration of time between confirmation of MDR-TB and start of MDR-TB treatment	
	All MDR-TB cases (suspected or confirmed) enrolled on MDR-TB treatment, aggregated by (i) all cases; (ii) cases aged <15 yrs; and (iii) females	
	Confirmed MDR-TB cases enrolled on MDR-TB treatment regimen, aggregated by (i) all cases; (ii) cases with HIV on ART; and (iii) cases with HIV but not known to be HIV	
	Confirmed XDR-TB cases enrolled on XDR-TB treatment	
	<b>I n t e r i m r e s u l t s a t 6<sup>th</sup> m o n t h</b> (early indicators of treatment success)	
	MDR-TB cases on MDR-TB treatment regimen with negative culture by 6 months	
	MDR-TB cases on MDR-TB treatment regimen who died by 6 months	
	Patients on MDR-TB treatment regimen found not to have MDR-TB	
	Patients on XDR-TB regimen found not to have XDR-TB	
	Defaulting, change of regimens to XDR TB or susceptible TB treatment are also evaluated. The period of assessment is	

	3 calendar months where all patients registered and treatment during the assessment period is included. Indicators are measured 9 months after end of quarter of assessment.	
	Final treatment outcome	
	All confirmed MDR-TB cases on MDR-TB treatment regimen will have the one of the following outcomes: Cured; completed; died; failed; defaulted; no outcome assigned. The period of assessment is 12 calendar months (annual cohort) and the indicators are measured 24 months after the end of the year of assessment. All data can be extracted from the MDR TB treatment register.	

*Source: (GFATM 2011, NDOH NTP 2011)*

Separate from the 2006 GFATM Round 6 Grant, in February 2012 AusAID announced \$Aus11mill for a four-year project on TB control in the Western Province of PNG (AusAID 2012). The main aim of this project is to stop travel by Papua New Guinean TB patients across the Torres Strait to seek treatment in Australian health facilities, an issue that has received considerable attention in Australia (Gilpin, Simpson et al. 2008, Brolan, Upham et al. 2011, Simpson, Coulter et al. 2011). Based on the Global Fund grant approach in other parts of PNG, the project is aimed at scaling up TB DOTS in Western Province, with an added component to address MDR-TB, so Papua New Guinean TB patients can access quality TB services in their own community (AusAID 2012). However, the monitoring and evaluation of the project does not rely on the PNG HIS. Due to the weak HIS in Western Province, external consultants have been recruited to undertake the monitoring and evaluation of the project, in parallel with the PNG HIS (McBryde 2012). This is a further case study in parallel systems being established by donors in order to meet their data needs.

#### 4.7 Data on Emerging Drug Resistant Tuberculosis in PNG

To add a further level of complexity to the problem of TB data, PNG now has a significant problem with the emergence of multi-drug resistant TB (MDR-TB) (Ahmadova, Heldal et al. 2012, Ballif, Harino et al. 2012, Lokuge, Salee et al. 2012, WHO 2012). There are no actual national drug-resistant TB data as there is no routinely conducted Drug Resistance Surveillance (DRS), and no national drug resistance survey has yet been conducted in PNG although these are planned (WHO 2011, Ahmadova, Heldal et al. 2012).

As one TB doctor commented *“The emergence of MDR-TB and XDR-TB is in part due to the inappropriate and unreliable diagnosis and inadequate dosing of drug-sensitive TB, with resistance developing as a consequence.”* (Ongugo - Interview 22nd November 2010) Another important factor in the emergence of MDR-TB is *“a huge default problem in PNG so treatment failures and what not would not have been picked up. Because they were all just lost to follow up. So the system is broken, so patients were not brought back and sent for MDR testing”*(Adepoibi - Interview 12th April 2008).

One long standing researcher on TB in PNG found *“in terms of the health information, I can't find any good data on multi-drug resistant TB patterns, there just doesn't seem to be any and it just isn't being done and again like how do you do TB DOTS without that sort of data?”* (Riley - Interview 10th February 2010)

Data on MDR-TB is only available from several small, local TB drug-resistance surveys in different parts of PNG. In a TB drug sensitivity study carried out on the isolates of TB patients presenting between January 2006 and January 2007 at Modilon Hospital,

Madang, the Provincial Hospital for Madang, on the north coast of PNG, 17.2% (11/64) of TB patients whose isolates were tested for drug resistance showed resistance to first-line TB drugs, and 7.8% (5/64) had confirmed MDR-TB (Phuanukoonnon, Suarkia et al. 2008). Drug-susceptibility testing (DST) done on TB patients, also at Modilon Hospital isolates from 2005 to 2007 (60 isolates), and from 2009 to 2010 (201 isolates) found that 15.7% had resistance to at least one first-line TB drug, and that 5.2% were MDR-TB (Ballif, Harino et al. 2012). Further, molecular cluster analysis of these isolates provided evidence for transmission of resistant strains (Ballif, Harino et al. 2012). A review of the 161 TB patients who, between 2000 and 2010, crossed the Torres Strait from the Western Province of PNG to access health services in northern Australia, MDR-TB was found in 24% (40/161) cases (Simpson, Coulter et al. 2011), confirming earlier similar studies (Gilpin, Simpson et al. 2008). Data on 69 samples sent by the Central Public Health Laboratory in Port Moresby to the Queensland Mycobacterium Laboratory (QMRL) showed an MDR-TB rate of 57% (Ahmadova, Heldal et al. 2012). Further, analysis of sputum isolates from TB patients from National Capital District using the GeneXpert machine at Port Moresby Hospital showed that around 25% were multi-drug resistant (McBryde 2012). In May 2012, a GeneXpert machine was also installed in Daru Hospital, Western Province, with 50% of sputum isolates tested in the first 6 months being positive for MDR-TB (McBryde 2012).

Of major concern is the appearance of Extensively Drug Resistant TB (XDR-TB), i.e. TB resistant to two second line injectable TB drugs, plus fluoroquinolone. XDR-TB has been found in six of the TB sputum isolates tested at Daru Hospital in 2012 (McBryde 2012). These limited MDR and XDR-TB cases place greater importance and urgency on accurate TB data. It is crucial that accurate and reliable data on those patients who

default from treatment, who are still sputum smear positive (SSP) after completing 6 months of DOTS treatment, who are presenting for re-treatment, and who are HIV positive are collected, as these people are at greater risk of MDR-TB.

The ability to test for MDR-TB and XDR-TB in PNG remains very limited, and HIS and TB data reporting is not reliable enough for a representative measure of MDR-TB and XDR-TB in PNG. A further point is that the PNG health system does not have the capacity in terms of expensive second line drugs or community outreach to establish and maintain a TB DOTS-Plus program required to manage MDR-TB.

#### **4.8 HIV and Malaria in PNG**

Of central consideration when addressing TB as a public health policy problem in PNG was the rapidly emerging burden of HIV in PNG. *“PNG has a generalized HIV epidemic with steadily increasing HIV prevalence. In 2005, the HIV prevalence was 2% (range: 0.8%-3.2%) among adults aged 15-49 years, the Highlands region being the most affected. Based on the prevalence rate, it was estimated that 57,000 adults were living with HIV at the end of 2005. There is currently no estimate of HIV incidence.”*

(Research Field Notes November 2006) As with TB HIV incidence was not based on reliable population wide HIV data from HIS data, but rather on sentinel surveillance in the ante-natal clinics at Port Moresby General and Lae Provincial Hospitals (Research Field Notes November 2005, Research Field Notes November 2006). HIV was the major cause of adult hospital admission and death in Port Moresby General Hospital. However, in those HIV deaths the main HIV co-infection, which was the actual cause of death, was TB. (Research Field Notes November 2006).

In December 1997 the PNG National Aids Council (NAC) was established, with direct reporting to the Prime Minister, to enable a multi-sectoral response to the HIV epidemic. This effectively removed responsibility for HIV from the National Department of Health. *“The role of NDOH has been unclear after the transfer of surveillance activities to NAC even though the surveillance is carried out through the health facilities. Other than clinical services, input by the NDOH into the national programme has been limited. This is largely because the role of the NDOH was unclear in the initial conceptualization of a multi-sectoral response. However, several evaluations and reviews have recommended that NDOH becomes more involved in HIV/AIDS control and in surveillance in particular.”*(Research Field Notes November 2005).

The other major health policy problem confronting PNG was malaria. *“Malaria is the leading cause of outpatient attendances and the second leading cause of hospital admission and death (after HIV).”* (GovPNG 2000, Asian Development Bank 2003, Research Field Notes November 2005)

It is the high burden of both HIV and malaria which made them so called *tier 1 health policy priority diseases* in the period from 2000 to 2006 (GovPNG 2000, Mann 2006).

In the health policy *problem stream* it is these two diseases which received priority and competed with TB to come onto the policy agenda, up until 2006.

#### **4.9 Conclusion**

Data on TB in PNG are extremely poor and unreliable and insufficient to enable an accurate estimate of TB incidence and prevalence. Nor are there sufficient reliable

data to enable accurate monitoring and evaluation of TB disease outcomes or the control program. A fundamental structural governance problem underpins the poor data collection, analysis and reporting. These structural problems are beyond the control of the health system itself, and have come about because of a need to keep the new country intact by placating the demands of secessionist groups in a rugged, inaccessible, and culturally and linguistically diverse country. If health information, the health system, and health outcomes for all Papua New Guineans are to improve, these fundamental structural governance problems need to be addressed, especially now that MDR-TB and XDR-TB are emerging. Attempts to do so have, thus far, not been successful.

Despite these overwhelming constraints, donors such as the Global Fund and AusAID have expended large sums on TB control in PNG and continue to do so. Donors to disease control programmes such as TB, come to PNG with a particular paradigm of how a health system functions, e.g. how health data are collected, analysed and reported, as well as how TB control must be carried out, i.e. TB DOTS. These paradigms assume the existence of a centralized HIS with adequate communication between peripheral HCs and the central health information unit, and then the capacity to undertake analysis and reporting against a range of programme indicators.

However, the current PNG HIS is not capable of achieving data outputs based on such assumptions, given the embedded structural governance constraints. This illustrates a divide between donors' own need for data and the limited capacity to provide these data. Donors' own governance structures, including those regarding data requirements, are not flexible, and not able to be adapted to the major structural limitations of HISs in low income countries such as PNG. There is an inherent

assumption that a recipient government should restructure itself in order to meet the data needs of donors, which is unrealistic and unachievable. Attempts to reform or set up parallel HISs have been unsustainable. Donors need to look at how the institutions of government work, especially with regard to information gathering. Donors are not going to fix the HIS on their own. A broader PNG-driven reform of the health sector governance structures must be the starting point.

The Organic Laws have undermined the structural institutional capacities of the state to collect accurate data. In PNG there are good models of data collection that do not work given the structure of government. Even if there were a political commitment to DOTS at all levels of government, inclusive of increased and sustained financing, this will have very limited success without prior or concomitant changes in institutional and governmental structures that allow appropriate allocation of resources and accountability of those involved.

Having now identified Governance as the underlying cause of a lack of reliable data (TB DOTS Component 5) it is essential that in Part 3, the next section, we move to closely examine the governance, leadership and political commitment, (TB DOTS Component 1), that are crucial to understanding the policy context for TB control decisions in PNG.





## Part 3 – Political Commitment and Leadership in PNG - the PNG Health Policy Context

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Part 3 of this thesis deals in detail with *Objective 2 - To describe and critique TB DOTS Component 1 – Political commitment, the resultant governance structures, and the impact of these on the PNG Health Systems capacity to deliver a TB DOTS Policy:*

- *Chapter 5 - Cultural institutions underpinning political commitment and leadership*, undertakes an in-depth critique and analysis of the cultural institutions in PNG which determine and form *political commitment and leadership* in PNG;
- *Chapter 6 – Political Commitment, Governance Reforms and PNG Health System Performance* then critically examines how the unique PNG style of political commitment and leadership influences and determines the health governance. It critically examines the impact of the resulting fragmented health system governance on capacity and performance, and health outcomes.
- *Chapter 7 - Political Commitment and TB DOTS in PNG – Standardized Treatment and Effective Drug Supply* examines in detail how health system governance has directly affected the health system’s capacity to implement a TB DOTS Policy.

In summary, Part 3 undertakes a detailed analysis of the PNG TB DOTS *policy context* into which a TB DOTS Policy has to be delivered. It is only when this complex PNG Health policy context is understood that we can truly understand what is required to be addressed in formulating and implementing a TB DOTS Policy in PNG, and also see if these factors were taken into consideration during the 2006 PNG TB DOTS policy agenda setting process. Part 3 concentrates on the period from 1997 to 2006, in order to provide a clear picture of the PNG *policy context* leading up and at the time of TB DOTS moving onto the PNG policy agenda in 2006.

## 5 Cultural Institutions underpinning Political Commitment & Leadership in PNG

*“Sustained political commitment and leadership are the foundation for any sound programme to control TB. The legal and regulatory context defines the potential as well as the structure and policies of the national TB and DR-TB control programmes. Political commitment is expressed through adequate financial support and appropriate infrastructure, including facilities and trained human resources. Coordination among the different components of public and private health programmes and organizations is essential for successful programme implementation. Sufficient training and retention of medical and public health personnel depend on long-term government planning and support.” (WHO 2006)*

### 5.1 Introduction

Political Leadership and Commitment is the first component of the WHO TB DOTS policy (WHO 2006). A clear statement of how the WHO TB DOTS Policy envisages

Political Commitment and Leadership is clearly set out in the WHO "Guidelines for the programmatic management of drug-resistant TB" (WHO 2006) and is quoted at the top of this page. Political Commitment and Leadership is not simply agreeing in principal with the contents of TB DOTS as a Policy, but involves establishing and ensuring governance structures to deliver the TB DOTS policy, and is quite specific in what these involve:

1. A *“legal and regulatory context”* that defines the potential as well as *“the structures and policies of the national TB and DR-TB control programme”*.
2. *“Adequate financial support and appropriate infrastructure, including facilities and trained human resources”* (WHO 2006).
3. Coordination among the different components of public and private programmes and organizations for successful programme implementation.
4. Sufficient training and retention of medical and public health personnel depends on long-term government planning and support.

In this chapter we deal with *TB DOTS Component 1 – Political commitment*. Policies require political commitment and leadership to be adopted and implemented (Buse, Mays et al. 2006). In the health policy literature, political commitment signals a commitment to not just an ‘in principal’ agreement to the content of a policy, but a commitment to ensuring the necessary financial and human resources are put in place to enable implementation of the policy (Walt and Gilson 1994, Buse, Mays et al. 2006). Political commitment entails establishment of appropriate governance structures both in terms of health services and systems to implement the policy, and also to measure the impact of, and be accountable for, the implementation of the policy (Buse, Mays et al. 2006). Political commitment is also linked to leadership at the political level, to ensure a policy is adopted and implemented (Buse, Dickinson et al. 2007). It is this combination of political commitment and leadership that underpins policy development and implementation (Walt, Lush et al. 2004).

As the first component of the 2006 PNG TB DOTS Policy *PNG Country Strategic Plan to Stop TB 2006-2010* (Aia, Yadav et al. 2006) it is crucial to examine and understand what *political commitment and leadership* means and how it is exercised in the PNG policy context. Were the PNG contextual realities, with regard to political commitment and leadership, taken into consideration in the formulation of the PNG TB control policy? Who made the policy decisions and who formulated the Policy? Were the existing governance structures in place taken into consideration? If not, did the political commitment and leadership exist to change the governance structures? This chapter describes and critiques the three cultural institutions that form and shape political commitment and leadership in PNG. For the purposes of this research “a cultural institution or cultural organization is an organization within a culture/sub-culture that

works for the preservation or promotion of the culture”(Wikipedia 2015). Firstly, we examine the effect of the unique and normative cultural institutions called “wantokism” and the “big man” on political commitment and leadership. Secondly, we examine the resulting concept of “clientelism”, which shapes the local electoral process in PNG, as well as impacting significantly on the National Parliamentary policy process in PNG. Thirdly, we will deal with the concept of “corruption” in the PNG policy process, which itself is a product of “wantokism”, the “big man” and “clientelism”. Given this complexity, is it reasonable to expect political commitment and leadership, as envisaged by international agencies such as WHO and GFATM, to be actually exercised in PNG, particularly with regard to the formulation and implementation of health policy?

## **5.2 The “Big Man” and “Wantok” in PNG culture – Impact on Leadership and Political Commitment**

PNG is made up of over 800 distinct and unique language groups with associated cultural differences. Until European colonisation and settlement, clans had largely lived in geographical isolation from other language or clan groups, thus becoming closely knit, self-reliant societies. The distinct cultural beliefs and practices that developed as a result of this separation further entrenched a lack of understanding and distrust of other clans, resulting in frequent fights amongst the geographically closer ones (Reilly 2008). As a consequence, language or clan groups have developed an intense loyalty to members of the group, and are commonly referred to as “wantok”, which is the PNG Pidgin English word for “language group”.

However, the term “wantok” has taken a far deeper meaning than simply referring to those who speak the same language. “Wantok” means those who are bound together, not simply by speaking the same language, but by a deep social and cultural imperative to support each other, whatever the circumstances (Okole 2002a, Okole 2005).

Wantok have the cultural permission to call on other wantok for support when food, shelter, funds, other material support or protection are needed. Wantok cannot be denied. Loyalty to wantok transcends any sense of belonging to a wider provincial or national grouping, or responsibility to the national interest (Okole 2002b, Dix and Pok 2009).

Even as wantok move from their traditional village group to seek employment, education, etc., this loyalty to wantok persists. In larger urban centres, wantok tend to settle together in order to maintain cultural ties, bringing with them a continuing strong sense of loyalty to wantok. In the urban setting this manifests itself in not only the provision of shelter, food, money and protection, but also favourable consideration in appointments to government positions over others from different clan groups, irrespective of qualifications (Kurer 2007, Dix and Pok 2009). As a result, wantokism has infiltrated every stratum of society and government in PNG (Dix and Pok 2009).

Izard and Dugue in a 2003 report for the ADB found that *“in the public service, the wantok system leads to much conflict of interest and nepotism. The obligations to the clan frequently supersede the responsibilities of a specific administrative function and the obligations to larger geographic (district/province) or national interests.”* (Asian Development Bank 2003).

Wantokism also has a major impact at the political level in PNG where the *“wantok system undermines the democratic process as many candidates run not on the basis of a political platform but rather on the promise of future wealth shared.”* (Asian Development Bank 2003). *“The wantok system provides for an egalitarian sharing of wealth and responsibilities. It provides a safety net not unlike social security but with strong community obligations. While the wantok system procures advantages for the clan, it often does so at the expense of modern social and professional obligations, which go beyond the boundaries of one’s extended family or clan. In particular, the concept of “common good” does not seem to have taken root in the culture.”*(Asian Development Bank 2003)

The other important feature of PNG cultural leadership, which has a major impact on the PNG policy process, is the concept of the *“big man”* in PNG traditional village life (Lederman 1990), some key features of whom have been assumed by the modern PNG politician (Dix and Pok 2009). Within PNG culture the *“big man”* assumed a leadership role and exerted significant influence within the clan. Lederman, in ethnographic studies on clan structures in the PNG Highlands, finds that the term *“big man”* refers to male leaders whose political influence is *“achieved by means of public oratory, informal persuasion, and the skilful conduct of both private and public wealth exchange”* and that *“leadership is a personal achievement associated with organizing events held in the names of clans and tribal alliances. Leaders neither inherit their status by virtue of seniority, lineage membership, or ritual sanction, nor are they formally elected or installed.”* (Lederman 2001).



So rather than being inherited, traditional leadership in PNG is based on several personal qualities, one of which is *“the skilful conduct of both private and public wealth exchange”* (Lederman 2001). This conduct of “wealth exchange” has become a key feature of the “clientelism” that PNG politicians must practice, and be a part of, to survive in the PNG political process. It is a desirable characteristic of leaders and leadership in today’s political process (Kurer 2007) as we shall now see.

### **5.3 The Papua New Guinea Political Process – “Clientelism” in PNG**

At independence in 1975 PNG adopted a Westminster Parliamentary system of Government (May 2004). In most stable, long-term Westminster Parliamentary democracies, in the lead-up to a general election, political parties articulate a policy platform that spells out the policies the party proposes for the upcoming Parliamentary term in order to achieve party goals and objectives, and that usually sets out a vision for a direction for the country. Following a general election, the party with the majority of members forms the “government” headed by the Prime Minister who is elected by a majority vote of the “government” members of Parliament (Lijphart 1999). In some instances a coalition of parties is required to form a government. The government proceeds to implement, through the Parliamentary process, the policy platform for which it has received a “mandate” having gained the majority of the votes by the electors. Members of Parliament who do not join the “government” form the “opposition” in the Parliament, and generally oppose the government’s policy initiatives or propose alternative policy responses (Lijphart 1999).

In PNG, the Westminster Parliamentary system of government has developed a uniquely PNG character in both the electoral process, at the local level, and the

Parliamentary policy process at the national level (Lijphart 1999, May 2004). One positive point to make about the PNG electoral process is that since independence a general election has actually been held every five years, (Lijphart 1999, Okole 2002a) despite the enormous logistical and economic cost of doing so, due to the rugged terrain, and law and order constraints (Strathern 1993) faced by electoral officials.

However, the PNG parliamentary process is marked by instability and volatility (Strathern 1993, May 2004, Standish 2007). Continuity is minimal due to the high turnover of members of Parliament at each election (Okole 2002a). There is no strong party system, with rapidly changing loyalties, allegations of corruption and regular votes of “no confidence” in Prime Ministers (May - Interview 17th June 2008, May 2004). Underpinning this instability, is “clientelism”. Clientelism is essentially an agreement between a “client”, in the PNG case the voter or block of votes (wantok or clan), and a “patron”, in the PNG case the elected Member of Parliament, to share the material benefits of office that come with being a member of Parliament in PNG (Kurer 2007).

This is achieved by “*overriding due process in the pursuit of these aims*” (Kurer 2007). Clientelism in the PNG political process links directly to the normative loyalty of “wantokism” to other wantok (Okole 2002a, Okole 2005), and “wealth exchange”, which, as already discussed, is a core characteristic of the “big man” in PNG society (Lederman 2001, Kurer 2007).

Kurer finds that the distinguishing feature of clientelism in PNG “*is the desire for particularistic gains that in the PNG context include benefits for clans, such as*

*government contracts, as well as for individuals, such as money for feasts, bride prices, tickets for people to travel, jobs in the public service, or credit for personal use or business ventures. The conflict with 'governance' that arises from providing these particularistic benefits is self-evident; by definition they have to be made available outside regular channels." (Kurer 2007)*

In PNG politics, the checks and balances of government, whereby Members of Parliament are held accountable for the use of government funds, the awarding of government contracts etc., are either ignored or bypassed (Dix and Pok 2009). It is therefore important to deal with the concept of "corruption" in PNG later in this chapter.

In the PNG electoral process, in any electorate there are a large number of candidates with no particular party affiliation, as each clan often nominates their own candidate in an attempt to have their clan represented in the Parliament. This results in a high number of Independent members of parliament. As one clan does not usually have sufficient votes to alone secure the election of their candidate, alliances are formed between clan groups within an electorate. The "successful" clan groups, the clients, expect material gain and benefits to flow from their Member of Parliament in order to maximize the advantage of having direct access to government resources, especially as there is a significant chance that their Parliamentarian will not be elected again at the next election. The reason is that the Parliamentarians usually are not able to meet the demands of all the electors and clans who have formed the alliance to elect them to Parliament. As soon as the material goods do not flow to the clans, the alliance breaks down and new alliances form for the next election. The remainder of the electorate remains largely unrepresented for the five year Parliamentary term (Reilly 2002). In

many cases the Parliamentarian will not even visit other parts of the electorate out of fear of physical harm (Strathern 1993, May 2004).

Violence, often extreme, is also a feature of the PNG political process (Strathern 1993, Reilly 1999, Rumsey 1999, Reilly 2008). The level of violence between clans increases as an election approaches, and reaches its highest level at the time of election and immediately after as votes are finalized. Violence is often associated with taking measures to ensure the clans' candidate is elected to Parliament. It is important to note that the violence is not associated with disagreement or disputes over different policy stances or debates (Strathern 1993, Reilly 2008). The value for the clan is in getting their candidate into Parliament, rather than the policies that candidates do or do not espouse. Reilly finds that the traditional violence of PNG, often associated with land disputes, bride price etc., has taken on a new character and become part of the modern political process, where the value of the material benefits of winning a seat in Parliament causes high levels of violence (Rumsey 1999, Reilly 2008). The political process has become a modern expression of a traditional way of settling disputes in PNG.

Clientelism also pervades the National Parliamentary process, which is largely taken up with "survival" in government. This necessitates maintaining or changing alliances to ensure that the outcomes inherent in clientelism can be delivered to the client electors and clans so they continue their support. With a large number of independent Members of Parliament and a large number of small parties, Parliamentary alliances are formed largely on the basis of clientelism, i.e. the alliances that enable the Parliamentarian to deliver to clan group(s) the expected material benefits of having

their “patron” in Parliament. As soon as an alliance that has been brought together to form “government” is no longer capable of delivering the required and expected material benefits, the Parliamentarian changes allegiances to another grouping of Parliamentarians, who are seen to have a greater likelihood of delivering the material benefits to their electors. The results are regular changes of groups or coalitions, both within and between “government” and “opposition”. In each PNG Parliament since independence the Prime Minister has been removed during the life of the Parliament by a “no confidence” motion as a result of the regular changes of allegiances resulting from clientelism (Kurer 2007).

Key features of the impact of clientelism on the PNG political process include wantok voting as a block to maximize the chances of electing their member of Parliament (Okole 2002a, Okole 2005, Kurer 2007); large numbers of candidates standing for election resulting in a high number of “independent” members of Parliament, as the various clans within an electorate want their representative to be elected (Okole 2002a, Kurer 2007); a high turnover of politicians at each election when Parliamentarians do not deliver sufficient of the expected material goods of office to their electors and when alliances break down for the same reason (May 2004, Okole 2005, Kurer 2007) ; a small margin of votes between successful candidates and other candidates, due to the large number of candidates in each election, meaning the legitimacy of elected Parliamentarians is not established by a clear cut majority vote (Reilly 1999, May 2004); an electoral process marred by extreme violence (Strathern 1993, Rumsey 1999, Reilly 2000, May 2004, Reilly 2008); a weak Parliamentary party system as clans do not commit to a broader party policy agenda (Reilly 1999, Reilly 2002, Okole 2005), but focus solely on their own clientelist material needs.

Despite attempts to reform the PNG electoral system to address the impact of clientelism on the PNG political process (Peabody, Edwards et al. 1995, Reilly 2002, Reilly 2006) in the 2002 election 75% of members of Parliament lost their Parliamentary seats (Kurer 2007). In the same 2002 election, an average of 27 candidates per constituency stood for Parliament and only one candidate in the whole of PNG secured more than 50% of the votes in their electorate (May 2004). The 2002 election was again marked by high levels of violence (May 2004). Reilly found that *“the 2002 elections, widely criticised as the worst ever held in Papua New Guinea, featured numerous instances of bribery, intimidation and other electoral offences, including multiple voting, hijacking of ballot boxes and, in the Southern Highlands particularly, large-scale electoral violence.”* (Reilly 2008)

It was the Parliament elected at the 2002 election, with this unique PNG construct of political commitment, which oversaw the adoption of the *PNG Country Strategic Plan to Stop TB, 2006-2010* (Aia, Yadav et al. 2006) and the successful application for the *Round 6 GFATM Grant - Expanding and Implementing the Stop TB Strategy in Papua New Guinea* (PNGCCM 2006) to fund the implementation of the PNG TB DOTS Policy. Political volatility and instability has been present in and up to the most recent 2012 PNG Parliamentary election (Reilly 1997, Okole 2002b, May 2004, Okole 2005, Reilly 2008, Natapei 2012), when 63% of members of Parliament lost their seats (Natapei 2012). At the Parliamentary elections in 2007 and 2012, large numbers of candidates have stood for individual electorates where members of Parliament are elected with only small margins of votes, throwing doubt on the legitimacy of the winner (May 2004).

It is important to note that in the political process, and more generally in PNG, there is acceptance and value placed on the need for broader development to benefit the general population and country, with emphasis on improved access to health, education and infrastructure such as roads for all Papua New Guineans. However, this sense of the “common good”, beyond the particular clan group, is not valued to the same extent as the benefits to be gained from clientelism (Kurer 2007). This is especially so when those material goods are potentially available for only one term of Parliament.

An important final point to make is that in PNG, 85% of the population live in rural areas below the poverty line, surviving by subsistence agriculture, with only minimal participation in the cash economy (Bolger, Mandie-Filer et al. 2005, Cammack 2008, Rogers, Bleakley et al. 2010). Engaging in clientelism is one of a very limited number of ways to improve one’s standard of living when there are few other options. Further, clientelism is not unique to PNG; it is a feature of the political process in many low income countries including other Pacific Island states (Huffer 2005) .

#### **5.4 Difference between “traditional” and “modern” political leaders**

In their critique of the role of the “big man” in PNG, Dix and Pok (Dix and Pok 2009) find that whilst the “big man” lived in and was a part of the traditional village setting, traditional sanctions such as loss of respect and being ostracized from the clan meant that accumulation of excessive personal wealth did not take place. Material goods acquired through “big man” status were shared through “wealth exchange” within the

village and clan. Modern day politicians live mostly in large urban centres, removed from the village, so the traditional sanctions the clan could impose at the village level can no longer be applied in the case of excessive individual wealth accumulation (Dix and Pok 2009).

### **5.5 Desired characteristics of Political Leadership in PNG resulting from Clientelism**

There are particular characteristics of “political leadership” in PNG that voters value when they are electing their members of Parliament - *“voters will tend to support candidates who are likely to be elected, to be in powerful position in government and thus be able to channel resources their way, if elected, and who, if elected, actually do so... PNG voters opt for candidates who are socially close and ..... corruption and self-enrichment is not something that disqualifies politicians in the eyes of voters; relevant for their decision is solely the amount of benefits delivered.”* (Kurer 2007)

The ability to articulate policies in health, education, or other services with the goal of achieving a “common good”, or advancement of the electorate as a whole take a back seat to the clientelist political relationship (Kurer 2007).

However, it is also important to note that in PNG there are well documented cases of exceptional politicians who have displayed a different model of leadership to that outlined so far. Christopher Sambre was re-elected for the Nuku electorate of West Sepik province from 1977 to 1992 (Okole 2002a). Okole notes *“how good leadership, character and religion...and his moral standing”* were key to his re-election over many years (Okole 2002a). Okole quotes other examples of ethical political leadership in



PNG since independence, but emphasises that these are exceptions in the PNG political process (Okole 2002a).

## 5.6 “Corruption” in PNG

Corruption in PNG was the central reason the Global Fund (OIG GFATM 2014) suspended the initial Round 6 Grant for TB DOTS in PNG (PNGCCM 2006). As a result of fraudulent use of Round 6 funds, NDOH was forced to resign as Principal Recipient (PR) and was replaced as PR by World Vision International. Given this we need to examine wantokism and clientelism and their connection with corruption in PNG and its impact on the political process as being central to the understanding of *political commitment* in PNG.

Corruption is still seen as a major issue at all levels of government and in the private sector in PNG (Anonymous 3 - Interview 2nd June 2008, Anonymous 1 - Interview 10th April 2008, Wickberg 2013), as Dix and Pok reported in 2009:

*“Corruption is rampant and largely unchecked in the Pacific island nation of Papua New Guinea (PNG). Grand corruption has many faces in PNG: nepotism, administrative corruption, and state capture. Systemic nepotism, including ghost workers on a payroll and political favour-based hiring, has cost the state millions of dollars in just one province. Administrative corruption reportedly takes place in a formalized system of commissions on real or rigged procurement contracts, out of court settlements, and other payments made by the state to private actors. State capture is evident to most observers in the forestry and petroleum extraction industries, which are dominated by select foreign interests licenced by the state.”*  
(Dix and Pok 2009) page 239

However, it is important to understand just what is meant by corruption and whose particular understanding of the term “corruption” is being applied to the situation. It is a term that in PNG must be understood within the contexts of “wantokism” and “big man”.

Drawing on research in four rural PNG districts Walton attempts to understand rural Papua New Guinean's perception of corruption and argues that the debates about corruption in PNG should be reframed (Walton 2013b). Walton finds two very different views or perceptions of what constitutes corruption (Walton 2013b). These views are very significant in the PNG context.

The first "mainstream" view frames corruption *"in reference to state laws, rules and institutions, in turn, those who reflect this view focus on the corruptibility of state officials"* (Walton 2013b). This mainstream view of corruption places emphasis on *"breaches of obligations set out in legal codes"* (Walton 2013b); *"the abuse of public office for private gain"* (Walton 2013b); and *"rent-seeking"* (Walton 2013b). This view of corruption is the view of economists and external agencies such as the GFATM, World Bank (World Bank 1997) and the former AusAID (AusAID 2004). The focus of the support from these agencies was to undertake Public Sector Reform by establishing and strengthening governance in institutions such as the Ombudsman's Commission, the Justice System and the economic structural reforms in the PNG Treasury (AusAID 2004, Dix and Pok 2009). This view of corruption comes from a western liberal democratic or neo-liberal philosophy of how economies should be structured and how development ideally takes place (Walton 2013a).

In the second or "alternative" view of corruption, drawing on the work of Huffer (Huffer 2005), Walton frames the *"understanding of corruption as depending on community norms and relationships of power"* (Walton 2013b). Corruption *"is a term of condemnation towards acts that are denounced by a particular community. The*

*types of acts that are covered by this definition are culturally determined depending 'on the context and on the position of the actors involved' (de Sardan 1999). From this perspective, corruption comes into being when immoral acts benefit individuals or communities outside the group (de Sardan 1999), or when individuals within the community transgress communal norms for individual benefit (Williams 1999)."* (Walton 2013b).

In this "alternative" view *"corruption occurs when shame, a cultural mechanism for keeping corruption in check.....is undermined (de Sardan 1999)...corruption is caused by the clash of traditional/communal and modern norms and expectations."* (Walton 2013b)

The "alternative" view of corruption is markedly different to the "mainstream" view. It is a view presented mainly in the writings of anthropologists (de Sardan 1999, Williams 1999, Huffer 2005). In this view, corruption is framed by a social or cultural perspective, rather than an economic or neo-liberal perspective (Walton 2013a). The "alternative" view of corruption is consistent with the findings with regard to the wantok system and the "big man" culture in PNG, both of which we have closely examined in this Chapter. This view of corruption would consider the excessive wealth accumulation of politicians (i.e. taking without sharing) as being corrupt. It is also consistent with the finding that excessive wealth accumulation is only possible once the "big man" moves away from the traditional village social structure to a larger urban centre, where sanctions in terms of shame or ostracization can no longer be imposed.

Walton finds that *“in weak states such as PNG, some types of corruption can offer social protection mechanisms for those excluded from state benefits. At the same time, most citizens in the survey saw corruption—particularly grand corruption—as detrimental to their communities and the state... it appears that both citizens and anti-corruption organisations have similar views about the impacts of grand corruption but differ significantly when it comes to petty corruption.”*(Walton 2013c)

With regard to grand corruption a long time researcher on PNG politics made the observation about the wantok system and corruption in PNG that *“some people say the wantok system means you can explain corruption because people have got obligations out of the kinship system that they can’t deny, so people are obliged to make contributions to marriages, to mortuary fees, to births and other things and these are obligatory and must make them. But when you’re getting ten million being stolen I don’t believe that’s got very much to do with the wantoks and rarely do any of the wantoks benefit from that level of corruption, that’s entirely different, and indeed you might find that two or three people that have got no kinship relation at all have combined to do that. These big scams I don’t really think are related to wantoks at all.”*(Nelson - Interview 17th June 2008)

Further, the solutions to address corruption come from within PNG society and the wantok system, which is seen to underlie corruption in the “mainstream”. Potential solutions to corruption in PNG are to extend those sanctions the clan or wantok are able to impose within the traditional village setting, so they are able to be imposed once the clan members move beyond the village, rather than impose punishment by structures from outside PNG (Huffer 2005, Walton 2013b).

## 5.7 Implications for Policy Formulation and Implementation

What are the implications of these findings on *political commitment and Leadership* in PNG on the parliament's and the parliamentarians' ability to engage in the Policy process? Examining the function of government with regard to policy development and implementation Reilly found that *"political instability has long been cited as a key factor undermining policy stability, continuity and planning in Papua New Guinea."*(Reilly 2002)

At the political level one interviewee observed of the PNG political process that *"one of the important roles of members of parliament in democratic systems is to hold the government of the day to account. And when you have got such a rapid turnover of MP's, many of them whom are not particularly well educated, where you don't really have a system of political parties that align behind particular sets of policies, and where you have a political system which almost since independence has been renowned for being pretty corrupt, it's not really the kind of context in which you can expect to see well thought through policies being executed in any kind of effective sort of way."*(Anonymous 3 - Interview 2nd June 2008)

This extends down to the government department level capacity to engage in the policy formulation and implementation process. One long term political researcher and observer of PNG policy process Professor Ron May found in his research *"one of the conclusions we drew from the study of policy making (in PNG), is the capacity of departments to give serious debate and analysis to potential policy alternatives is diminished, and bills often get drafted that are really not very well thought out, and get pushed through parliament by a strong governing majority, without much debate and*

*may or may not have much commitment behind them. I think there is a little undermining of the policy process going on as a result of this” (May - Interview 17th June 2008)*

Professor May found that this extended down to and had real implications for policy implementation at the local level in PNG - *“a lot of what goes on in Moresby doesn’t take adequate account of what situations are like out at district level. It sounds easy to say that public servants in Port Moresby don’t know what it’s like out there, but most Papua New Guineans are fairly well entrenched in their own village backgrounds so one thinks they do know a bit. But I think often there is a bit of reluctance to fully take on board how difficult it is at the local level. So you may have a policy formulated in Moresby that looks quite good, but the ability to follow through and make it work at a local level just isn’t there. I think often the planning of projects is made on assumptions on the ability to carry it through down to a village level that are unrealistic.” (May - Interview 17th June 2008)*

The then Prime Minister Mekere Morauta, in a 2000 speech to Parliament, summarized the PNG political and policy context as *“Parliament has not worked as well as it should. In recent years, instability within the system has brought about a paralysis in decision-making, and consequently a failure in policy-making, in the implementation of policy, and in the delivery of basic services to the people. Many observers have commented that a basic reason for this is that politicians have demonstrated a lack of commitment to the people who voted them into parliament” (Reilly 2002).*

## 5.8 Conclusion

This was the policy context with regard to *Component 1 - Political commitment* of a TB DOTS policy in the period leading up to the 2006 PNG TB DOTS policy. In reality “*sustained political commitment and leadership*” was dominated by wantokism, the “big man” and clientelism, which resulted in a unique construct of *political commitment* which was at odds to the WHO and GFATM construct of political commitment. The next component of political commitment are those *governance structures* which flow from and result from this PNG construct of political commitment. We need to now describe and critique those governance structures in order to understand how and if the resultant governance structures were dealt with in the 2006 PNG TB DOTS policy so as to understand the “*legal and regulatory context*” in PNG into which a national TB DOTS policy would be delivered, in order to understand if these were taken into consideration in the formulation of the 2006 PNG TB DOTS policy.

## 6 Political Commitment, Governance Reforms and PNG Health System Performance

*“Sustained political commitment and leadership are the foundation for any sound programme to control TB. The legal and regulatory context defines the potential as well as the structure and policies of the national TB and DR-TB control programmes. Political commitment is expressed through adequate financial support and appropriate infrastructure, including facilities and trained human resources. Coordination among the different components of public and private health programmes and organizations is essential for successful programme implementation. Sufficient training and retention of medical and public health personnel depend on long-term government planning and support.” (WHO 2006)*

### 6.1 Introduction

The aim of this chapter is to describe and critique the impact of the particular PNG construct of *political commitment on governance structures* in PNG; and the *health system governance* and *poor health outcomes* which are a consequence of the governance structures. PNG governance and health system governance are a central component of and shape the *policy context* into which a national TB DOTS policy will be delivered.

We use the Fox et. al. framework to analyse political commitment. For true political commitment Fox et al requires three components of political commitment to be demonstrated in policy – expressed commitment, institutional commitment and financial commitment. It is only when all three components are present that there is actual political commitment to a policy (Fox, Goldberg et al. 2011).

Governance is a key component of political commitment. *Institutional commitment* is demonstrated by ensuring, and if needed establishing, governance structures to



enable the delivery of a health policy(Fox, Goldberg et al. 2011). A similar understanding of governance as a central component of *political commitment* is also part of the WHO definition of political commitment which is to provide the *legal and regulatory context* for the delivery of a TB DOTS policy(WHO 2006) .

This chapter describes and critiques the PNG governance structures, how they evolved and functioned, and the impact of these on health service delivery in the period leading up to the 2006 TB DOTS policy thus providing a central part of the *policy context* for the 2006 PNG TB DOTS policy.

## **6.2 The Rationale, History & Evolution of Governance in PNG**

In order to fully understand the PNG Governance structures in the period leading up to 2006, when the PNG TB DOTS Policy came onto the policy agenda in PNG, we need to briefly examine how and why those structures developed in the preceding 30 years. At the time leading up to independence from Australia in 1975, PNG was governed by a centralized, colonial-imposed governance structure, with districts directly responsible to the Australian colonial administration in Port Moresby (Bonney 1982, Standish 1983, May 2004).

In the two years leading up to Independence, there was pressure from secessionist groups in Bougainville and the Highlands of PNG to cede from the new nation. The breakup of the new country was a real possibility (Bonney 1982, Standish 1983, May 2004).

In response to this threat the new PNG Parliament enacted the *1977 Organic Law on Provincial Government* which established 19 elected Provincial Governments in PNG (Standish 1983, Axline 1984, Axline 1988, May 2004, PNGNDOH 2011). The *1977 Organic Law* legislated the decentralization of full responsibility for provision of all government services, including health, to the Provincial level (Bonney 1982, Standish 1983, Axline 1984, Axline 1988, Campos-Outcalt and Newbrander 1989). This was not just for service delivery but also full responsibility for policy formulation and implementation. This left national departments in the government responsible for policy advice, monitoring of service delivery, as well as liaison with international donors.

It should also be noted that immediately after Independence there was a process of rapid localisation of PNG Public Service positions with Papua New Guineans, many of whom did not have the required training or experience, taking over positions in the new PNG government formerly held by colonial expatriates (May 2004). The effect of wantokism and nepotism in the appointment of these Papua New Guineans entrenched a low level of skills and capacity in the PNG Public Service (Standish 1983, Hengene Payani 2000). This resulted in a large number of people at the National and Provincial levels of government who were not qualified or competent to administer and deliver programs and services. There were wide-spread allegations of fraud, corruption and nepotism with *“critics of provincial government....having no difficulty in finding instances to cite of financial excesses and mismanagement, inefficiency, nepotism and corruption”*(May 2004). As a result service provision to rural populations in particular declined significantly (May 2004).

However, the devolution of power to the provincial level did not placate the secessionist movements and in the late 1980s and into the 1990s a bloody civil war broke out in Bougainville province (May 2003, May 2004). As a result, in a further attempt to placate these secessionist groups the *1995 New Organic Law on Provincial Government and Local Level Government* took the decentralisation reforms, with regard to service provision, to the lowest level of government, by legislating that the provision of all government services in all sectors – education, agriculture, health etc., become the responsibility of the LLG, also known as the District (May 2004).

However, there was insufficient planning and preparation for the implementation of the *1995 New Organic Law*. The roles and lines of responsibility at all levels of government – national, provincial and district (LLG), was not spelt out resulting in unclear lines of responsibility and accountability - *“the implementation of the New Organic Law was not adequately prepared and lacked guidance from the central level. From the onset of implementation in 1995, different interpretations emerged among the provinces, which could not be reconciled by the central government”* (Asian Development Bank 2003). At the same time the level of funding initially promised did not find its way down to the Provincial level - *“the funding levels to provincial, district, and local level governments initially envisioned under the New Organic Law were unrealistic and unattainable”* (Asian Development Bank 2003).

The 1995 New Organic Law decentralization reforms were also driven by major donors such as the ADB, as part of the neo-liberal Health Sector Reform policy in favour during the 1980s and 1990s (Campos-Outcalt and Newbrander 1989). The devolution of services to the lowest level of a health service was expected to achieve greater

efficiencies in cost compared with a centralized government controlled and managed health service, which was deemed inefficient (Smith 1997).

These reforms changed the governance structure in PNG completely. At Independence in 1975 government was fully centralized. In the next twenty year period 1975-1995 governance was devolved to the lowest political level, the Local Level Government at the District Level. This was enacted by Parliament through a two stage shift of authority downwards, initially in the *1977 Organic Law on Provincial Government*, and then further in the *1995 New Organic Law on Provincial Government and Local Level Government*. These politically expedient, pragmatic governance policy responses were adaptations to the specific contextual geo-political needs of the new country of PNG. The aim was to keep the country intact, by attempting to involve the country's diverse language and cultural groups directly in government. However, the administrative and technical capacity at the Provincial and Local Level Government (LLG) levels was not sufficiently developed to provide a workable structure or capacity for the administration and delivery of vital government services, such as health. Governance became more fragile and fragmented with each stage of the devolution of power.

**Table 5 - Governance Reforms in PNG & Impact on Health Service Governance**

Year	Legislation Enacted by PNG Parliament	Impact on Health Service Governance
1975	New PNG Constitution - Independence	Highly centralized Health Service – all health policy & service provision run from National Department of Health (NDOH), Port Moresby, directly to districts. Provincial government does not exist.
1977	Organic Law on Provincial Government	Provincial Governments established and all health service policy, financing & service delivery functions devolved to Provinces. NDOH role is one of policy formulation and advice.
1995	New Organic Law on Provincial Government and Local Level Government	Local Level Government (District level) becomes responsible for health service provision. NDOH still only policy formulation & advice.

### **6.3 National Department of Health (NDOH) - Performance & Capacity**

In the period leading up to 2006 the NDOH had already suffered the consequences of wantokism, nepotism and clientelism in appointments of people without the required technical or managerial skills for the positions they had taken up; and of misappropriation of funds intended for the provision of health services. The organizational culture within NDOH was similar to that which had developed in other PNG government departments. Within NDOH there were low standards of work performance and an inability or unwillingness by senior management to address significant lack of performance or misconduct. *“The weak areas (within NDOH) are of a structural and organisational nature, i.e. the structure does not support the delivery of priority programmes and the organisational culture, similar to that of many other PNG government organizations, is characterised by a lack of cohesive management, absenteeism at all levels, poor work ethic, poor morale etc. Communication processes*

*within NDOH, with provinces, and with other stakeholders, are also poor.”(Research Field Notes November 2005). This is the result of “decades of mismanagement and the recruitment of people without the right skills and the right motivation”(Anonymous 3 - Interview 2nd June 2008). As another interviewee observed “there are some good people in the PNG health system, and in general there is money available but not being spent improving child health or whatever, you have got a huge management problem at all sorts of levels in the system, staff motivation problem, supervision, discipline, you name it” (Anonymous 4 - Interview 18th June 2008)*

#### **6.3.1 NDOH Senior Executive Management (SEM) - Performance & Capacity**

At the SEM level within NDOH there was poor leadership and little strategic direction.

*“Teamwork in the SEM is poor. There is little evidence of a relationship that supports frank and open dialogue on key issues, challenge or debate. The effectiveness of SEM meetings is limited. Under its Terms of Reference it is to convene on a monthly basis. This year it has met only three to four times, primarily because the Secretary, who is the Chairperson, has conflicting commitments. This irregularity has contributed strongly to a loss of direction and momentum within SEM, with little follow-up and accountability for actions completed or not completed.” (Research Field Notes November 2005).*

Poor leadership and management at all levels, *“which translates into lack of control, accountability, teamwork, commitment and focus”* were recognized in the NDOH Strategic Plan 2006-2008 as a priority, stipulating that all senior technical people within NDOH undertake training in leadership and management (Research Field Notes November 2005). However, it was also noted that *“some NDOH program directors and*

*provincial health advisers are considered to lack the base educational and personal competencies to be able to be effectively trained. They are simply the wrong people for the job and no amount of training will make a difference” (Research Field Notes November 2005).* One interviewee observed *“there are 10 senior managers within the department, and of those there would be no more than 3 whom you could describe as being reasonably competent, the rest were not. And that was certainly true of the public health branch. This was in a branch that was responsible for dealing with a whole range of communicable diseases including TB, HIV and Malaria. The major business of the health sector, and it had no leadership.”* (Anonymous 3 - Interview 2nd June 2008). For those competent managers there was a definite disincentive to take any action to address the situation - *“they knew everything that was going on but they didn’t do anything about it because they were scared....the possibility always existed that something extremely unpleasant would happen to them and sometimes it did”* (Anonymous 3 - Interview 2nd June 2008).

The result was a lack of co-ordination and communication between the technical branches within the NDOH (Anonymous 3 - Interview 2nd June 2008, Research Field Notes November 2005). One interviewee observed *“there’s not a lot of consultation between different areas so you can sit in one office and the next office they’ll have the door closed and there will be no flow and collaboration between the areas”* (Anonymous 2 - Interview 11th April 2008).

It was at this senior executive and national health program branch level in the NDOH that high level technical advice was meant to be found to inform health policy formulation and to drive implementation, in the best interests of the government and people of PNG.

### 6.3.2 NDOH Human Resources Management – Performance & Capacity

Underlying the major human resource constraints in the PNG health system was the “cultural institutions” of wantokism, nepotism and clientelism - *“the department operated in a series of vertical silos. And there usually would be a big man or women from a particular tribal group (wantok). Throughout the health system these vertical silos developed which didn’t talk to each other.”* (Anonymous 3 - Interview 2nd June 2008). As a result within NDOH, and extending to the wider PNG Health System, there was no reward for good performance and no management of those who were not performing (Asian Development Bank 2003). The result was that *“cultural considerations (i.e. wantok) appear to compromise the capacity to provide effective feedback, or manage poor performance, and whilst disciplinary systems exist they are not often implemented.”* (Research Field Notes November 2006).

In 2003 the ADB identified that *“perhaps one of the greatest constraints to progress is the inability or unwillingness of senior management to exercise personnel management options in relation to non-performance. NDOH’s ineffectiveness in this area of management responsibility is entrenched, supported by non-responsive central government agencies, in particular Department of Personnel Management (DPM) and Department of Finance (DOF).”* (Asian Development Bank 2003). As a consequence of this one senior health official noted *“human resource capacity is quite weak within Papua New Guinea. It’s quite weak in terms of the number of staff with technical expertise and also weak in managerial expertise. Also in terms of project management, time management, managing staff, supervision is weak.”* (Anonymous 2 - Interview 11th April 2008)



Further, there was no Health Workforce Planning with no reliable Health Workforce data available in the period leading up to 2006 (Asian Development Bank 2003, World Bank 2007, Research Field Notes November 2005, Research Field Notes November 2006) at any level of government - National, Provincial and District. There was no ongoing planning or allocation of health staff based on need. It was noted during the 2006 field visit that *“poor management and morale, and difficulties attracting nursing and medical officers to rural areas have resulted in a number of problems. These include severely depleted staffing levels, particularly in rural health services; a mal-alignment in the staffing balances between Provincial Administrative and rural service delivery. In addition, there appears to be limited planning at the provincial/district level on how to make the best use of staff; aid-posts close to Provincial Hospitals remain staffed and underutilized, whilst those in the more isolated areas were not staffed.”*(Research Field Notes November 2006)

One further consequence of this lack of planning and coordination was the existence of a significant number of “ghost workers” and duplicate staff on the payroll of the PNG health system. In the absence of any reliable workforce data a World Bank review in 2007 estimated *“there are over 1,000 more nurses on the payroll than is feasible, and about 1,700 more CHWs on the payroll than our analysis would suggest.”*(World Bank 2007). These “ghost workers” and duplicate workers on the PNG Health System payroll *“have evolved over time, including staff who have abandoned their posts, deceased staff whose names remain on the payroll, and staff who change agencies but whose names are not removed from their former payroll.”* (World Bank 2007). Several attempts at conducting so called “payroll cleansing” have had very limited success (World Bank 2007, Research Field Notes November 2005,

Research Field Notes November 2006) due to the lack of accountability and coordination between the three levels of the PNG Health System, along with little political commitment to undertake such a task. One interviewee commented that *“until there can be recruitment selection on merit, and promotion on merit, and some sort of performance management system put in place in PNG the public service will remain as it is.”*(Anonymous 3 - Interview 2nd June 2008). Another interviewee commented that *“the whole support for health workers is quite limited, sometimes you find people who have been working in aid posts who have been out at the aid posts for 6, 7, 8 months, they haven’t even had a piece of communication from anyone, so they are not getting supported, they often feel very isolated and they can’t get access to new and emerging information let alone equipment, supplies and other resources.”*(Anonymous 1 - Interview 10th April 2008)

### **6.3.3 NDOH Financial Management - Performance & Capacity in NDOH**

As we have already seen, NDOH was responsible for developing national policies, as well as liaising with Development Partners (DP) who provided the greatest proportion of funds for disease control in PNG, including for TB control. There was limited capacity to manage the finances required to run health programs due to the lack of high level financial capacity and accountability. This resulted in major irregularities in financial management and the procurement of goods, and outright misuse of government funds. The 2003 ADB Health Sector review found *“that controls over procurement and expenditure within NDOH were ineffective and were not conducive to efficient operation. In particular, there was an inadequate managerial control framework, inadequate operational procedures and controls that do not ensure compliance with the Public Finance and Management Act”* (Asian Development Bank 2003) As with poor work performance, the misuse of government funds was not

addressed, due to the *“inability or unwillingness of management to take appropriate action in the event of suspected breach of statutory requirements or ethical business practice.” (Asian Development Bank 2003)*

Often the lack of capacity and ability to plan and manage funds, rather than corrupt activity, lead to financial short-falls. An example is when ADB funds for rural health projects had to be used to manage cash flow shortages within NDOH to prevent various short term crises such as *“clearing shipments of medicines off the wharf because DOF (Department of Finance) was experiencing a cash flow crisis, reopening NDOH offices following lockout due to non-payment of electric bills, avoiding NDOH phone disconnections by covering final requests for payment, making up a shortfall in the cost of travel arrangements for essential purposes, and many other instances” (Asian Development Bank 2003)*

Finally, with regard to health financing, the National Department of Health had and has no direct responsibility for ensuring funds are appropriately allocated or spent at the Provincial or District level. Under the *1995 New Organic Law on Provincial and Local Level Government* NDOH has a *“liaison and consultation”* role only in the Provincial and District health budget preparation. As a result the NDOH does not have a role in the budget preparation and approval process, or approving the release of funds, including donor funds to Provinces and Districts. The central government agency the Provincial Health Administration and District Administration deal directly with is the Ministry of Finance when it comes to securing funding releases and also accounting for expenditure. Again, there is a complete disconnect between the NDOH securing funds

from global donors, and being able to account for those funds as having been expended on the health services for which they are intended.

With regard PNG Government recurrent budget for health programs, the performance of the Department of Finance in ensuring sufficient and continuing funds for health service provision is crucial. However it was noted in 2005 that *“there is ongoing and continued complaint that funds released by the Department of Finance for recurrent budget are not released until many months into the financial year, and then in such quantities to make ongoing expenditure difficult to plan. ... these issues have had a significant impact on service delivery.”* (Research Field Notes November 2005).

The 1995 New Organic Law on Provincial and LLG devolution in effect drove the inefficiency, lack of accountability, nepotism and corruption, which had been introduced into the PNG Health Services as a consequence of the 1977 Organic Level, to the now lowest level of health service provision (Asian Development Bank 2003, Bolger, Mandie-Filer et al. 2005, Cammack 2008, Research Field Notes November 2005, Research Field Notes November 2006), making the already complex and dysfunctional health service even more so. It was this level of financial incapacity and lack of performance within NDOH that provided the context for the development and implementation of the 2005 PNG TB DOTS policy.

#### **6.4 Provincial Level - Performance & Capacity**

Under the *1977 Organic Law on Provincial Government*, the provincial hospitals had been made the responsibility of provincial governments. However, the latter did not provide sufficient funding. Over the subsequent twenty years curative services

declined markedly, reaching a crisis point by the 1990s, when Provincial Hospitals were no longer able to provide even basic curative services (Asian Development Bank 2003, Thomason and Kase 2009, Research Field Notes November 2005, Research Field Notes November 2006). To address this decline in curative services the *Public Hospitals Act 1994* shifted responsibility directly to the Minister of Health, through the Hospital Board, with funding coming directly from NDOH.

However, the provision of *all other curative health services*, as well as preventive / disease control programs provided through HCs and APs, shifted responsibility to the Provinces and Districts by the *1995 New Organic Law on Provincial and Local Government*. As a result the PHO became responsible only to the Provincial Administration “*decentralization of government and administrative responsibilities under the New Organic Law, the Provincial Health Office (PHO) comes under the Provincial Administration ..*” (Asian Development Bank 2003)

However, the 1995 New Organic Law created confusion as it did not clearly spell out the roles and responsibilities of the Provinces, and this included a lack of clear detail of the Provinces’ role in the delivery of health services - “*the implementation of the New Organic Law was not adequately prepared and lacked guidance from the central level. From the onset of implementation in 1995, different interpretations (of the Provinces’ roles & responsibilities) emerged among the provinces, which could not be reconciled by the central government*” (Asian Development Bank 2003). This resulted in health service provision not being a priority with provincial governments and administrations - “*much has been said about the effect of the decentralisation of authority to the provinces and districts. There seems to be reasonable agreement in health circles that*

*neither politicians nor public officials accept, particularly at the provincial and district levels, accountability and responsibility for delivery of primary health services and essential public health functions and that the NOL has led to fragmented responsibilities within the sector.” (Research Field Notes November 2005)*

The most apparent manifestation of this lack of commitment to health by Provincial Governments was the inadequate budget for health services. Under the 1995 *New Organic Law* the Provinces had agreed to allocate 15% of their budgets to health. However - *“many provincial authorities have not prioritized health services through budget support. Provincial governors have all agreed to allocate 15% of provincial revenue to health. None have yet done so. Peripheral health services have been damaged by disproportionate retrenchments of key health staff when savings have been required.” (Asian Development Bank 2003)*

In fact between 1997 and 2004 there was a 17% decline, in real terms, in Provincial health expenditure – The World Bank reported *“Under the decentralizing NOL (1995 New Organic Law), the provinces were to have much more control over the resources allocated to the health sector. Despite poor documentation of the provinces’ expenditures on health, total provincial health expenditures, the backbone of the rural health system still declined 17 percent in real terms over this period.” (World Bank 2007)*

This lack of funding and commitment to rural health services had a real impact on rural health infrastructure, i.e. Provincial governments failed in their responsibility to maintain health infrastructure in their provinces - *“A constant complaint repeated in all*

*provinces visited is the lack of maintenance and repair of staff houses, health facilities, and vehicles. Capital investment is a provincial and not a national responsibility.”*

*(Research Field Notes November 2005)*

Added to this lack of commitment to funding and maintenance of rural health facilities was low capacity and performance on the part of Provincial Health Advisers (PHA) who manage and provide oversight to the PHO, and are responsible to the Provincial Administration for overseeing the provision of all those health services for which the Province was responsible. As with NDOH Branch Heads, the PHA appointments were significantly affected by the cultural institutions of wantokism, nepotism and clientelism etc. As a result *“some ... provincial health advisers are considered to lack the base educational and personal competencies to be able to be effectively trained (as managers). They are simply the wrong people for the job and no amount of training will make a difference” (Research Field Notes November 2005).*

Poor performance and capacity in the senior health managers, at the Provincial level, often resulted in a lack of communication, loss of trust and poor performance as well as an inability to build and foster strategic and important linkages with other key health service providers and stakeholders. In 2003 the ADB found that in many Provinces *“the PHO would have a poor record of communication with health staff and local public health stakeholders. The resulting low levels of trust and isolation, both willed and physical, meant little cooperation could be found” (Asian Development Bank 2003).* One result was an incapacity to provide effective supervision and direction to the lower levels of the PNG health system.

Further, when Provincial Health staff do try to contact NDOH staff for support they found support from and communication with NDOH technical staff difficult. *“The provinces are generally not able to make informal contact with key people in NDOH and generally, not able to access NDOH staff for information or problem solving on an impromptu basis. Phones are rarely answered, and it is difficult to locate the appropriate person with the information required. There are complaints from Provincial staff that they are not resourced with the information required on key health issues. There is indication that policies are being developed and implemented at provincial / district level in the absence of guidance from NDOH”*(Research Field Notes November 2005).

This low level of capacity and performance at the Provincial level in the early 2000s provided the provincial level context for the development and implementation, of the 2006 PNG TB DOTS Policy (Aia, Yadav et al. 2006).

### **6.5 Local Level Government / District Level - Performance & Capacity**

A similar low level of capacity was and is found at the district and local level government (LLG) level. Under the *1995 New Organic Law on Provincial and Local Level Government*, Districts assumed responsibility for HCs, and LLGs were given responsibility for APs (Asian Development Bank 2003). In terms of Governance, each of the 19 Provinces in PNG is divided into Districts, with a total of 89 Districts. Each District is further divided onto LLG (LLG), with a total of 284 LLGs in PNG.



Capacity at the District level is crucial in health service provision. In PNG each District has a District Administration and a District Treasury. The District Administration is overseen by the Joint District Planning and Budgetary Committee, which was and is strongly influenced by the Local Member of Parliament. This resulted in *“many complaints that politicians blocked development, making decisions based on nepotism and favouritism, rather than a commitment or understanding of the health issues. Under the political system, local politicians are members of the Joint District Planning and Budgeting Committee, and whilst they are unable to themselves access health funds, they are strongly influential in what additional sources of funding may be made available for”* (Research Field Notes November 2005).

Within the District Administration, the District Health Manager is directly responsible to the District Administration for the provision of health programs at the District and LLG levels, with no accountability to the Provincial or National level for health program implementation or performance. This, combined with high levels of political involvement in District Administrations, resulted in *“an attitude of ‘non-compliance’ among district level staff, who refused to recognize procedures or the authority of the provincial health advisers.”* (Bolger, Mandie-Filer et al. 2005).

This system of governance meant that those with greater experience in health service delivery were not able to influence how services would be delivered at the District level. *“Hospital CEOs, senior clinical staff and provincial health advisers with the knowledge and experience to run the health system (and to whom district staff report on technical matters) cannot discipline staff in rural areas, nor direct them with regard to financial and material resources.”* (Bolger, Mandie-Filer et al. 2005)

The same issues with regard to low levels of performance and capacity, which we have already seen at the National and Provincial levels, extended down to the District level with wantokism, nepotism and clientelism strongly influencing the appointment of District Health Managers. Also, being the lowest level of the PNG health system, there were even fewer people with the necessary education and personal attributes to take responsibility for the planning, organization and delivery of health services. *“There are not enough qualified staff in PNG to manage these (health) functions in 89 districts” (Bolger, Mandie-Filer et al. 2005).* The result was that - *“While planning has been devolved to the district level, planning capacity at that level is limited. As a result, district level plans and budgets tend to be unrealistic and initiatives are not prioritised or linked well to government policies.” (Bolger, Mandie-Filer et al. 2005).*

Significant additional difficulties are created by distance and the major physical barriers of the PNG terrain in accessing funds. *“Even when funds are committed by the provinces, they often do not reach district health facilities since the latter may not have access to banks or other means of cashing cheques. These financing and cash flow problems have contributed to diminished service delivery (especially in rural areas) with real consequences for overall sector performance.” (Bolger, Mandie-Filer et al. 2005)*

During the 2005 field visit it was found that *“the general organisational capacity issues at the district level .... include poor supervision, poor transport, inadequate resourcing for rural health services, an inability to distribute allocated funds to district health facilities, poor budgeting, poor planning, erratic cash flow, and fragmentation of reporting, direction and control leading to blurred lines of accountability. Capacity*

*building at the district level is identified as a priority.” (Research Field Notes November 2005)*

Performance and capacity was so limited that District Health Offices were seen as a bottle neck in the PNG Health System. *“In a vast majority of the provinces District Health Offices are so grossly ill-equipped, that attempting to push services through these offices is creating bottlenecks in the system. In Sandaun (East Sepik) one district health office is comprised of one district coordinator and a clerk and this is not an isolated case. This situation is not likely to improve in the foreseeable future...due to severe financial and human resource constraints. The reform (1995 New Organic Law) requires a full complement of staff, similar to the provincial health office. Under the current PNG situation this will continue to be wishful thinking.” (Research Field Notes November 2006)* As one long standing researcher and observer of the PNG health system stated *“I think a district level or a provincial level where there has been a general breakdown of service and high levels of corruption and corruption ranges from a district officer taking a health department vehicle for his own use right through to taking swags of money, then it is very difficult for a health service to be any better than the general administration of the country because that’s the context in which they swim.” (Riley - Interview 10th February 2010)*

It was this low level of capacity and performance at the District level which was present in the early 2000s and provided the District level context for the implementation of the 2006 PNG TB DOTS policy. The TB DOTS program - the diagnosis, treatment with DOT, establishing whether a patient has completed treatment and is cured, or otherwise, actually take place at the primary care level,

especially in PNG, where 85% of the population live in rural areas with difficult access to services.

Thus far in this Chapter we have examined closely the impact of the 1997 Organic Law on Provincial Government, and 1995 New Organic Law on Provincial Level and LLG, on the performance and capacity of the National, Provincial and District levels of the PNG Health System. We have found that both Performance and Capacity at all three levels declined markedly with each of these Organic Laws. The final question to ask in this chapter is what was the impact of this loss of capacity and performance in the PNG Health System on Health Outcomes in PNG?

## 6.6 PNG Health System Performance against National Health Core Indicators

The National Health Plan 2000-2010 provided the National Health Core Indicators by which the PNG Health System Performance could be measured over the 10 years of the Plan (See Table 6).

**Table 6 – PNG National Health Core Indicators**

To monitor the overall performance of the National Health Plan, 19 Core Indicators have been identified. These form the basis of the Performance Monitoring Framework, which is a subsystem of the overall monitoring system and is integrated into the planning and management process at all levels.

Program	Core Indicators
1. General Administration	1. Proportion of total provincial expenditure on health 2. Proportion of provinces using the Standard 10 Health Program Budget
2. Urban Health	3. Total hospital expenditure as a proportion of total health expenditure 4. Proportion of public hospitals that meet key hospital standards
3. Rural Health	5. Proportion of total aid posts that are functional
4. Family Health	6. Proportion of deliveries in health facilities 7. Proportion of pregnant women receiving Tetanus Toxoid booster 8. Proportion of pregnant women who have attended the first antenatal care visit 9. Proportion of children under 1 year of age receiving third dose of Triple Antigen 10. Proportion of children under 1 year of age receiving measles vaccination 11. Proportion of children under 5 years with moderate malnutrition
5. Disease Control	12. Malaria case fatality rate for children under 5 years admitted to hospitals or health centers. 13. Pneumonia case fatality rate for children under 5 years admitted to hospital and health centers 14. Proportion of tuberculosis patients completing treatment.
6. Environmental Health	15. Proportion of health facilities with internal water supply
7. Health Promotion	16. Proportion of provincial implementation plans that include a health promotion component
8. Medical Supplies	17. Proportion of health centers recording shortages of essential drugs in more than two consecutive months
9. Human Resource Dev't	18. Proportion of health centers receiving at least one supervisory visit per year 19. Proportion of health facility staff receiving at least one competency based in-service training session each year

Source: Ministry of Health National Health Plan 2001–2010

Source: (Asian Development Bank 2003)

By the early 2000s several reviews found PNG was in rapid decline with poor implementation as measured by the National Health Core Indicators (Asian Development Bank 2003, Bolger, Mandie-Filer et al. 2005, Cammack 2008). In its 2003 review the ADB found that PNG was not meeting any of the National Health Core

Indicators. It found that *“While inputs (measured by financial resources) to the health sector have increased significantly between 1995 and 2001, output indicators have shown only a marginal increase over the seven years and suffered a significant fall between 1999 and 2000 and further in 2001. The performance for 2001 was, for most indicators, worse than in 1995.” (Asian Development Bank 2003)*

By 2005-2006 there had been no improvement in the National Health Core Indicators as *“only 69% of aid-posts were open in 2006 (against 72% in 2005). There has been a plateau in the percentage of facility births (36%) and a plateau in the percentage of children under 5 who are moderately malnourished (weight for age) at 30%. The pneumonia case fatality rate for children under 5 admitted to hospitals and HCs has worsened to 3.16% from 3.01% in 2005, suggesting possible concerns about quality of care.” (Research Field Notes November 2006)*

These data draw from the PNG NHIS which we know to have major limitations.

However, the following studies on immunization coverage and maternal mortality, which do not rely on NHIS data, and which used internationally established and rigorous methodologies, confirm this rapid decline in PNG Health Outcomes in the 10 year period leading up to 2006.

## **6.7 Immunization coverage in PNG**

Immunization coverage is often used as a proxy indicator of health services coverage in developing countries, especially of maternal and child health services. In 2005 an immunization coverage survey was conducted by NDOH with support from WHO,

UNICEF and AusAID (Toikilik, Tuges et al. 2010) using the internationally accepted and validated Expanded Programme on Immunization coverage survey method of randomly selecting 30 clusters of several children. The survey found that only 66% of PNG children had received their third dose of their diphtheria, tetanus and pertussis vaccination (DTP3) before their first birthday (due by 9 months of age), with coverage as low as 13% in clusters classified as “hard to reach” (i.e. clusters in rural areas and situated more than 5 kilometres from a HC). Measles vaccine coverage reached only 55% of children nine months or older. The study concluded that the *“less-than-ideal coverage stemmed from a mixed picture of health service issues and lack of health care access and utilisation.... For almost 80% of women, three main categories of reasons were offered: parental lack of knowledge or misconceptions; issues with health services; and problems with transportation.”* (Toikilik, Tuges et al. 2010)

The team that carried out the 2005 immunization cluster survey outlined above also undertook a parallel study with the goal of identifying the “root causes for obstacles to higher coverage and local solutions” (Clements, Morgan et al. 2006) page 9. For this study 30 rural PNG Health Centres were selected using a purposive sampling method (Clements, Morgan et al. 2006). The study found major health worker and also parent and child carer personal and attitudinal barriers to accessing immunization services in PNG. The major health system barriers to immunization were - low morale among health staff; poor housing; poor staff attitude and behaviour towards clients; poor staff attendance record; unreliable performance and service delivery; diversion of resources for personal gain; a lack of accountability for clients' wellbeing;, and a lack of passion for the health and wellbeing of the children of PNG; reluctance to pass on training to others; a lack of trust from the community towards the immunization services;

inadequate community participation; culturally determined behaviour patterns that lead to community violence and a sense of personal insecurity; and the wantok system of favouritism (Clements, Morgan et al. 2006).

These findings point to major PNG Health System challenges beyond the immunization program. The findings confirm that by 2005 the performance and capacity of the PNG Health System was poor. They indicate a Health System which had poor coverage and reach, especially to rural and remote areas, where the majority of the PNG population lived and carried the highest burden of disease from TB.

## **6.8 Maternal Mortality & Child Mortality in PNG**

In 2006 a Demographic and Health Survey (DHS) was conducted in PNG with the goal of providing accurate measures of infant, child and maternal mortality, as well as a range of other health indicators (GovPNG 2009). The DHS methodology was developed in order to establish valid and comparable morbidity and mortality data in countries where HISs are weak, and has been validated in multiple resource poor settings (GovPNG 2009). The 2006 PNG DHS surveyed 667 clusters, randomly selected in each of the 4 regions of PNG, with Household, Female Individual, and Male Individual Questionnaires applied in each cluster (GovPNG 2009). The 2006 PNG DHS survey data was not reliant on the routine PNG HIS.

The DHS found a Maternal Mortality Rate (MMR) for PNG of 733 maternal deaths per 100,000 live births (MMR of 711 for urban women, 741 for rural women) (GovPNG 2009). It found that 52% of births took place in a health facility and 46% were still



delivered at home (GovPNG 2009). This was the second highest MMR in the Asia Pacific region and high compared to the rest of the world (NDOH 2009). The 1996 PNG DHS using the same standard DHS methodology had found an MMR of 730 maternal deaths per 100,000 live births. There was a delay in the release of the PNG DHS to check and re-check the methodology given this very high MMR. When the 2006 PNG DHS was finally released in 2009, the high and worsening level of the MMR caused a national outcry, which prompted the PNG Prime Minister, Sir Michael Somare, to establish a Ministerial Taskforce to examine the reasons for this very high MMR, and make recommendations (NDOH 2009).

The Ministerial Taskforce's key finding was that 88-98% of maternal deaths in PNG were preventable. (GovPNG 2009). With regard to rural health services, where most of these mothers were dying, it found that *"in PNG Rural health has improved very little in the last 30 years and is at the core of the problem of low maternal health status - as demonstrated by: proportion of delivery rooms with running water and sinks decreased; perennial drug supply problems; reduced doctor supervisory visits; aid posts closed (in 2000 only 63% of the original aid posts are still open); number of health staff in rural facilities declined by 25% between 1987 and 2000, especially Community Health Workers; antenatal coverage much lower (and especially for the lowest asset quintile); contraceptive use low (especially in the lowest 2 quintiles of income; declining health infrastructure; rates of supervised deliveries remain low and have not greatly altered in the last decade."* (NDOH 2009)

The Ministerial Task Force was clear in stating a central cause of the very high Maternal Mortality Ratio being *"the decentralization of government roles and*

*responsibilities and financing, under the Organic Law, has seriously compromised the quality and functionality of health services, including maternal health.... The NDOH as the national steward and policy maker in the health sector has not had the capacity to meet its new role under decentralization.” (NDOH 2009)*

A recurring reason for women choosing not to access PNG Health Services to give birth was that *“PNG people’s confidence in the existing health system is poor.... Women do not trust the health system to look after them respectfully and safely. Maternity care can be disrespectful and contingent upon payment of fees. Offensive and demeaning language by health personnel, and ridiculing of women’s poverty, clothing, parity, smell, hygiene, cries of pain, or desire to remain clothed is not only disrespectful, but abusive.” (NDOH 2009)*

The 2006 PNG DHS also found that the Under-Five Child Mortality (U5MR) was 74.7 child deaths per 1,000 live births (GovPNG 2009). Again this was one of the highest U5MR in the Asia Pacific Region.

In a 1999 review of child health services in PNG, Duke (1999) concluded *“Most childhood deaths occur in villages, and most children never receive medical assistance.”(Duke 1999)* The review further linked the continuing high child deaths in PNG to a Health System that had declined significantly in the years since Independence, and the decline in health services to the fragmentation caused by the Governance changes brought about by the 1977 Organic Law and 1995 New Organic law (Duke 1999).

These survey results and reviews demonstrate a decline in health outcome indicators due to low capacity and performance in the PNG Health system. But also, by the early 2000s, the emergence of a lack of trust in, and a lack of engagement with the Health System by the people of PNG. People preferred to die at home rather than to access the PNG Health System.

The capacity of the state in PNG to provide services had seriously declined in the 10 years following the 1995 Organic Law on Provincial and LLG to the point where many Papua New Guineans living in rural areas did not come in contact with government services. A 2005 European Centre for Development Policy Management (ECDPM) review of the PNG health sector capacity, commissioned by AusAID, using interviews and focus groups went so far as to say that *“for people living in remote areas the state is neither seen nor felt. It is easier to seek divine intervention for healing than to seek medical help because people's capacity to access state help is eroded by its lack of presence”*. (Bolger, Mandie-Filer et al. 2005)

## **6.9 Conclusion**

In this Chapter we have critically examined the evolution of Governance in PNG as a core component of *political commitment* in the period up to the 2006 PNG TB DOTS policy. We have examined the historical evolution of governance structures in PNG. We described and critiqued the impact of the governance reforms on PNG Health System governance, health system capacity and performance, and health outcomes. We have found that the reforms have resulted in fragmentation of the whole PNG

Health System with a disconnection between the three levels of the Health System, and minimal or no responsibility or accountability.

The 2003 ADB review of the PNG Health sector concluded that there was a *“slow and steady collapse of the health system in rural areas.”*(Asian Development Bank 2003)

During the 2005 field visit for this research found *“the collapse of the PNG health system. As individual administrative and political entities retreated from their responsibilities to the collective government, they became both less transparent and less accountable. This resulted in rapidly weakening inter-governmental processes. Lines of authority between the three tiers of government are largely absent. Increasingly dysfunctional central government agencies are threatening the integrity of government services. The public health sector is failing to deliver services to the rural populations. Throughout, one constant has undermined the performance of all government agencies: the avoidance of accountability. The result is that under decentralization neither politicians nor public officials accept, particularly at the provincial and district levels, accountability and responsibility for delivery of primary health services and essential public health functions. The impaired government processes now facilitate avoidance of accountability and, in the process, also impair their own integrity – the impairment is both a consequence and a cause of the decline.”*  
(Research Field Notes November 2005)

The decentralization policy was implemented for politically expedient reasons, not for the benefit of health care; however it had a major detrimental impact on health services provision in PNG. The reforms were implemented without any consideration

for addressing the continuing high burden of disease in the PNG population. It resulted in a marked decline in health services, rather than improvement, especially in rural areas.

The major constraint to health service provision in PNG was, and is, not financial. Financial resources to the PNG Health sector in fact increased in the 10 years leading up to 2006 (Asian Development Bank 2003, World Bank 2007). However, the health outcome indicators did not match this increase in funding; in fact health outcome indicators, and health service provision indicators, worsened during this same period.

The resulting health governance structures we have examined in this chapter were the governance structures in place when the PNG DOTS *Country Strategic Plan to Stop TB, 2006-2010* Policy (Aia, Yadav et al. 2006) was formulated and were the structures under which the resulting Round 6 Global Fund Grant *Proposal Form - Sixth Call for Proposals - Expanding and Implementing the Stop TB Strategy in Papua New Guinea* (PNGCCM 2006) was to be implemented from 2006-2012.

Given this PNG Health System contextual background it is now appropriate to specifically address and examine the capacity of the PNG Health System to implement a TB DOTS program. We will specifically examine its capacity with regard to *Component 3 – Standardized treatment with supervision and patient support*, and *Component 4 - Effective drug supply and management systems*.

Central to the TB DOTS policy in PNG is the question, that if the lack of capacity of the PNG state to implement policy was known in the early 2000s, how did the PNG DOTS

Policy address this lack of capacity? If it was not possible to address the significant capacity issues brought about by the governance structures, why was TB DOTS adopted as a policy, and funded to the tune of millions of dollars. If it was known by the early 2000s that the capacity of the PNG State and Health Service particularly was such that a comprehensive TB DOTS Program could not be delivered, why did donors support and fund such a program?



## 7 Political Commitment and TB DOTS in PNG – Standardized Treatment & Effective Drug Supply

*“Sustained political commitment and leadership are the foundation for any sound programme to control TB. The legal and regulatory context defines the potential as well as **the structure and policies of the national TB and DR-TB control programmes**. Political commitment is expressed through adequate financial support and **appropriate infrastructure, including facilities and trained human resources**. Coordination among the different components of public and private health programmes and organizations is essential for successful programme implementation. Sufficient training and retention of medical and public health personnel depend on long-term government planning and support.” (WHO 2006).*

### 7.1 Introduction

The aim of this chapter is to describe and critique the capacity of the PNG health system to deliver a TB DOTS program. We describe and critique the impact of governance reforms, a direct result of the particular PNG construct of “political commitment”, on the capacity of the PNG Health System to deliver two key components of TB DOTS, in the PNG context:

*“**Component 3 -Standardized short-course chemotherapy for all cases of TB under proper case management conditions, including DOT.** Proper case management conditions imply technically sound and socially supportive treatment services” (WHO 2003).*

and

*“**Component 4 - Uninterrupted supply of quality-assured drugs with reliable drug procurement and distribution systems” (WHO 2003).***

as set out in the 2003 "Treatment of TB - Guidelines for national programmes" (WHO 2003), the WHO Guidelines in place when the 2005 PNG TB DOTS Policy (Aia, Yadav et al. 2006) was developed.



We describe and critique the contextual reality of the PNG Health System and the capacity of the PNG Health System to deliver components 3 and 4 of a TB DOTS Program leading up to 2006. We ask, was it possible when developing the TB DOTS policy in PNG to guarantee “*technically sound and socially supportive treatment services*”(WHO 2003) (DOTS Component 3), and “*reliable drug procurement and distribution systems*” (WHO 2003) (DOTS Component 4). What were the existing contextual realities with regard to the PNG Health System? What was the capacity of the PNG Health system to deliver on these two essential components of a TB DOTS program? To do this we take each of these two components and, in turn, look critically at the PNG Health System’s capacity to deliver each of them.

**7.2 - Component 3 -Standardized short-course chemotherapy for all cases of TB under proper case management conditions, including direct observation of treatment. Proper case management conditions imply technically sound and socially supportive treatment services (WHO 2003).**

The goal of an ‘effective’ TB DOTS Program is to detect 75% of TB cases within a population and to achieve a cure rate of 85% of all sputum positive cases, and in so doing bring about a reduction of incidence of TB within populations, with the eventual goal of stopping transmission within populations (Kochi 1991). In order to achieve this goal a health system has to ensure a “*technically sound and socially supportive treatment services*”(WHO 2003). In other words, adequate health services need to be provided to a sufficient proportion of the population in order to detect 75% of TB cases, and then the health system needs to have the “technical” capacity to deliver treatment, i.e. direct observation of treatment (DOT) for six months, as per policy. The “socially supportive treatment” envisaged in the policy means that communities and

TB patients are not only able to access, but are also supportive of and engage with the health service providing the TB DOTS Program. So what was the situation with regard to TB DOTS Components 3 in PNG in the period leading up to the formulation of the TB DOTS Policy in 2005? To answer this we need to examine what constituted the primary care system in PNG, how comprehensive and broad based it was in terms of population coverage, and also the quality of care the PNG health service was able to deliver.

This matters because we have already seen that in PNG over 85% of the population live in rural areas, surviving largely by subsistence agriculture, many in quite difficult geographical settings. The provision of a comprehensive TB DOTS service thus faces major logistical challenges. We have also seen that rural PNG has some of the highest TB incidence rates in the world. A well-conducted study found an incidence of 1290 per 100,000 people per year in Gulf Province (Cross, Coles et al. 2014). A Western Province study, based on Health Centre TB registers, found an incidence of around 500 per 100,000 people per year (McBryde 2012).

In the first section of this Chapter we examine the capacity of the PNG Health System, in 2005, to deliver Direct Observation of Treatment (DOT). The delivery of Direct Observation of Treatment, according to the WHO Policy (WHO 2003), requires a well-functioning Primary Health Care (PHC) structure providing broad population coverage, in order to diagnose 75% of TB cases, and undertake DOT to achieve an 85% cure of those TB cases (WHO 2003).

### 7.2.1 Provision of Direct Observation of Treatment (DOT) in PNG

In PNG population coverage with basic PHC services, the basis for successful delivery of

DOT, is provided by three key components of the PNG Health System. The PNG Health

System is organized in a pyramidal PHC structure:

1. *Aid Posts (AP)* form the broad base of this PHC structure. With officially 2,400 APs throughout PNG, each AP serves a population of 500 to 3000 people (Campos-Outcalt, Kewa et al. 1995). Staffed by a Community Health Worker CHW they provide a basic package of curative and preventive services to villages throughout PNG.
2. *Health Centre (HC)* - APs are supervised by a HC which serves a population of between 5,000 and 20,000 people (Campos-Outcalt, Kewa et al. 1995). HCs are staffed by a varying combination of Health Extension Officers (HEO), Nurses and CHWs. In the PNG Health System a CHW has undertaken a 6 to 12 month training program, and a Nurse a three year training program. The HEO is a cadre of health worker who falls between a Nurse and Doctor, having completed four years of training, and able to undertake procedures requiring greater skills than those of a nurse, e.g. performing a vacuum extraction of an obstructed labour. These higher-level skills are required in the remote rural communities of PNG where access is difficult and doctors are absent. Each HC is managed by an Officer in Charge (OIC) who has an important role within the HC, as described later.
3. *Health Patrols* are conducted by HC staff to “clinic points” in those remote or inaccessible villages within the catchment region of the HC, that do not have easy access to an AP or HC. These patrols are meant to

be conducted at least monthly. Health Patrols fill in the gaps in population coverage, where there is no AP or HC.

This combination of APs, HCs and Health Patrols is designed to provide broad-based population coverage of PHC services and forms the basis for the potential to diagnose 75% of TB cases and provide the DOT of TB patients that will ensure an 85% cure of TB cases, set as the goals for a successful TB DOTS Program.

This PHC structure, based on APs, Health Patrols and HCs are the basis of the PNG Health System. It was the official policy approach of the PNG Government and National Department of Health through which the PNG National Health Plan 2000-2010 would be delivered (GovPNG 2000, Asian Development Bank 2003).

#### **7.2.2 Aid Posts – Impact of Governance Reforms & Poor Capacity**

*In 2006 “Aid-Posts (AP) are (still) the first point of contact of the community with the PNG Health Service. Staffed by Community Health Workers CHWs and responsible to and employed by the District and Provincial Governments they are meant to provide basic curative and preventative services to the rural population of PNG. The Aid-Post CHWs refer more complicated cases to either Health Centre (HC) or Provincial Hospitals. The strength of Aid-Posts is their proximity to villages and thus a capacity to deliver a basic package of curative and preventive interventions at the community level” (Research Field Notes November 2006).*

The number of Aid Post (AP), and therefore access to health services, actually increased in the years immediately after Independence. It was estimated that by

1982, 93% of the PNG population was within 2 hours walk of an AP (Reilly 1990, Duke 1999, Pincock 2006).

Under the *1995 New Organic Law on Provincial and Local Level Government* (LLG) the funding, staffing and maintenance of APs became the responsibility of Provinces and LLG. However, there was a low level of commitment to health by Provincial and LLG. These governance reforms brought about significant changes in the management, functioning and performance of APs.

As Provincial and LLGs suffered budgetary constraints, APs were closed to save on salaries and maintenance (Duke 1999, Asian Development Bank 2003, Pincock 2006, Research Field Notes November 2005, Research Field Notes November 2006). As a result, during the late 1990s, there was a decrease in the number of APs in PNG. So that by 1998 in the eastern Highlands Province of PNG 82 (56%) of the 147 APs were closed and many others were derelict, with few drugs and no regular supply of vaccines etc.(Duke 1999). Retrenchments and staff simply leaving their posts meant even those APs still officially open were often unmanned (Duke 1999). *“APs get closed because there are problems - sometimes the health workers don’t get paid for a long time so they leave, it’s too remote so they leave and they don’t get any shipment of drugs for like a year, so they just close. Like, the plumbing might bugger up and what’s the point, people move.* (Adepoybi - Interview 12th April 2008).

During the period from 1995 to 2005 the closure of significant numbers of APs continued throughout PNG, albeit with variations in the proportion of closures in the different parts of PNG. *“The loss of Aid-Posts (throughout PNG), from 75% open in*

*1995 to 63% open in 2000, is continuing. As the loss of basic services coverage is extended, unmet demand from the more remote populations increases” (Research Field Notes November 2005).*

By 2006 the National Newspaper (3<sup>rd</sup> October 2006), quoted the PHA from Eastern Highlands Province as saying that *“Sixty percent of rural Aid-Posts in Eastern Highlands province have been closed down due to a number of internal and external factors. Some of the internal factors include lack of regular maintenance, staff postings, staff industrial issues and retrenchment exercises. Another major contributing factor is ineffective deliveries of basic medical equipment and supplies. External factors include law and order, politics, tribal fights and land compensation issues, lack of political and community support” (Zachery Per 3rd Oct. 2006).*

The 2006 field visit found that APs are *“described as the backbone of the nation’s health and yet a large proportion are closing down. Because of its importance, the status of the Aid-Post system needs to be reviewed to address the declining trend. The roles of Aid-Posts must be broadened to include more preventive and promotive activities. With the continuing high burden of disease and emergence of HIV/AIDS in rural populations, PNG cannot afford this rapid decline in the provision of primary level rural health services” (Research Field Notes November 2006).*

Due to the large number of closures of APs by 2006, instead of being within two hours walk of an AP, as was the case at Independence, *“some villages now must travel up to 4 days to reach medical aid” (Pincock 2006).* One interviewee noted that *“the system is broken and it’s continuing to deteriorate, APs which are the first line of health service*

*delivery, a lot of them are shut, and so people are forced to walk over mountains, across rivers, on little mountain paths, to get to the next, closest health service provider and that may just be another AP, and APs are generally staffed by a person called a CHW” (Anonymous 1 - Interview 10th April 2008).*

In PNG the further people have to walk the less likely they are to access treatment. A study conducted in 1998 in the Wosera District of East Sepik Province examined the effect of distance to a HC on attendance for treatment when sick. The study found that when people had to walk further than 3.5 km there was a 50% decrease in attendance for significant illnesses such as pneumonia and diarrhoea (Müller, Smith et al. 1998). People in PNG are not able, due to terrain, geographical isolation, fear of violence, and cost of transport to travel long distances to access health services, even in the case of life threatening illness (Müller, Smith et al. 1998).

This marked decline in the number of APs and the resulting low level of coverage with health services provided the context, at the PHC level, for the development of the 2006 TB DOTS policy. With 50% to 60% of APs closed, the population coverage of and access to the PNG Health System was limited, kept declining, and had been declining significantly in the ten years leading up to the adoption of the 2005 PNG TB DOTS policy.

### **7.2.3 Health Patrols – Impact of Governance Reforms & Poor Capacity**

In those rural and remote villages where there was no fixed AP or HC, Health Patrols were carried out regularly, usually on a monthly basis, from the closest HC to designated “clinic points” in rural and remote villages that do not have an AP or HC.

This meant that there was population coverage with health services, even in the more remote parts of PNG. It was the combination of Aid-Posts, with regular Health Patrols where needed, that provided a comprehensive PHC service. *“The Health Patrols were often the only contact rural villages had with the provision of services by the government. ... It is through outreach (health patrols) that most children, mothers and the community in general come into contact with preventive and public health activities”* (Research Field Notes November 2005)

Health Patrols, by achieving population coverage, are seen as essential to implementing the 2000-2010 PNG National Health Plan (GovPNG 2010), and are an indicator in the PNG National HIS. *“Outreach Patrols from all HCs in PNG are a priority ... and are essential to achieving the NDOH Public Health Strategic Directions. Outreach is an indicator in the NHIS and is to be reported and reviewed on a quarterly basis”*(Research Field Notes November 2006).

Following the 1995 New Organic Law on Provincial and LLG there was a rapid, dramatic decline in the number of Health Patrols to rural villages. *“Although they are considered very important by the HC staff, outreach services are often not carried out due to lack of resources. Sufficient transport and an operational budget in the HCs would go a long way to assure that patrols are carried out”* (Research Field Notes November 2005).

By 2006 the PNG HIS indicated that *“only 50% of outreach patrols planned are actually carried out and there is no indication of this improving. This critical activity appears to be given low priority in HC activities”* (Research Field Notes November 2006).



The 2006 field visit confirmed that *“in those HCs visited there had been no Patrol/Outreach activities in the previous twelve months to the designated clinic points. Further there had been no supervisory visits by Provincial Health or District Health staff to those HCs in the preceding twelve months”* (Research Field Notes November 2006).

By 2006, 50% or less of Health Patrols were being carried out. Again this decline in health service coverage of rural and remote villages in PNG by Health Patrols was the context for the development of the 2006 PNG TB DOTS policy.

#### **7.2.4 Health Centres – Impact of Governance Reforms and Poor Capacity**

Besides Aid Post and Health Patrols, the third and equally important component in the provision of Primary Health Care services in PNG, and therefore also central to the implementation of a TB DOTS policy, is the Health Centre (HC). As we have already seen in the PNG PHC hierarchy HCs are placed above APs serving a population of 500 to 3,000 (Campos-Outcalt, Kewa et al. 1995). The *1995 New Organic Law on Provincial and Local Level Government* resulted in the funding, staffing and maintenance of HCs becoming the responsibility of LLG (Districts) (*Asian Development Bank 2003*).

##### **7.2.4.1 Health Centre – Staffing and Management**

Each HC is staffed by a varying combination of HEOs, Nurses and CHWs. Managerial responsibility for each HC is with an Officer in Charge (OIC), either a HEO or Nurse, who takes responsibility for the management of the HC, and provides oversight of the implementation of the HCs Annual Activity Plan (AAP). The AAP sets out the activities the HC will conduct in each 12 month period; this includes provision of curative services, health prevention / promotion activities with regard to disease control programs (HIV, Malaria, TB DOTS etc.), supervision of APs and conducting Health

Patrols to the designated “clinic points” in rural and remote villages. The AAP activities are also meant to determine the amount of money the HC receives from the District and Provincial Administration for that year. HC AAP’s are meant to be developed in consultation with the PHA and PHO so that the HC AAP aligns with the Public Health Strategies as outlined in the 2000-2010 National Health Plan (Research Field Notes November 2005, Research Field Notes November 2006).

Before and for a short period after Independence, each District had its own DH, staffed by a District Medical Officer. With the decline in rural health services DHs no longer have doctors working at this level and are now staffed by HEOs, Nurses and CHWs, and are, in effect, large HCs within the PNG Health System.

#### **7.2.4.2 Health Centre – Officer in Charge (OIC)**

The OIC role is crucial to the efficient and effective functioning of the HC. “The role of the OIC in each DH or HC is the crucial person in communicating information about the activities outlined in AAPs. The OIC is also crucial in submitting requests for (HC) funds, ensuring the appropriate acquittals are returned to the Provincial (Health Office) and also for other crucial administrative responsibilities such as signing requisitions for medications. (Research Field Visit Notes May 2007)

As with management skills at National, Provincial and District levels the performance and capacity of OICs is generally poor because OIC appointments were, and are, often based on nepotism and wantokism, rather than ability. *“In some of the DHs and HCs the OIC was absent for several weeks at a time for various reasons - on PHO activities, retired but not replaced as yet, suspended for inappropriate use of funds, etc. So AAP*

*activities are not happening and staff not being informed of AAP activities. Therefore the OIC can be a major source of “the bottleneck” in implementing the AAPs and achieving the Public Health Strategic Directions” (Research Field Visit Notes May 2007).*

In Provinces with access and transport difficulties it is not possible for the HC OIC to be involved in the preparation of the AAP e.g. *“In Western Province due to difficult access and cost of transportation it is not possible to involve the OIC in the preparation of the AAP” (Research Field Visit Notes May 2007).* In these settings HC staff are not even aware of NDOH Public Health Strategic Directions and new policies.

#### **7.2.4.3 Health Centre – Human Resources**

Human Resources are a major problem in HCs throughout PNG. During the 2007 field visit it was noted that *“the human resource problem at Provincial and District level is well known and well documented. Districts are unable to attract or retain medical officers and current production rates are not expected to make an impact on the shortage of nurses and CHWs. The skills mix at centres is poorly considered, and good staff are unable to adequately perform their roles through lack of essential complementary staff and resources. Morale is frequently poor and staff discouraged” (Research Field Visit Notes May 2007).*

In rural and remote areas where access and transport to many HCs are difficult *“there is serious doubt about the provision of services in these facilities i.e. staffing levels, adequate provision of essential medicines, vaccines and equipment” (Research Field Notes November 2006).*

Despite these constraints *“you do have health facilities out there that have got staff, who come to work every day, and they are not delivering much in the way of health care because they don’t have drugs or nobody shows an interest in what they are doing, or they don’t really know what they are doing, and nobody is motivating them and there is an essential piece of equipment that is broken and has been broken for 2 years”* (Anonymous 4 - Interview 18th June 2008).

#### **7.2.4.4 Health Centre – Supervision & Support**

The PNG National Health Plan 2000-2010 emphasizes the importance of supportive supervision and on-site training (GovPNG 2000). Two of the PNG National Health Core Indicators are:

*“18. The proportion of HCs with staff receiving at least one supervisory visits per year” and  
“19. Proportion of Health facility staff receiving at least one competency based in-service training session each year.”* (Asian Development Bank 2003)

Under the Public Health Administration Act of 1997, which outlines the roles and functions of the National, Provincial and District level health services in PNG; the Provincial level was required to conduct regular supervisory visits to each of the HC within the Province. This was, and is still is, meant to provide oversight of implementation of the HC AAP as well as on-site training in existing and new health programs (Research Field Notes November 2006).

Under the Public Hospitals Act of 1995 Medical Officers are meant to conduct supervisory visits to HCs also on a regular basis, with a view to ensuring curative and treatment protocols are being carried out in accordance with NDOH treatment guidelines.

However, by 2005 *"the percentage of HCs that had at least one medical officer visit per year declined from 37% in 2003 to 26% in 2005 (provincial range: 9%-60%). The percentage of HCs that have received at least one supervisory visit from the PHO per year declined from 50% in 2003 to 44% in 2005 (provincial range: 10%-90%)"* (Research Field Notes November 2006). There was *"a continuing downward trend for support and supervisory visits from provinces to districts and health facilities by medical officers and provincial health staff. Supervision in general is not a priority in the majority of the provinces"* (Research Field Notes November 2006)

The reality was that by 2005 these supervisory visits had declined significantly. The governance reforms of the 1995 New Organic Law on Provincial and LLG meant that there was a complete disconnect from the National to the Provincial, as well as from the Provincial to the LLG (HC and AP) level. A lack of supervision by managers from the District and Provincial level meant that national policies and programs such as TB DOTS had no effective means of reaching the HC and AP level, or of effectively being monitored should such a policy come onto the PNG health policy agenda.

#### **7.2.4.5 Health Centre – Funding, Infrastructure and Staff Morale**

Funding of Health Services was not a priority at both the Provincial and LLG levels. By 2005 very little recurrent budget was actually getting down to the primary care level - *"overwhelmingly there are minimal resources reaching the HCs, Sub-HCs and Aid-Posts from recurrent (PNG Government) funding arrangements. Many places rely on donor contributions through the Health Sector Improvement Program (HSIP) i.e. the donor funded Health Sector, SWAp for the most basic services"* (Research Field Notes November 2005).

As a result of funds not reaching the HC level there has been a lack of maintenance in both the HC and also HC staff housing. *“A constant complaint repeated in all provinces visited is the lack of maintenance and repair of staff houses, health facilities, and vehicles. Capital investment is a provincial and not a national responsibility. At facility level, the poor infrastructure and equipment, the inadequate supply of essential drugs, the lack of functioning transport, the unavailability of cash for outreach activities, and the lack of supportive supervision impede health services delivery. Health staff are often demotivated by the lack of response to their problems as well as deteriorating living conditions”* (Research Field Notes November 2005).

Despite these major constraints there were still *“dedicated staff working under intolerable conditions: poor water supplies, poor management and supervision, a lack of information and communication, limited finances, equipment, resources and accommodation”* (Research Field Visit Notes May 2007).

#### **7.2.4.6 Health Centre – Communities and Quality of Care**

There was at the HC level little engagement with communities to involve the communities in the provision of services and to carry out Health Promotion activities and campaigns. During the 2006 field visit this research draws on it was noted that *“the services offered at HCs are often limited to treatment services only .There was no evidence of engagement with communities to plan and participate in other Health Promoting activities such as Healthy Villages Projects or Village Health Volunteers (VHV).With a few commendable exceptions there is a seeming disconnect between*

*Health Workers and Health Promotion activities”* (Research Field Notes November 2006).

All of these factors, along with inadequate ongoing staff training to maintain professional standards, have an impact on the community’s perception of the quality of care provided in HCs. Those people who are able to do so, by pass what they perceive as poor quality care. *“Problems with declining quality of training of key cadres have contributed to a real and perceived loss of quality of care in many centres. Patients are bypassing these centres to seek services from hospitals or larger HCs, where the quality of care is seen to be better”*(Research Field Notes November 2006).

#### **7.2.4.7 Capacity to provide Direct Observation of Treatment**

In PNG PHC services to the broad population is based on APs, Health Patrols and HCs.

It was this broad-based PHC System that provided the basis for a TB DOTS program, and particularly the DOT competent of TB DOTS, that would meet the WHO TB DOTS policy requirements (WHO 2003).

However this research finds that the PNG Health Systems capacity to undertake DOT for six months had declined significantly due to:

1. *Aid Post* closures – by 2005, 50% to 60% of APs had closed across PNG. The majority of these AP closures had taken place in rural areas with the highest incidence of TB in the ten years before the 2006 TB DOTS Policy.
2. *Health Patrols*, which had provided regular patrols to those areas not served by an AP or HC, were not taking place for a variety of reasons – lack of funding and transport, lack of supervision and accountability for HC programs and activities from the Provincial or District level.

3. *Health Centres* had been in decline in the period since Independence but this had accelerated with the reforms of the 1995 New Organic Law, leading to low staff morale due to little or no funding reaching HCs, poor and deteriorating HC and staff housing infrastructure and maintenance, high levels of absenteeism and “ghost workers”, and as a result a decline in quality of care and perceived quality of care by communities, as well as low levels of engagement by the community with their health and health services.
4. The key Health System components at the HC and AP level (Human Resources, Financing, and Service Delivery) had declined considerably.
5. There is a lack of Leadership and Political Commitment at the National, Provincial and District level to address these major policy issues.

A national PNG TB DOTS policy must address these fundamental Health System contextual issues to be able to provide DOT to achieve 80% population coverage and cure 75% of TB cases.

**7.3 7B - “Component 4 - Uninterrupted supply of quality-assured drugs with reliable drug procurement and distribution systems” (WHO 2003)**

Similarly, with regard to TB DOTS *Component 4 – Effective Drug Supply & Management System*, the capacity of the PNG Health System to provide and manage an effective drug supply and management system had been in significant decline in the decade leading up to the adoption of the 2006 TB DOTS Policy. The PNG Health System was not able to provide an effective regular supply of drugs to HCs and APs.



In order for the PNG Health System to deliver *Component 4 - Uninterrupted supply of quality-assured drugs with reliable drug procurement and distribution systems* of a TB DOTS Program, we need to understand why these regular stock-outs were (and still are) taking place, i.e. what were the constraints in the PNG pharmaceutical supply chain that a TB DOTS policy needed to address.

### 7.3.1 Organization of Pharmaceutical Supplies in PNG

The 1995 New Organic Law on Provincial and LLG had a significant impact on the provision of pharmaceuticals and drugs to the Provincial and District level in PNG. The Medical Supply Branch (MSB) in the National Department of Health (NDOH) became responsible for:

1. Purchase of all pharmaceuticals for the PNG Health System through a competitive tendering process, and
2. Maintaining regulatory control over all pharmaceuticals imported into PNG.

The MSB supplies pharmaceuticals to the Provinces. Based on requisitions submitted to the MSB by the Provincial level Area Medical Stores (AMS), pharmaceuticals are shipped to the AMS. The MSB no longer has responsibility for pharmaceuticals once they reach the AMS. The AMS is then responsible for the distribution of the pharmaceuticals to Provincial and DHs, HCs and APs. HCs and APs complete and submit requisitions to the AMS, based on need. The AMS is then meant to supply pharmaceuticals to HCs and APs, in a timely fashion (Research Field Notes November 2006).

However, by the late 1990s the inability of the AMSs to supply essential drugs to HCs and APs reached crisis point with frequent "stock outs" of essential medicines

(Anonymous 1 - Interview 10th April 2008, Ongugo - Interview 22nd November 2010, Duke 1999).

This had not improved by 2006 with less than 60% of HCs having an adequate supply of essential medicines. It was noted in field notes for this research that *“availability of adequate supplies is affected by the inefficient system as a whole (procurement, distribution, management at AMS and facility level, non-coordinated push/pull system). Drug availability has been unacceptably low during the past five years with the NHIS reporting the national average of months that hospitals and HCs are adequately stocked (i.e. none of the key medicines is out of stock) varies between 56 and 59%. There is high variation between provinces”* (Research Field Visit Notes May 2007).

### **7.3.2 Aid Post and Health Centre Medical Kits**

By 1998 the shortage of drugs and supplies to APs in rural PNG had reached a point where APs were not able to provide a basic level of medical care due to drug shortages. As a result, in 1998 the ADB took on responsibility, through its Health System Development Project (HSDP), to assemble and supply AP Medicine kits, via a private contractor, as well as providing transport for the distribution of the AP Kits. This AP Kit supply mechanism was completely separate from the Government's AMS routine drug and medical supplies requisition scheme that was meant to supply APs(Asian Development Bank 2003, Research Field Visit Notes May 2007).

In 1999 AusAID commenced a similar project to supply HC medicines kits. Again the preparation and supply of HC Kits was by a private contractor, bypassing the AMS requisition mechanism. Initially seen as an interim measure this had, by 2006, become an integral element of the pharmaceutical supply chain to HCs (Anonymous 1 -

Interview 10th April 2008, Adepybi - Interview 12th April 2008, May - Interview 17th June 2008, Research Field Visit Notes May 2007).

The result was that by 2006 medical supplies to rural and remote HCs and APs were being delivered by three separate supply mechanisms, due to the significant ongoing managerial problems in the AMS. One system through the PNG NDOH AMS routine pharmaceutical requisition system; one through a private contractor to supply HC kits; and another also through a private contractor to supply AP kits. The latter two had initially been established as a short term measure until the AMS system had been strengthened (Research Field Notes November 2006).

### **7.3.3 Area Medical Store – Provincial Level**

The effects of a lack of accountability, a lack of responsibility for actions, and low management capacity had a significant impact on performance in the Area Medical Store (AMS). During the field trip for this research it was observed that whilst medical supplies were reaching the provinces, these supplies were not distributed from Provincial Health headquarters to facilities in a timely manner with drugs being held up for weeks or even months (Research Field Visit Notes May 2007). The lack of transport to distribute drugs was the most common reason given for this hold up. But also inadequate stock management practices at AMS lead to wastage of supplies (expiry; damage, high risk for theft) and stock-outs. Performance of AMS is below standard e.g. long lead times as reported by clients; not service oriented; lack of communication etc.(Research Field Visit Notes May 2007). This was confirmed by interviews and reports (Anonymous 1 - Interview 10th April 2008, Anonymous 2 - Interview 11th April 2008, Adepybi - Interview 12th April 2008, Ongugo - Interview 22nd November 2010).

As part of the fragmentation of the health system, supervision of the provincial level AMS from the national level NDOH Medical Supplies Branch (MSB) was very weak. Similarly, accountability for performance by the AMS to the MSB was weak, as with other components of the PNG Health System (Research Field Visit Notes May 2007). The MSB and AMS also suffered significant human resources, as well as governance and organizational, weaknesses and challenges, with a high staff vacancy rate, and high rates of staff absenteeism (Research Field Visit Notes May 2007). Those provinces with trained pharmacists (i.e. greater human resource capacity) had fewer problems with the management and supply of drugs (Research Field Notes November 2005)

In summary it was found during the 2007 field visit that distribution of pharmaceuticals from AMS to hospitals and provinces, and from provinces to health facilities was fragmented and ad-hoc; distribution plans are not available in most places; money to pay for transport is not released on time and/or insufficient (in one provincial transit store visited, the HC kits about to expire were piling up). Consequently supplies available in the system were not reaching health facilities and patients (Research Field Visit Notes May 2007). This was especially so in the mostly rugged rural and remote areas of PNG (Research Field Visit Notes May 2007). The absence of essential medicines was a major factor in people not attending HCs and APs (Research Field Visit Notes May 2007, Research Field Notes November 2005)

#### **7.3.4 Medical Supplies Branch of National Department of Health – National Level**

At the MSB national level there was no comprehensive drug management information system in place that provided routine information for assessing performance of the

medical supply system *“including, e.g. supplier lead times, analysis of which items consume the largest share of the budget, province’s share of distributed supplies in money terms, lead times and order fulfilment rate per AMS, availability of vital supplies in the system”* (Research Field Visit Notes May 2007).

As *“estimates of national requirements for procurement purposes are based on unreliable and incomplete data; either too much or too little is being procured and emergency procurement at higher prices becomes necessary”* (Research Field Visit Notes May 2007).

The problem with drug supply *“is not one of financing for pharmaceutical supplies in PNG. The recurrent budget and donor partner funding levels for drugs in PNG was sufficient to meet the needs of the PNG Health System and population”* (Research Field Visit Notes May 2007).

#### **7.3.5 Capacity to provide quality-assured drugs with reliable drug procurement and distribution systems (DOTS 4)**

To summarize, with regard to the PNG Health Systems capacity to deliver TB DOTS

Component 4, this research has found:

1. Frequent “stock-outs” – drug supplies to the Primary Care level are not organized to guarantee a regular supply of drugs; frequent disruptions to drug supply occur with periods where over 60% of HCs do not have essential medicines.
2. No drug information system, resulting in frequent over- and under-ordering of drugs, with the need to purchase emergency supplies at higher cost to the PNG Health System.

3. Poor or absent communication and accountability with regard to drug procurement and distribution.
4. Inadequate Human Resources to manage the drug supply in PNG with insufficient trained pharmacists and pharmacy technicians to ensure appropriate management of pharmaceutical supplies within the PNG Health System.
5. There were sufficient levels of funding from donors and the recurrent budget to supply the required pharmaceuticals to the PNG population.
6. In order to maintain supplies of drugs to the Primary Care Level, parallel pharmaceutical supply systems are required via AP Kits and HC kits, with donor funds and managed through the private sector, to ensure drugs reach APs and HCs.
7. There is a lack of Leadership and Political Commitment at the National, Provincial and District level to address these major policy issues.

#### **7.4 Conclusion**

The capacity of the PNG Health System to deliver primary care services had declined during the 1980s and 1990s. The New Organic Law of 1995 and the resulting governance reforms entrenched clientelism, wantokism, nepotism, low standards of management and corruption in the PNG Health System, accelerating this decline in the ten years before the 2006 TB DOTS Policy. The PNG Health System was not immune from the impact of the governance reforms. There was limited leadership and political commitment to address these fundamental structural governance barriers. This provided the policy context for the 2006 TB DOTS Policy that needed to be addressed to successfully implement the policy.

*“The slow and steady collapse of the health system in rural areas. The causes for these failures (in the health system) are complex, including cultural and social issues in personnel management, but many are rooted in the breakdown of the vertical integration of health services brought by the New Organic Law. Decentralization can alleviate overloading of central government and improve access to decision-making and participation by more people. However, decentralization can also lead to deterioration in the use and control of resources if the administrative capacity is lacking, which is the case in Papua New Guinea.”* (Research Field Notes November 2005)

## Part 4 - Agenda Setting of 2006 PNG TB DOTS policy

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Part 4 of this thesis deals with *Objective 3 - To describe and critique the 2006 PNG TB DOTS Policy Agenda Setting Process from 2004 – 2006*. Part 4 examines in detail the role of various policy actors – the power relationships between PNG and international donors, the influence of international advisers on the PNG policy process, and the sequence of events in this period which moved TB DOTS onto the policy agenda in PNG in the period from 2004-2006 resulting in the 2006 PNG TB DOTS Policy:

- *Chapter 8 - Agenda Setting and International Actors in the 2006 PNG TB DOTS Policy* describes and critiques the policy actors at the regional and global level who exert significant influence and power in the 2006 PNG TB DOTS policy agenda setting process.
- *Chapter 9 - Agenda Setting within PNG 2004-2006 in the 2006 PNG TB DOTS Policy* describes and critiques the agenda setting process in the 2006 PNG TB DOTS policy, the role of key policy actors and entrepreneurs in PNG in that process PNG during this period.

The first relevant research method for Part 4 of this thesis is the *multiple streams framework* which finds that policy making does not proceed neatly in stages, steps or phases (Kingdon 2011). The *multiple streams framework* identifies three independent policy making streams which flow through the policy process all at once, each with a life of its own (Kingdon 2011):



1. The *problem stream* refers to the process by which, out of multiple policy problems confronting society and government, one particular policy problem becomes of sufficient importance as to come to the attention of policy makers (Buse, Mays et al. 2006).
2. The *policy stream* consists of “*the ongoing analyses of problems and their solutions together with the debates surrounding their proposed solutions.*” (Buse, Mays et al. 2006).
3. The *politics stream* “*operates quite separately of the other two streams and is comprised of events such as swings of national mood, changes of government and campaigns by interest groups.*” (Buse, Mays et al. 2006).

The *politics stream* takes place at the political level, when a problem becomes sufficiently important to require a policy to respond to the problem. It is only when these three streams come together in what is a *policy window* that the policy moves onto the government’s *policy agenda*.

It is the *context, actors, process, content* methods (Walt and Gilson 1994, Buse, Mays et al. 2006) adaption of the three streams framework to resource poor settings which enables to undertake an analysis of the power structures and relationships in the policy process which makes this method also relevant in this Part 4 of the thesis.

Critically examining and understanding the role of power in relationships in the policy process is crucial in low and middle income countries, where complex external power relationships with aid donors, technical adviser’s etc. influence the policy process. This framework enables the researcher to critically examine and understand the dynamic and complex PNG TB DOTS policy process – the actors (internal and external) including the power relationships between those actors, the complex PNG policy context

(cultural institutions, governance and health system), and the capacity to formulate and implement health policy in PNG, which means this framework provides a relevant method to undertake analysis of the 2006 TB DOTS Policy in PNG.



## 8 Agenda Setting and International Actors in the 2006 PNG TB DOTS Policy

### 8.1 Introduction

The aim of the next two chapters is to describe and critique the agenda setting process leading to the adoption of the 2006 PNG TB DOTS policy. We are interested in the roles, the interactions and relationships between the *policy actors* within PNG, but just as importantly within the region and globally, in the *agenda setting* process for the 2006 PNG TB DOTS policy. We are particularly interested in understanding where power lies in these relationships and how it is exercised.

The aim of this chapter is to describe and critique the roles international policy actors played, why they took those roles at that particular point in time, as well as their interactions with each other during the period from 1997 to 2006, leading up to the adoption of the 2006 PNG TB DOTS policy. These roles and interactions provides the international *policy context* for this *agenda setting* analysis.

To identify the global and regional actors in the 2006 PNG TB DOTS Policy process we start by examining how and by whom the PNG health sector is funded. Whilst it is the PNG Government, through the National Department of Health, the provincial and district level governments who have statutory responsibility for health policy formulation and implementation in PNG it is the funders of the PNG health services who exercise the most power in the health policy agenda setting process in PNG. If these actors do not agree to fund the policy then it is a policy in name alone and has no chance of implementation.

We use the *multiple streams framework* (Kingdon 2011) which identifies three policy streams – the problem stream, the policy stream and the politics stream, which come together in a *policy window* for the policy to come onto the *policy agenda*. As a major component of each of the streams takes place at the regional and global level by and with international donors we use the *context, actors, process, content* method adaption of the multiple streams framework to analyse the power relationships which drove the 2006 TB policy process. It is the part of the policy process which takes place outside of PNG, dominated by the global and regional actors, which we analyse in this chapter. Given the power exerted by these policy actors we deal with this regional and global process before moving to the agenda setting process within PNG.

## **8.2 PNG Dependence on Donor Assistance for Health Service Provision**

PNG was, and remains, dependent on donor partners (DPs) for one third to half of its Annual Health Budget, (Table 7).

**Table 7 – Total PNG Health Expenditure / Appropriation 2001-2005**

	2001 exp	2002 exp	2003 exp	2004 exp	2005 exp	2006 app	2006 exp
Government	264.7	243.3	280.5	324.9	341.3	395.1	392.0
DPs	109.2	179.3	131.3	150.3	129.6	189.0	122.6
<b>Total (nominal)</b>	<b>374.0</b>	<b>422.6</b>	<b>411.8</b>	<b>475.2</b>	<b>470.9</b>	<b>584.1</b>	<b>514.6</b>
Share of total Government/DP Exp/App	10.6%	10.8%	10.5%	10.9%	9.6%	11.6%	8.7%
Government share of Exp/App	70.8%	57.6%	68.1%	68.4%	72.5%	67.6%	76.2%
<b>REAL EXPENDITURE (base year 2001)</b>							
Government	264.7	217.6	218.7	248.2	258.1	290.1	289.8
Development Partners	109.2	160.4	102.4	114.8	98.0	138.8	90.7
<b>TOTAL (Real)</b>	<b>374.0</b>	<b>378.0</b>	<b>321.1</b>	<b>363.0</b>	<b>356.1</b>	<b>433.1</b>	<b>380.4</b>
Total Real Exp/App per capita	69.8	68.9	57.0	62.7	59.8	70.8	62.2
Personnel Emoluments	179.1	167.6	159.7	170.4	156.6	166.8	
Goods/Services/Capital/Transfer	194.8	210.4	161.5	192.6	189.1	292.9	

Source: NDOH Planning and Administration, Final Annual Sector Review (ASR) report, 2006; 2006 Public Health Service Report—2006 actuals adjusted to add in an estimated Kina71 million of AusAID spending outside the trust account and not reported to the NDOH.

(nominal and real Kina (millions))

Source: (Foster, Condon et al. 2009)

In the period from 2001 to 2006, there was an increase in both PNG Government and donor partners annual expenditure on Health in PNG for 264.7 million kina to nearly 392.00 million kina (Foster, Condon et al. 2009). However, the “Real Expenditure”, i.e. the actual amount spent on health, was significantly less than the amount allocated to health. This was because of the very limited capacity to move health funds, both recurrent PNG Government and donor funds, from the central Port Moresby Ministry of Finance to the provincial and district levels. This had a major impact on health services provision and health outcomes, as we have seen in detail in Chapters 6 and 7.

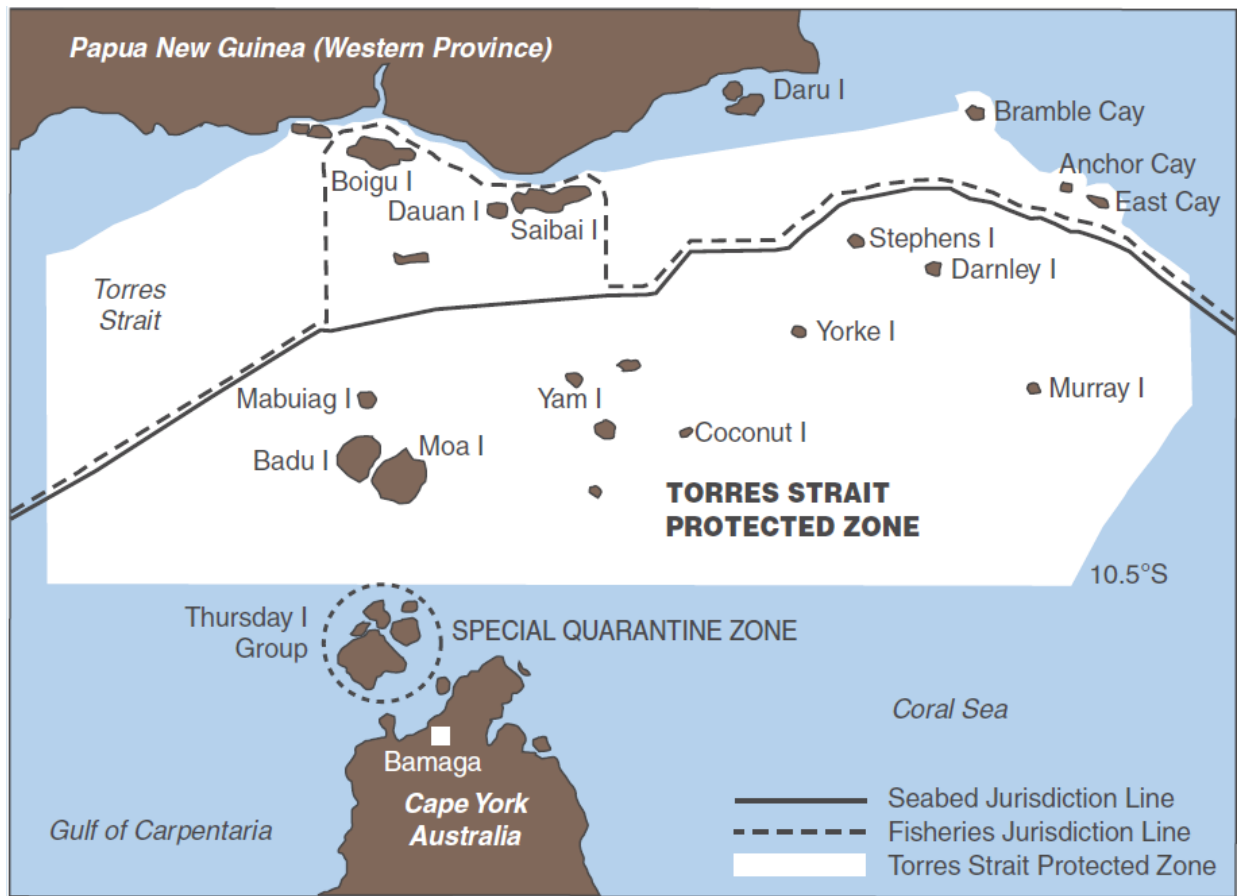
### **8.3 Australia as an International Policy actor in PNG**

It became apparent from the interviews and field notes for this research that one of the major influences or *policy actors* in TB Control in PNG was and is Australia.

Australia's role requires close examination (Konstantinos - Interview 7th May 2008, Adepybi - Interview 12th April 2008, Research Field Visit Notes May 2007, Research Field Notes November 2006).

Australia was the colonial power governing PNG from 1918 until PNG independence from Australia in 1975. Besides being the former colonial power and largest bilateral donor of development assistance to PNG since Independence, Australia has a common maritime border with PNG, the Torres Strait. The Australian border extends up to the high tide mark on the PNG side of the Torres Strait, see Map 9.1. The majority of the Torres Strait Islands between Australia and PNG are Australian territory.

**Figure 3 -- Map of the Torres Strait region, showing the boundaries between Australia and Papua New Guinean territory**



Source: (Brolan, Upham et al. 2011)

Further, there are long-standing kinship links between the citizens of the Western Province of PNG, and the Australian Torres Strait Islands, which were only separated by the border determined in 1978. The Torres Strait Treaty of 1978 ensures the freedom of movement of Australian Torres Strait Islanders and Papua New Guinean citizens from the Western Province of PNG for cultural ceremonies, trade and marriage (Burmester 1982, Arthur 1992, Lawrence 1998). For these reasons, Australia has been the largest aid donor or Development Partner (DP) to PNG since Independence in 1975.



**Table 8 – Net Aid and Australian Aid to PNG and to the Health Sector (AUD millions)**

	2001	2002	2003	2004	2005	2006
Net ODA to PNG AUD Mns	413.3	344.1	328.7	382.3	354.9	415.4
AusAID to PNG AUD Mns	298.1	321.4	321.5	327.0	306.6	322.7
AusAID share in total net ODA (%)	72.1	93.4	97.8	85.5	86.4	77.7
Health ODA to PNG AUD Mns	60.6	81.4	56.4	64.9	54.7	83.2
Health share in total aid (%)	14.7	23.6	17.2	17.0	15.4	20.0
AusAID to health AUD Mns	47.7	59.7	54.3	44.3	38.6	38.9
AusAID share in health aid	78.7	73.3	96.3	68.3	70.5	46.8
Real DP health spend, 2008 AUD per head	12.1	17.3	10.8	11.8	9.8	13.5
Real AusAID health spend, 2008 AUD per head	9.5	12.7	10.4	8.1	6.9	6.3

Source: (Foster, Condon et al. 2009) page 18

As can be seen in Table 8, Australia, through its then development agency AusAID, contributed between 70% to greater than 95%, of all annual Overseas Development Assistance (ODA) to the PNG Health Sector in the period from 2001 to 2005 (AusAID 2006, Senate of Australia Official Committee Hansard 2006, Foster, Condon et al. 2009). This dropped to 46.8% of all Health Sector DP aid in 2006 (Table 8) as a result of the large 2003 Round 3 GFATM Grant for \$US20m for Malaria Control (Aug 2004 to 31<sup>st</sup> July 2009)(GFATM 2004) and 2004 Round 4 GFATM Grant for HIV/AIDS \$US17.5mill (1<sup>st</sup> Sept 2005 to 31<sup>st</sup> August 2010)(GFATM 2004), both projects coming online in PNG in 2006 combined with Global Alliance for Vaccines and Immunisation (GAVI) funds(Foster, Condon et al. 2009).

#### **8.4 Australia’s Move from Direct PNG Budgetary Aid, to Individual Bilateral Project Based Aid 1995-2000**

Direct budgetary support by Australia to the PNG Government Budget was in place from independence in 1975 to 1995, amounting to \$300 mill per year on average

during this period. With direct budgetary support, the PNG Government had total control over how those funds were expended.

In 1995 Australia took the policy decision to move its development assistance from direct budgetary support to the PNG Government, to bilateral individual project based donor support. These individual bilateral projects were managed by private contractors, not through the relevant PNG Government Departments, such as the PNG Department of Health.

*“AusAID is the biggest donor in the health sector. Australia has provided general budgetary support of approximately \$Aus300 million per year to the government of Papua New Guinea. In a change of policy, budgetary support has been phased out in favour of project aid between 1995 and 2000. Early in this transition, AusAID focused on hospital management and operations as well as providing assistance in the training of health professionals. The Health Sector Support Program, which provides comprehensive assistance to NDOH and targets six provinces, came online in 1998-1999. The Women and Children’s Health Project, designed to improve vaccination coverage and women and children’s health extension activities nationwide, began implementation in earnest during the same period” (Asian Development Bank 2003).*

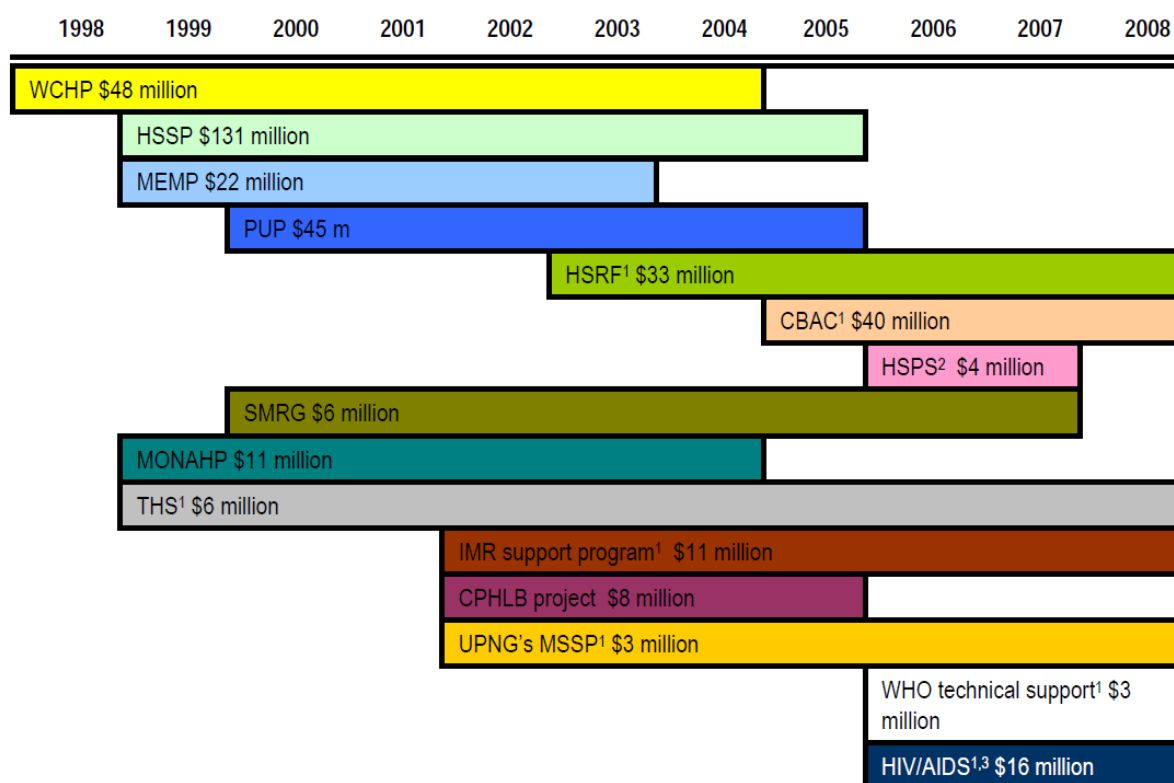
Despite this policy change the Australian Government guaranteed that development assistance funding to PNG would remain at \$Aus300mill:

*“The change from direct budget support from the aid program to jointly programmed aid was completed in 1999. Australia’s aid program in PNG will be significantly more effective, transparent and accountable. A maximum indicative annual planning figure of \$300 million nominal will be provided, subject to performance against benchmarks” (Downer 9th May 2000)*

This was a major policy shift and one that was not fully endorsed by the PNG government. The projects were much more specific and the private contractors had full control of the funds. It also meant the PNG Government now had to meet all of its recurrent budget costs. This marked a major change in the relationship between PNG

and Australia and how donor assistance between the two countries was delivered and managed.

**Figure 4 – AusAID support to the Health Sector in PNG Major Activities**



- Notes:
- 1 – ongoing activity
  - 2 – Health Sector Procurement Support Project
  - 3 – Health program response to HIV/AIDS

Source: (Foster, Condon et al. 2009)

As can be seen in Figure 4, Australia continued to provide major bilateral project health sector funding to PNG from 1998 to 2008 across those parts of the health sector that were essential to the provision of basic health services. The Women’s and Children’s Health Project (WCHP) (\$Aus 48mill) provided funding for all key parts of Women and Children’s Health services in PNG from the national, provincial, down to the district level, with Australian technical assistance, training and supplies(Asian Development Bank 2003). The Health System Strengthening Project (HSSP) (\$Aus131 mill), was the largest single bilateral health project providing broad assistance to the National Department of Health, and also at the provincial and district levels for

management and technical support down to the procurement and delivery of drug kits for HCs and APs from 2001 onwards. These drug kits made up for major deficiencies in the routine PNG drug supply system from the national level down. The Medical Equipment Management Project (MEMP) (\$22Aus mill) ran in parallel with the HSSP, and provided basic essential medical equipment, along with training to maintain the equipment. Implemented in parallel with the HSSP Project, the Pharmaceutical Upgrade Project (PUP) (\$Aus45mill) provided long-term Technical Assistance to the MSB, AMS'ss and hospitals to address the major constraints with regard to drug purchases and distribution in PNG (Foster, Condon et al. 2009, Research Field Visit Notes May 2007). The Medical Officers, Nurses and Allied Health-Workers Project MONAHP (\$Aus 11mill) funded doctors, nurses, midwives and allied health professionals to undertake post graduate studies in PNG, Australia and the Asia-Pacific Region. The Tertiary Health Services Support Project (THS) (\$Aus6mill) funded Australian Specialist Medical Teams to travel to PNG to provide Specialist Medical treatment such as plastic and heart surgery. The PNG Institute of Medical Research (PNGIMR) support program (\$Aus11mill) provided a significant proportion of the research activities and recurrent budget of the PNGIMR. The Central Public Health Laboratory Project (CPHLB) (\$Aus8mill) funded a major renovation of the Central Public Health Laboratory in Port Moresby, as well as the training of staff to work in and manage the PHL. The University of PNG Medical School Support Project (UPNGs MSSP) (\$Aus3mill) funded the provision of Australian Technical Support to the University of Papua New Guinea (UPNG) Medical School so that the Medical program could be taught. The WHO technical support (\$Aus3mill) provided funding to WHO to support technical assistance to PNG in the areas of Disease Surveillance, HIV and TB, and which funded the position of Dr Yadav, the WHO Stop TB Medical Officer, who provided

technical assistance to the NDOH in developing the 2006 PNG TB DOTS policy. The HIV/AIDS (\$Aus16mill) was the major source of funding for HIV activities in PNG up until the successful 2004 Round 4 GFATM Grant for HIV/AIDS \$US17.5mill (1<sup>st</sup> Sept 2005 to 31<sup>st</sup> August 2010)(GFATM 2004).

Australia, through AusAID, remained by far the largest development partner (DP) in PNG, and to the PNG health sector. If PNG was to successfully fund a TB DOTS Policy, then AusAID was the logical and most likely source of both initial and ongoing funding. As such, AusAID's approval and agreement to fund a PNG TB DOTS policy was essential.

## **8.5 The Asian Development Bank and the PNG Health Sector Wide Approach**

The ADB was the second largest development partner (DP) to the PNG Health Sector, with several major rural health projects to build capacity in the rural health services in PNG dating from 1982:

*“Since 1982, ADB has supported a succession of relatively large scale projects. These have focused on establishing and extending rural health infrastructure (health centers, APs and staff housing) and rural water supply and the procurement of medical, transport, and radio communication equipment. The most recent of these projects also addressed the maintenance and renovation of health infrastructure and pursued a program of institutional capacity building within NDOH and the PHOs” (Asian Development Bank 2003).*

It was the ADB which proposed to the PNG Government and AusAID that a Health SWAp would be a more effective mechanism for delivering development assistance to PNG's health sector(Asian Development Bank 2003).

A SWAp is meant to provide a single funding mechanism or account through which all donor assistance (aid) is channelled to implement agreed specific goals and targets, usually as set out in the National Health Plan for the Health Sector (Cassels and Janovsky 1998). Health sector SWAps had gained considerable support as a mechanism for the delivery of development assistance throughout the 1980, 1990s into the 2000s (Sundewall and Sahlin-Andersson 2006). A SWAp removes the significant administrative requirements of a large number of bilateral development projects – multiple accounts, multiple and varying bilateral project goals and targets, multiple external project review teams annually etc.(Hill 2002). A SWAp is also meant to enable and ensure direct involvement by the National Department of Health in the implementation of health programs where bilateral projects often run in a semi-parallel manner, separate from the Department of Health (Cassels and Janovsky 1998, Hill 2002, Sundewall and Sahlin-Andersson 2006, Chansa, Sundewall et al. 2008).

In the year 2000, Australia’s policy on the provision of development assistance to PNG evolved further with the commencement of discussions with the PNG Government and the Asian Development Bank (ADB) on the formation of a PNG Health SWAp (Downer 11th May 2004, Asian Development Bank 2003):

*“With the PNG Government taking the lead, there has been greater focus in the health sector on using a sector-wide approach to improve services. Since 1999, Australia has been funding the Health Sector Improvement Program. This program has ... brought together the Government of PNG and all key donors, who have agreed to work towards a single set of priorities that they will collectively monitor. There is a stronger emphasis on working through mainstream PNG service delivery mechanisms and government systems, and using these systems where they are suitably accountable to manage donor funds. In addition, this approach is progressively integrating technical advisers into the PNG health system (rather than sitting outside government under the project model) and looking at ways to introduce incentives to encourage provincial and national governments to deliver health services more effectively”* (Downer 11th May 2004).

With the agreement of AusAID and ADB, the two largest donors to the PNG Health Sector, and the Government of PNG, the HSIP became the single SWAp account or fund through which these major donors to the PNG Health Sectors agreed to channel all their Development Assistance (Asian Development Bank 2003, Research Field Visit Notes May 2007, Research Field Notes November 2006), a process formally introduced by Australia in 2005-2006.

What was important for the PNG Government and the PNG health sector was that despite this change in the mechanism by which donor funding would be available to the PNG health sector, i.e. through a health sector SWAp, the commitment by Australia to maintain its development assistance at about the \$Aus300mill level was to continue. (Downer 9th May 2006, Downer 10th May 2005, Kwa, Howes et al. 2010, Research Field Visit Notes May 2007, Research Field Notes November 2006).

## **8.6 The Global Fund to Fight AIDS, TB & Malaria (GFATM) and the PNG TB DOTS Policy**

A more recent major international policy actor in the PNG TB DOTS Policy was the Global Fund to Fight AIDS, TB and Malaria (GFATM). It was the \$US20m 2006 Round 6 GFATM PNG TB DOTS Grant (PNG CCM 2006) that funded the implementation of the PNG TB DOTS Policy. Without this Round 6 GFATM Grant there would have been a TB DOTS Policy in PNG in name alone.

The Global Fund to Fight AIDS, TB and Malaria (GFATM) was established in 2002 to mobilize funds to assist developing countries to achieve the specific MDG 6 targets to reduce the global burden of HIV, TB and Malaria by 2015:

*“The purpose of the Fund is to attract, manage, and disburse additional resources through a new public private partnership that will make a sustainable and significant contribution to the reduction of infections, illness, and death, thereby mitigating the impact caused by HIV/AIDS, tuberculosis, and malaria in countries in need, and contributing to poverty reduction as part of the Millennium Development Goals” (GFATM 2001)*

As can be seen from Table 9 it is also important to note that *Guiding Principle A* of the GFATM is that *“it is a financial instrument, not an implementing entity.”* GFATM *Guiding Principle C* is that GFATM needed to *“reflect national ownership and respect country-led formulation and implementation processes”*. GFATM *Guiding Principle F* states that GFATM grants needed to be based *“on the most appropriate scientific and technical standards that take onto account locals’ realities and priorities”*. GFATM *Guiding Principle H2* states that GFATM Grants *“will support and reflect high level, sustained political involvement and commitment in making allocations of its resource”*. GFATM *Guiding Principle H3* states that GFATM funded Grants would *“support the substantial scaling up and increased coverage of proven and effective interventions, which strengthen systems for working within the health sector, across government departments, and with communities”*.



**Table 9 – The Guiding Principles of the Global Fund**

- A. The Fund is a financial instrument, not an implementing entity.
- B. The Fund will make available and leverage additional financial resources to combat HIV/AIDS, tuberculosis and malaria.
- C. The Fund will base its work on programs that reflect national ownership and respect country-led formulation and implementation processes.
- D. The Fund will seek to operate in a balanced manner in terms of different regions, diseases and interventions.
- E. The Fund will pursue an integrated and balanced approach covering prevention, treatment, and care and support in dealing with the three diseases.
- F. The Fund will evaluate proposals through independent review processes based on the most appropriate scientific and technical standards that take into account local realities and priorities.
- G. The Fund will seek to establish a simplified, rapid, innovative process with efficient and effective disbursement mechanisms, minimizing transaction costs and operating in a transparent and accountable manner based on clearly defined responsibilities. The Fund should make use of existing international mechanisms and health plans.
- H. In making its funding decisions, the Fund will support proposals which:
  1. Focus on best practices by funding interventions that work and can be scaled up to reach people affected by HIV/AIDS, tuberculosis and malaria.
  2. Strengthen and reflect high-level, sustained political involvement and commitment in making allocations of its resources.
  3. Support the substantial scaling up and increased coverage of proven and effective interventions, which strengthen systems for working: within the health sector; across government departments; and with communities.
  4. Build on, complement, and coordinate with existing regional and national programs<sup>17</sup> in support of national policies, priorities and partnerships, including Poverty Reduction Strategies and sector-wide approaches.
  5. Focus on performance by linking resources to the achievement of clear, measurable and sustainable results.
  6. Focus on the creation, development and expansion of government/private/nongovernmental organization (NGO) partnerships.
  7. Strengthen the participation of communities and people, particularly those infected and directly affected by the three diseases, in the development of proposals.
  8. Are consistent with international law and agreements, respect intellectual property rights, such as TRIPS, and encourage efforts to make quality drugs and products available at the lowest possible prices for those in need.
  9. Give due priority to the most affected countries and communities, and to those countries most at risk.
  10. Aim to eliminate stigmatization of and discrimination against those infected and affected by HIV/AIDS, especially for women, children and vulnerable groups.

Source: (GFATM 2001, Sherry, Mookherji et al. March 2009)

In its first five years from 2002, which cover TB DOTS coming onto the policy agenda in PNG, the GFATM mobilized \$US9.6billion globally for HIV, TB and Malaria programs in developing countries (Feachem and Sabot 2007). The establishment of the GFATM in

2002, and the significant funds it made available for TB control, are important components of the *policy window* opening for the adoption of TB DOTS policy in PNG. Further, the GFATM was established when Australia was looking for mechanisms to continue to maintain \$Aus300mill per annum of development assistance to PNG. Once the capacity of the GFATM to successfully deliver development assistance to developing countries was established, the GFATM became another mechanism by which Australia could deliver development assistance to PNG.

With Australian Policy moving from direct budgetary support to bilateral project specific support to deliver its aid to PNG, the establishment of the Global Fund in 2002 provided a new mechanism for Australia to provide funds to PNG in order to maintain Australia's funding levels at the \$Aus300mill per annum level. Further, the Global Fund governance structure, auditing and reporting requirements, which provided a high level of accountability, were attractive to AusAID:

*"International health facilities such as the Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria (GFATM) will be important vehicles for Australian aid in the health sector. ... The aid program will continue to support the Global Fund to Fight AIDS, Tuberculosis and Malaria through a contribution of \$15 million. In 2005-06, Australia brought forward an additional \$2 million of its 2006 pledge to enable Round 5 grants to proceed, including grants to the Pacific region"* (Downer 9th May 2006).

Australia's level of funding to the Global Fund increased further to \$Aus45 mill in the 2007 Australian Government Budget:

*"increased funding for the Global Fund to Fight AIDS, Tuberculosis and Malaria of up to \$45 million in 2007-08"* (Downer 8th May 2007).

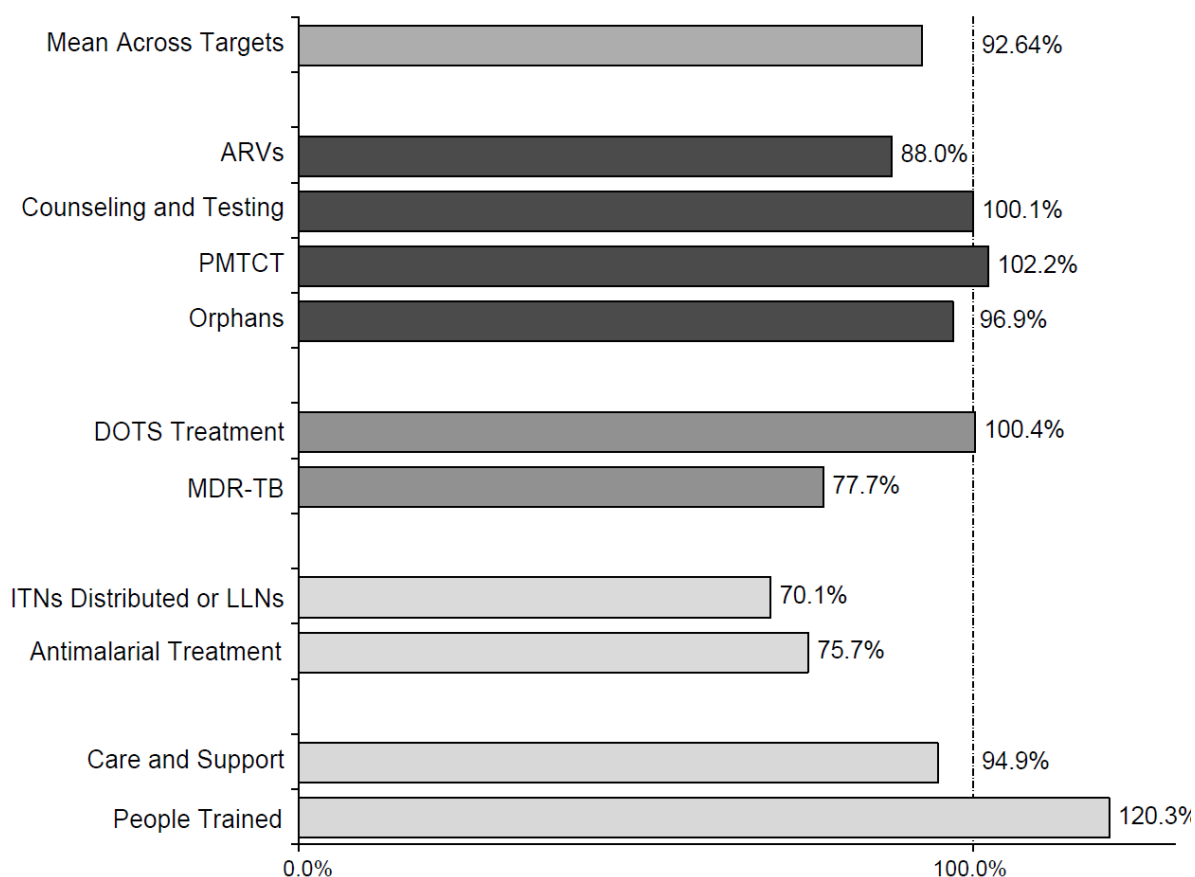
The founding of the Global Fund to fight AIDS, TB and Malaria (GFATM) in 2002 provided a convenient mechanism for AusAID to provide funds to the PNG Health

Sector. It was the combination of these events and policy decisions that meant significant levels of funding became available to PNG for HIV, TB and Malaria. These events form an important part of the *policy window* opening for TB DOTS in PNG.

## **8.7 World Health Organization (WHO) and PNG TB Control**

A further central international policy actor in the 2006 PNG TB DOTS Policy is the WHO. The first major contribution WHO made to TB control in PNG was the TB DOTS Policy (Kochi 1991). The WHO TB DOTS Policy dates from the declaration of TB as a global emergency in 1993 and the subsequent development of the official TB DOTS Policy (Kochi 1994, WHO 1999, WHO). In 1994 TB DOTS was framed as *the* policy solution to this Global Emergency (Ogden, Walt et al. 2003). It was strongly advocated as the only evidence-based policy solution in the years up to its adoption as the official TB Policy in 1994. This occurred despite major reservations by researchers and practitioners that this would reduce funding for further research on new drugs and diagnostics for TB (Brown 1997, Ogden, Walt et al. 2003). TB DOTS was and is the WHO Policy on TB Control in developing countries since the early 2000s (Blower and Daley 2002, WHO 2006). As such the Global Fund took TB DOTS as "*the evidence-based approach*" (GFATM 2001, Feachem and Sabot 2007) to TB Control. As can be seen in Figure 5 TB DOTS received 100% of Global Fund funding for drug sensitive TB. No other TB Control policy approach was being funded by the GFATM.

**Figure 5 – GFATM Programmatic Results Achieved. Percent of two year targets reached by Phase 2 Grants**



Source: (Feachem and Sabot 2007)

That global policy then needs to be adapted to the country level taking into consideration the local context, but should not be adapted so as to make the policy implementable to the point where they are no longer going to be effective:

*“in the resource poor context I think having a global program setting the norms makes sense ... the adaptation at the country level should try to adapt to the realities of the context of transport, communications and the level of education, health workers, all of those things, without losing the effectiveness of the intervention ... On the other hand there is a limit, you can’t water down the guidelines to make them implementable into developing countries with poor resources to the point where they are no longer effective” (Anonymous 4 - Interview 18th June 2008)*

The *second* major contribution WHO made to the development of the 2006 PNG TB DOTS policy was the technical assistance of a WHO Medical Officer Stop TB to provide technical expertise to the PNG National TB Control Program (NTP). Dr Rajendra Yadav,

who was appointed to this position in 2004, became a major *policy entrepreneur*, on behalf of WHO and its global TB DOTS Policy, in the policy process resulting in TB DOTS coming onto the policy agenda in PNG as we will see in the next chapter.

So whilst WHO did not bring a significant amount of funding to the 2006 PNG TB DOTS policy process it did bring a high level of credibility in global policy development and the provision of technical expertise. This was attractive to international donors as well as resource poor governments such as PNG.

### **8.8 AusAID support to WHO for TB Control in PNG**

In 2000 AusAID signed a Memorandum of Understanding (MOU) with the Western Pacific Regional Office (WPRO) of WHO to fund a position in the WHO Office in Port Moresby for a TB Medical Officer, supported by a Secretarial Assistant from 2001 to 2005 (Aia, Yadav et al. 2006). The MOU and associated funding for this TB Medical Officer with WHO in Port Moresby was renewed from 2006-2008 (Aia, Yadav et al. 2006). Dr Rajendra Yadav took up this position in 2004.

In a World TB Day press release, the then Parliamentary Secretary for Foreign Affairs Mr Greg Hunt committed Australia to spending \$Aus1.8m between 2001-2008 to support WHO TB initiatives in PNG (Greg Hunt - Parliamentary Secretary for Foreign Affairs 2007).

The majority of this was to fund WHO staff positions to support the National TB Control Programme in PNG. It was this funding through AusAID aid that paid for the

position of Dr Yadav. The AusAID funding to the PNG TB control program from 2000 up to 2006 was insufficient to cover a national roll out of a PNG TB DOTS Policy.

### **8.9 Australian Domestic TB Policy Problem- the Australian Torres Strait**

TB has not been a major public health problem in Australia for many years, having been successfully controlled since the 1960s and 1970s, with only small numbers of TB cases in subpopulations such as migrants and Indigenous Australians (Li, Roche et al. 2004, Simpson, Clark et al. 2006). Australia's increased interest in TB and TB control in PNG was influenced and shaped by an increase in TB cases in Papua New Guineans crossing the Torres Strait border to seek treatment in Australian Clinics in the Torres Strait.

In 1999, Dr Graham Simpson, the Chest Physician in the TB Clinic at Cairns Base Hospital in far north Queensland, Australia, reported the first cases of TB in PNG citizens from the Western Province of PNG who had crossed the border for TB treatment in HCs in the Australian Torres Strait Islands (Simpson and Knight 1999). Cairns Base Hospital was and is the major referral centre for complicated medical conditions (including complicated TB and MDR-TB) for all of North Queensland, including the Torres Strait, and also conducted regular visits to HCs in the Torres Strait. In 2006, Dr Simpson reported an increase in the number of TB patients, as well as a change in the type and severity of TB in PNG patients presenting in the Torres Strait HCs (Simpson, Clark et al. 2006). There was an increase in the number of TB cases from 7 in the period 1993-1997, to 44 in the period 1998-2002; MRD-TB cases increased from 1 to 3, whilst cases of TB with HIV co-infection increased from 0 to 2.

*“The most striking finding was the dramatic increase in (TB) cases in people from PNG. The outer Australian Islands in the Torres Strait are only 3 kilometres*

*from the PNG coast, and there is free movement of people across the border under a treaty arrangement.” (Simpson, Clark et al. 2006)*

These data are routinely reported to the Australian National TB Advisory Committee, which is made up of representatives of the Australian Commonwealth Department of Health and Ageing, as well as all Australian State and Territory Departments of Health, whose responsibilities include monitoring and reporting changes in communicable diseases patterns, new disease outbreaks, and emerging threats in and to Australia, to the Australian Minister of Health and Government. Whilst these numbers are small by comparison with the burden of TB in PNG, they had a significant impact on total TB cases and TB incidence in Australia, given the low TB incidence in Australia otherwise.

As a result, at the Political level in Australia, HIV and TB in PNG were being identified as a foreign policy issue or *policy problem* for Australia by 2006. In the Australian Parliament during 2006, TB and HIV were both being discussed and referred to in speeches in the Australian Senate; the Senate Foreign Affairs, Defence and Trade Legislation Committee Estimates meetings; and in direct questions on TB and HIV in PNG and Australia’s aid response. (Senator Anne McEwen 14 June 2006, Senate of Australia Official Committee Hansard 2006, Senator Lyn Allison and Senator Helen Coonan 2006).

These reports were subsequently taken up by the Australian media with headlines such as of “Papuan bringing diseases to North” of Australia (Parnell 11th June 2007).

As well, published Queensland Department of Health surveillance data reported that between 2000 and 2006, of the 60 PNG TB patients crossing from the Western

Province of PNG to seek treatment in Australian Torres Strait Health Centres, 15 had MDR-TB (Gilpin, Simpson et al. 2008), an increase in the proportion of TB patients with MDR-TB from 6.8% (1998 to 2002) to 25%. Again this was taken up by the Australian media who dramatically reported a “Threat from PNG patient flood”(Parnell 1st March 2008). These media reports about TB in the Torres Strait of Australia followed reports in 2007 about HIV infections in male Australian tourists and workers returning from PNG (Elliot 2008).

### **8.10 AusAID support for TB Control in PNG**

So, by 2006 the Australian policy with regard to TB control in PNG had become much more supportive. By 2006 Australia not only agreed to fund WHO technical support, i.e. Dr Yadav, but also to support Dr Anastasios Konstantinos, Director of TB services for the state of Queensland as a consultant to assist in the preparation of the 2006 GFATM PNG TB DOTS Round 6 Grant Application:

*“We (AusAID) also assisted acceptance by the Global Fund of a reformulated US\$20.8 million grant proposal for tuberculosis control”(AusAID 2006) page 8*

### **8.11 Conclusion**

PNG was dependent on foreign aid to fund essential health services. There was also low health policy capacity in PNG generally, and in the National Department of Health in particular, to develop PNG specific evidence based health policy. This meant that aid donors, along with those international agencies with existing so called “evidence based” health policies, combined with advocacy skills, became and were significant policy actors in the health policy process in PNG. Australia was a major policy actor in the PNG health sector by virtue of the size of its aid to the sector. Further, Australia



had an emerging, or re-emerging, policy problem with an increase in TB cases crossing its common border with PNG in the Torres Strait of north Queensland. WHO, whilst not a major aid donor, had a ready-made TB control policy, TB DOTS, and the ability to advocate for this policy using WHO policy entrepreneurs to provide policy solutions to TB as a policy problem. Finally the Global Fund to fight AIDS, TB and Malaria (GFATM) emerged in the early 2000s with an ability to mobilize significant levels of funding to support AIDS, TB and Malaria projects in developing countries. It emerged at a time when the largest bilateral aid donor to PNG, Australia, was looking for new funding mechanisms as its policy on aid delivery to PNG evolved. These global and regional policy actors provide an important part of the regional and global policy context for us to now describe and critique the agenda setting process for the 2006 PNG TB DOTS policy at the PNG level in the next chapter.

The policy agenda setting process for the 2006 PNG TB DOTS policy takes place at two levels – a global level, and a PNG level. These are quite different and distinct processes. The influence of the global policy actors – WHO, the Global Fund, and Australia in the agenda setting process far outweighs that of the NDOH and PNG political level policy process. PNG is dependent on foreign aid to fund essential health services. There is low capacity within the National Department of Health, as well as at the Provincial and District levels of government to formulate, fund or implement a PNG specific, evidence based health policy.

The narrative about the 2006 PNG TB DOTS policy process as presented in the 2006 PNG TB DOTS policy documents is one of a unitary process which takes place wholly within PNG. This research demonstrates that this is not the case. The PNG part of the

agenda setting process is truncated and cut off, as the key policy decisions are actually made at the global level.

The three policy streams actually come together and a policy window opens at the global level that result in the 2006 PNG TB DOTS policy coming onto the PNG health policy agenda. The events at the PNG level by which TB DOTS comes onto the policy agenda are secondary to and would not have occurred except for this global agenda setting process.



## **9 Agenda Setting, Policy Actors and Policy Process PNG TB DOTS Policy 2004-2006**

### **9.1 Introduction**

The global agenda setting process for the 2006 PNG TB DOTS Policy involved three key international policy actors who brought the three policy streams together in 2006.

Firstly, Australia had an emerging TB policy problem with Papua New Guinean TB patients crossing the Torres Strait border to seek treatment in Australian Clinics.

Secondly, WHO had an “evidence based” policy solution, TB DOTS, which it was advocating as the policy solution to a global TB emergency. Thirdly, the Global Fund, established in 2002, was successfully mobilising significant funds, including Australian funds, for TB control in developing countries. It was the combination of these three policy actors, the events within these groups and organizations, and their positions of power in relation to health policy in PNG, which opened a policy window at the global level for TB DOTS to come onto the PNG Health policy agenda in 2006.

However, from 1997 to 2006 TB was not a health policy priority for the PNG Government or National Department of Health. The National Health Plan 2000-2010 (GovPNG 2000) explicitly states that HIV and malaria are the health policy priorities. As such HIV and malaria were the main focus of international donor aid to the health sector for technical assistance and aid funding.

Despite this from 2004 to 2006 TB control policy underwent an intensive and active agenda setting process that brought TB DOTS onto the health policy agenda by the end

of 2006, with TB being declared a “national emergency” by Sir Peter Barter, the Minister for Health and HIV.

For analysis we continue to use the multiple streams policy agenda setting framework (Kingdon 2011) as applied in recent global agenda setting research (Walt and Gilson 1994, Buse, Mays et al. 2006) which identifies three policy streams – the problem stream, the policy stream and the politics stream, which come together in a policy window for the policy to come onto the policy agenda. It is the part of the agenda setting process which takes place within PNG from 2004-2006 which we analyse in this chapter. We describe and critique how the global agenda setting process and the power exerted by global policy actors on PNG health policy brings TB DOTS onto the health policy agenda in 2006.

## **9.2 Policy Entrepreneurs in the PNG TB DOTS Policy agenda setting process**

Central to this analysis is the role of three so called *policy entrepreneurs*. Buse defines policy entrepreneurs as “key players who work to link particular policy “solutions” to particular problems and at the same time create the political opportunity for action” (Buse, Mays et al. 2006).

In the 2006 TB DOTS agenda setting process the first policy entrepreneur was Dr Paul Aia, a Papua New Guinean medical graduate who had been the Communicable Disease Control Officer in Western Highlands Province and who in 2004 was promoted to the position of Director of the National TB Control Program in Port Moresby. As such Dr

Aia had primary and line responsibility for all matters relating to TB Control Policy in PNG(Konstantinos - Interview 7th May 2008, Adepybi - Interview 12th April 2008).

The second was Dr Rajendra Yadav who was appointed WHO Country Medical Officer (Stop TB), PNG, in September 2004, and held this position until October 2009. Dr Yadav came from the position of Consultant (Revised National TB Control Program) for WHO in India. He worked on the Indian TB Control Program from October 1999 to July 2004, acquiring extensive experience in implementing TB DOTS. He was known as a hardworking and efficient manager. Dr Yadav was the WHO Technical Adviser to Dr Aia(Konstantinos - Interview 7th May 2008, Adepybi - Interview 12th April 2008).

The third was Dr Anastasios Konstantinos, Director Queensland Health State TB Control Centre, who undertook a short term consultancy from January to February 2006. As Director of the Queensland TB Control Centre, Dr Konstantinos was responsible for the TB Control Services in Queensland, the Australian State that shares a common border with PNG, in the Torres Strait of north Queensland. He was an expert in TB DOTS, overseeing its implementation in Queensland. He also oversaw the treatment of those PNG Western Province TB patients who were crossing the Australian – PNG Torres Strait border to seek treatment in Queensland Department of Health Clinics. So not only was he very much aware of the increasing numbers of PNG TB patients crossing the border, but also of the emergence of MDR-TB in these patients(Konstantinos - Interview 7th May 2008, Gilpin, Simpson et al. 2008).

Both Dr Yadav and Dr Konstantinos were employed with funds provided by Australia, either directly by AusAID in Dr Konstantinos case, or through WHO in Dr Yadav's case (Konstantinos - Interview 7th May 2008).

A close examination of these three actors, their relationship to each other, and their interactions with donor agencies, especially AusAID and the Global Fund, is central to understanding how TB DOTS came onto the policy agenda in PNG, and about the broader PNG TB DOTS policy process from 2004 to 2008.

### **9.3 The Problem Stream – TB in PNG**

According to the multiple streams framework (Kingdon 2011) of the three independent policy making streams which flow through the policy system all at once, each with life of its own' the *problem stream* is made up of the multiple policy problems confronting society and government from which one particular policy problem becomes of sufficient importance to receive the attention of policy makers. "*Policy makers learn about problems through indicators, feedback from existing programmes, pressure groups, or sudden focusing events such as crises i.e. the perception of problems as public matters requiring government action.*" (Buse, Mays et al. 2006). We now deal with how TB was perceived and dealt with as a policy problem in the years leading up to 2006, how it moved from not being identified as a priority disease to become a so called Tier 1 health policy problem. What was the process by which this major change happened, and who were the major actors in this process?

### 9.3.1 **TB NOT a Tier 1 Priority Disease in PNG**

Applying the multiple streams framework, TB was not receiving attention as a health policy problem in the period leading up to 2006. In the PNG National Health Plan 2000-2010 (GovPNG 2000) HIV and malaria were identified as the two, so called Tier 1, priority disease control programs. In the National Health Plan it notes that HIV incidence cases were increasing rapidly, and that malaria was the commonest presentation to health facilities in the period leading up to the development of the Plan. As such HIV and malaria were the Tier 1 priority diseases for GovPNG recurrent funding and donor aid to the health sector. As a Tier 2 disease TB did not receive any significant funding, i.e. only small amounts of GovPNG recurrent funding were allocated to TB, nor was it a priority for donor aid (Konstantinos - Interview 7th May 2008, GovPNG 2000).

### 9.3.2 **Successful PNG GFATM Grant Applications for Malaria (Round 3), and HIV/ADS (Round 4)**

HIV and malaria were the two policy problems dominating the health policy problem stream and receiving political attention. A 2003 \$US20m Round 3 GFATM Grant *Community-based Malaria Prevention and Control in Papua New Guinea - Nationwide Insecticide-treated Nets (ITN) Distribution and Expansion of Confirmed Diagnosis and appropriate treatment of Malaria (Aug 2004 to 31<sup>st</sup> July 2009)* was approved (GFATM 2004). A 2004 \$US17.5m Round 4 GFATM Grant *Scaling up HIV/AIDS prevention, care and treatment through an intensified multi-sectorial community-based programme in Papua New Guinea (1<sup>st</sup> Sept 2005 to 31<sup>st</sup> August 2010)* was also successful (GFATM 2004).



Both the 2003 Malaria and 2004 HIV/AIDS GFATM Grants included a broad representative range of sub-recipients in the Grants. The Malaria Grant Application included several private sector and NGO sub-recipients, most notably Rotary Against Malaria (RAM), who had a strong track record in implementing malaria bed net programs in other parts of the world(GFATM 2004). Likewise, with the HIV Grant Application the principal recipient was the National Aids Council, which was based outside the National Department of Health, and was directly responsible to the Prime Minister's Department. This 2004 Round 4 HIV Grant application had also included Faith Based Organizations and NGOs who had strong track records over several years in carrying out HIV activities in PNG, especially in rural PNG where the majority of the PNG Population lives(GFATM 2004).

### **9.3.3 Rejection of 2005 Round 5 GFATM PNG TB DOTS Grant Application**

Despite TB being a Tier 2 disease in 2005 the National Department of Health submitted a GFATM Round 5 Grant application for funding to implement a PNG country wide TB DOTS policy. However, the 2005 Round 5 TB DOTS Proposal was rejected by the Global Fund. The Global Fund's reasons for this rejection included(Konstantinos - Interview 7th May 2008, Adepoybi - Interview 12th April 2008, PNG CCM 2006):

1. As TB was not a Tier 1 priority disease, and so not being given policy or funding priority by the PNG Government and NDOH, it was not a priority for donors i.e. TB was not on the policy agenda in PNG.
2. There was a lack of capacity to deliver a TB DOTS Program within the National Department of Health (NDOH), and through the PNG National TB Control Program in particular.

3. There was no actual PNG TB Control Strategic Plan or Strategy in place in 2005 that could be submitted as supporting evidence that the existing, though limited, TB DOTS pilot programs had been effective in the PNG context.
4. The Round 5 Grant application did not include Grant recipients other than the National Department of Health (NDOH), and did not demonstrate a wide consultation with and inclusion of, other stakeholders involved in TB control in PNG.
5. The application needed to include and be seen to carry out joint TB/HIV activities.

The low priority of TB was further demonstrated in the 2005 Strategic Plan for the PNG Health Sector 2006-2008(Mann 2006), with four Strategic Directions for the NDOH in the period 2006-2008:

1. Fully immunize every child under 1 year;
2. Reduce malaria prevalence in districts with high endemic malaria;
3. Reduce maternal mortality in the districts with high maternal deaths; and
4. Reduce the rate of increase in HIV and STI.

These priorities were based on outpatient attendances and the main causes of mortality in PNG health facilities. This demonstrates that as late as 2005-2006, a national TB DOTS Policy was not one of the NDOH four strategic policy priorities.

During his consultancy visit to PNG in January and February 2006, Dr Konstantinos confirmed that *“TB wasn’t recognised as being in the first level of importance in the PNG government at the time ... There was a Tier 1 and a Tier 2 (classification of priority diseases) and TB was in Tier 2, so it wasn’t in the highest level of importance ... for the*

*national health program. Because it wasn't given a Tier 1 priority in the Health Department it wasn't supported by AusAID in getting Global Funds.”(Konstantinos - Interview 7th May 2008)*

Both the Global Fund and AusAID would and could not fund a TB DOTS Program in PNG whilst it remained a lower disease control priority for the PNG Government and NDOH. International donors were directing all funding to the two Tier 1 diseases – HIV and malaria. TB remained a Tier 2 Disease in PNG until mid-2006.

#### **9.3.4 Lack of Capacity within NDOH and NTP to formulate and implement a TB DOTS Policy**

A major factor for TB not being a Tier 1 disease in PNG was a poorly functioning

National TB Control Program (NTP). In January and February 2006, Dr Konstantinos found a circular argument in place in PNG, as well as amongst donor agencies. *“The big reason it (TB) wasn't put into Tier 1 is because the (TB Control) program wasn't functioning. There was also this circular argument that we can't put it into a Tier 1 unless the (TB Control) program is functional, and that was the big reason.”(Konstantinos - Interview 7th May 2008)*

Dr Konstantinos found a lack of capacity and poor management within the NTP. *“Dr Aia is the actual Director of the TB program so he has to sign everything off in the end ... I got the impression that there was a marked lack of advocacy (leadership) in the TB program, it simply could be that Dr Aia just wasn't a strong enough advocate or it could be that he didn't have the system behind him, whatever the cause. I think that when things went wrong it was sort of “what can I do.”(Konstantinos - Interview 7th May 2008)*

Only a few months before Dr Konstantinos' findings, the PNG Health Sector (SWAp) Independent Monitoring and Review Group (IMRG) had also found and expressed a deep concern about the capacity of the PNG NTP. *"Tuberculosis control is poor in PNG. The DOTS programme started in 1997 currently covers only 64 health facilities in 15 provinces. Programme data are not timely, are incomplete and not very reliable. Overall NDOH's TB Unit is weak and unfocused, which might be one of the reasons why GFATM is not yet supporting tuberculosis control activities in PNG. NDOH needs to consolidate its current DOTS pilot provinces and make these work, BEFORE it attempts to expand to the whole country. The fear is that expanding a non-functioning model to the entire country will just be a waste of money"* (Research Field Notes November 2005)

A lack of capacity within the NDOH to manage and acquit a Global Fund Grant was a further reason for the rejection of the Round 5 GFATM application. *"The government had originally applied to the Global Fund to get the money itself, but Global Fund said: "No, you don't have the capacity to manage and acquit those funds ... the Department of Health is not transparent, we won't give you the money."* (Adepybi - Interview 12th April 2008)

As has been noted the capacity to develop and implement Health Policy within the PNG government, and particularly in the NDOH was very limited. In 2006 meetings of the NDOH Executive Committee, where final decisions about health policy should take place, were not being held. There was poor communication between the NDOH Disease Control Branches and the Executive Branch. Relationships based on the wantok system took precedence over other relationships, with a high level of nepotism in appointments. Engagement with and by the Provincial and District levels in the

Policy Process was limited or non-existent. These fundamental structural governance constraints to a TB DOTS policy were identified as being central to why TB was a major health problem.

#### **9.3.5 Lack of a PNG TB Control Strategic Plan in 2005**

Further, at the time of submitting the Round 5 GFATM Grant application, there was no written PNG TB Control Strategic Plan that demonstrated a strategic approach that would be taken to control TB in the next five years. Also there had been no Situational Analysis, drawing on the pilot TB DOTS projects which had been underway in Lae and the National Capital District since 1997, in order to document that a TB DOTS Policy could be successfully implemented. This lack of a clear and detailed strategic approach to TB control is clearly acknowledged in the 2006 *Country Status Report of the National TB Program 1997-2005*(Aia, Yadav et al. 2006), and *Country Strategic Plan to Stop TB 2006-2010*(Aia, Yadav et al. 2006).

#### **9.3.6 Need to include a broader group of Grant Recipients**

In the Round 5 PNG TB DOTS GFATM Grant application the NDOH was the principal and sole recipient of the grant. There were no community, NGO or private sector sub-recipients to work with the NDOH in implementing a TB DOTS program throughout PNG (Aia, Yadav et al. 2006). The GFATM Grant process clearly indicates the need for a multi-sectoral and community inclusive approach to implementing GFATM Grants as a requirement for GFATM applications as set out in the GFATM Guiding Principles (GFATM 2001).

The rejection of the 2005 Round 5 PNG TB DOTS application was itself an indication of the low level of leadership combined with a lack of understanding of the Global Fund requirements for Grant applications.

#### 9.3.7 The Re-Framing of TB as a Policy Problem in PNG

The first step needed to get TB on the policy agenda in PNG was to re-frame TB as major health policy problem in PNG in order to convince the key actors at the politics level in PNG.

When the Round 5 PNG TB DOTS GFATM Grant was unsuccessful, Dr Yadav took the lead in reframing TB as a policy problem in PNG (Konstantinos - Interview 7th May 2008, Adepybi - Interview 12th April 2008). He recognized the need to address each of the reasons given for the rejection of the Round 5 PNG TB DOTS GFATM application.

The *Country Status Report of National TB Control Papua New Guinea 1997-2005* (Aia, Yadav et al. 2006) was developed following the Global Fund rejection as *the* statement of TB in PNG as a health policy problem demanding a policy response. A 31 page document, the Country Status Report provides a clear statement of the very high burden of TB in PNG, with PNG having the third highest incidence, prevalence and mortality rates from TB in the WHO Western Pacific Region. *“According to the WHO’s estimates (2004), among the 36 countries and areas of the Western Pacific Region of the WHO, Papua New Guinea (PNG) ranks third in terms of estimated incidence, prevalence and death rates (233/100,000 per year, 448/100,000 and 42/100,000 per year, respectively).”* (Aia, Yadav et al. 2006)

Further, it is important to note that the Report also places the high burden of TB in PNG as a regional health policy problem justifying a policy response and funding from regional neighbours, and that addressing TB in PNG has a regional benefit.

#### **9.3.8 The Success of Pilot TB DOTS in Lae & National Capital Districts**

The Report then goes further to assemble evidence suggesting that TB DOTS had, in the period from 1997 to 2005, been successfully implemented in the National Capital District and Lae District, quoting cure rates of up to 88%(Aia, Yadav et al. 2006). It was a statement that TB DOTS could be successfully delivered in PNG, thus providing an evidence-based policy solution to TB as a policy problem.

#### **9.3.9 Existing Constraints to a TB DOTS Policy can be overcome**

The Country Status Report acknowledges the quality of TB DOTS pilot projects in Lae and National Capital District had been poor.

However, the Status Report conveys that existing constraints in the PNG Health System could be overcome with sufficient staff and funding. *“The quality of DOTS implementation has generally been poor in most of the districts, partly due to lack of adequate funding and staffing (leading to poor supervision and training) and partly due to poor geographical accessibility, exorbitant cost of travel and poor communication networks.”(Aia, Yadav et al. 2006)*

#### **9.3.10 Leadership of the PNG National TB Control Unit (Program)**

The Country Status Report also attempted to convey that despite the concerns raised there was effective leadership in the NTP capable of delivering a National TB DOTS Program. *“Over the past 7-8 years (1997-2005), the NTP Unit (National T B Program*

*Unit) has introduced the DOTS strategy in several provinces of the country, by conducting a series of provincial level training. As a result, health facilities from 38 districts (out of the 87 districts of the country) had started reporting under DOTS, until 2005. The population coverage with DOTS was about 47%, based on quarterly reports received.”(Aia, Yadav et al. 2006)*

#### **9.3.11 Authorship of the Country Status Report of National TB Control PNG**

The authors of the Country Status Report are Dr Paul Aia, NTP Manager, NDOH, Dr Rajendra Yadav, Medical Officer, TB, WHO-PNG, and Dr Anastasios Konstantinos. It was crucial that Dr Paul Aia was the first author, so that at the politics level in PNG, the PNG Director of the National TB Control Program is seen to be articulating TB as a major health problem. It was also important that Dr Konstantinos, who has credibility with AusAID on TB control policy, was also included as an author and supports the document as the statement of TB as a policy problem, to ensure AusAID and thus the Global Fund, accept the Country Status Report as a true representation of the policy problem.

In summary the Country Status Report presents TB in PNG as a major health problem that must be addressed. The Status Report presents this as a problem that the National TB Control Program in the National Department of Health has the capacity, with sufficient funding and human resources, to address with a national TB DOTS Policy. It was a clear statement of the policy problem as well as pointing to TB DOTS as a viable policy response or solution.



### 9.3.12 **What the PNG Country Status Report National TB Program PNG 1997-2005 Doesn't Deal With - Omissions**

The Country Status Report presents TB as a major health problem. However, the policy problem was not simply a high burden of TB. Central to the policy problem were the governance, lack of political leadership and health system challenges faced in health service provision in PNG that were major factors in a high burden of TB.

These major structural governance policy problems will not be addressed by simply providing more donor human and financial resources.

The fact was that by 2005 the PNG Health System had been declining, and was continuing to do so significantly; over 40% of APs, the backbone of the PHC System had closed. APs were the obvious means of undertaking DOT, a central component of TB DOTS. Drug supply was irregular and inconsistent. Due to the Organic Laws there was no accountability, in fact a disconnection, between the NDOH and the Provincial and District Health Services. There was a lack of political commitment and leadership at the National, Provincial and District levels to address these fundamental structural constraints. There was low level of leadership capacity in the National Department of Health, within the National TB Control Program, and down to the Provincial and District Health Service levels. Underlying the problem was the wantok system of patronage and nepotism in appointments at the political and health system levels resulting in institutionalized incompetent leadership and management capacity and corruption. These were actually central and key components of the TB problem. If TB was to be addressed to ensure sustained reductions in TB prevalence and incidence these structural governance constraints must be identified as central to the policy problem and addressed in any policy response.

### 9.3.13 Dr Anastasios Konstantinos - Key Findings about the PNG Health System

Dr Anastasios Konstantinos, The Director of the Queensland TB Control Centre, was engaged as a consultant by AusAID to assist the NTP to review and report on the status of PNG's current TB control program, i.e. the *Country Status Report of the PNG National TB Program 1997-2005* (Aia, Yadav et al. 2006), as well as to contribute to writing a strategic plan for TB control in PNG, namely the *Country Strategic Plan to Stop TB 2006-2010* (Aia, Yadav et al. 2006). He visited PNG from 23 Jan 2006 to 3 Feb 2006.

During the interview with Dr Konstantinos for this research, it was apparent that he was aware of the fundamental governance, cultural institutions and major health system constraints to health policy formulation and implementation in PNG.

Dr Konstantinos found that the TB Control Program was not functioning because of the entrenched cultural institutions and governance structures in PNG – wantokism with patronage and nepotism. *“There are a lot of issues in PNG ... -The wrong people seem to be promoted in PNG. And you have this whole Wantok system in PNG where people have their allegiances to their villages rather than national strategy, they are all things that make it a little bit complex, but at the end of the day the TB program was defeated by the system”*(Konstantinos - Interview 7th May 2008).

Dr Konstantinos found that governance and accountability for funds at the Provincial level was very weak. *“There are a lot of issues in PNG - you have the issues on how the money is fed down to the provinces, at the national level they do have (TB) strategies,*

*but the funding goes to provinces in block, they don't get funding specifically for the TB program for instance" (Konstantinos - Interview 7th May 2008).*

He also identified the need for strong and determined leadership and political commitment to overcome these major cultural institutions and governance constraints. *"The thing is with political commitment, you almost need to be bloody minded I think. You need to keep driving home the message, you need to drive home to the provinces they should be spending their money on TB and sometime it seems like you are bashing your head against a brick wall. As far as I could see, the national TB program in PNG had been defeated by that whole process"(Konstantinos - Interview 7th May 2008).*

Dr Konstantinos found that at the periphery there were dedicated health workers. *"The thing I noticed in PNG is you have a very dedicated peripheral group of workers when you go to the peripheral communities and they all see TB as one of their major priorities, they are very dedicated but they quickly become demoralised because somewhere in the middle it (support, medications, funding) seems to all dissipate."(Konstantinos - Interview 7th May 2008).*

Another central finding by Dr Konstantinos was the lack of a basic functioning Primary Health System. *"You need ... a good Primary Health Care system. And I think that's a fundamental thing that is lacking in PNG, I think people undervalue how important it is to have a good primary health care system where people have access to care and where people start to have some positives from attending a health care system so that they have more faith in it." (Konstantinos - Interview 7th May 2008)*

There is no point in creating awareness of the symptoms of TB within the community when the community does not actually have a health system to which they could present when they have symptoms. In Western Province he found *“there are few HCs and APs, they are very poorly manned and their upkeep is poor. It’s very hard to sell a health message where you are wanting to diagnose people with infectious TB when there is no Health Centre for those people to access and there is no diagnosis ... the whole issue is they have got nowhere to present.”*(Konstantinos - Interview 7th May 2008)

He saw a TB DOTS Program, if done well, could help deliver this PHC system. *“I really tried to push hard the message of the importance of TB control in PNG, both from the effect on disease, but also as a mechanism of introducing a primary health care structure in the country, if you do it well.”*(Konstantinos - Interview 7th May 2008)

However, these significant constraints identified by Dr Konstantinos are not addressed in detail in the Country Status Report as being *the* fundamental policy problem in the provision of a TB control program. This was because Dr Konstantinos himself was drawn between presenting his observations and following Dr Yadav’s instructions. *“Dr Yadav wanted the picture painted very positive”.* (Konstantinos - Interview 7th May 2008)

#### **9.3.14 AusAID Knowledge of the PNG Health System**

In Dr Konstantinos’s eyes, AusAID lacked an understanding that a TB DOTS program needs an effective health system to deliver a TB DOTS Program. AusAID advocated for raising community awareness about TB and its symptoms, and the need to present to a HC or AP with the symptoms of TB. However, *“that was one of the things that I struck*

*in PNG with ... the funders of the aid programs there, I even got this impression from AusAID, it was an impression that you should be doing more to make people aware of the symptoms of TB so that they can present, but the whole issue is they have got nowhere to present, and they've got no treatment.”(Konstantinos - Interview 7th May 2008)*

He found a lack of awareness in AusAID of the lack of a basic PHC system in PNG.

*“While I was there I did a lot of emailing back and forth to AusAID and I tried to redirect the way they support the TB program. I was critical of their focusing on education programs to make people present earlier for TB treatment when there was nothing for them to present to. I argued strongly that it's important to develop a DOTS program in PNG because you need to develop a primary health care system anyhow.”*

(Konstantinos - Interview 7th May 2008)

In summary the Country Status Report frames TB as being a major health policy problem demanding attention at the political level. It does makes reference to the major structural governance constraints, which have been fundamental to PNG having an extremely weak health system with poor health outcomes, including a high burden of TB, resulting in limited capacity to deliver a national TB DOTS policy. The Country Status Report does not deal with these fundamental constraints for a national TB DOTS policy, but rather implies that these fundamental constraints can be overcome simply with sufficient funding and human resources. Further there was a seeming lack of understanding of the actual state of the health system, and the need for a well-functioning health system to deliver a TB program on the part of the major aid donor.

#### 9.4 The Policy Stream – Solution to the Policy Problem of TB in PNG

We next examine how TB DOTS became the policy solution to the now identified problem of a high burden of TB in the Status Report. When applying the Multiple Streams Framework analysis of agenda setting the policy stream consists of “*the ongoing analyses of problems and their solutions together with the debates surrounding their proposed solutions.*” (Buse, Mays et al. 2006). We now examine how, from the different TB control policy options TB DOTS became the preferred policy approach in PNG in 2006. We will see that rather than this being the policy approach which had the greatest evidence of successful implementation in the PNG context, it was more the background and expertise in TB DOTS of two central policy entrepreneurs, and the power of the international groups they represented in the policy process which lead to this outcome. We describe and critique the role of the key policy entrepreneurs in the 2006 TB DOTS agenda setting process.

*The Country Strategic Plan to Stop TB Papua New Guinea 2006-2010 (Aia, Yadav et al. 2006)* was the statement of TB DOTS as *the* policy response and solution to the high burden of TB identified in the Country Status Report. A 55 page document, the Country Strategic Plan provides a detailed outline of the process which took place in PNG in 2005 and 2006 resulting in TB DOTS becoming a Tier 1 disease and moving onto the policy agenda. It also outlines in detail the content of the national TB DOTS policy with specific goals and objectives. Further, it also provides details of the funds required, and the inability of the PNG government recurrent budget to fund a national policy rollout.

#### 9.4.1 Actors, Policy Entrepreneurs and the TB DOTS Policy Process

The relationship between Dr Paul Aia, the Director of the National TB Control Program, and Dr Rajendra Yadav, World Health Organization Country Medical Officer (Stop TB) PNG, as a WHO Technical Adviser, was crucial in the development of the Country Strategic Plan.

As Director of the NTP it was Dr Aia on whom Sir Peter Barter, the then Minister for Health and HIV, would rely for advice on TB control policy. Without Dr Aia's approval, development of a TB DOTS policy could not take place. However Dr Aia depended on Dr Yadav for technical expertise. *"Dr Aia is the actual Director of the TB Program, so he has to sign everything off in the end. I think that in principle you will find that he relies heavily on the support work done by Dr Yadav for him to sign off on things."*

(Konstantinos - Interview 7th May 2008). Also *"(Dr Yadav's) technical advice, I think it's of a high standard. And I don't like to imagine how the (PNG TB Control) program would be without the WHO technical component."* (Adepyobi - Interview 12th April 2008)

It is apparent from this research that the person who actually drove the policy process, and developed and wrote the Strategic Plan, was Dr Yadav. *"He (Dr Yadav) took the lead, essentially I went up and we discussed the National Plan, what was needed, I produced a report for AusAID and that report was also used, he also sourced that report for input into his National Plan, I think I would have to give him credit for being the main person who developed that Plan and I gave him some support of some consultation."*(Konstantinos - Interview 7th May 2008). Also *"that consists at the national level Dr Yadav doing everything, by providing all the Policy (directions) even*

*the Strategic Plan (PNG Country Strategic Plan to Stop TB 2006-2010). There are a lot of people's names down on that but I know it was Dr Yadav that did it.*" (Adepybi - Interview 12th April 2008)

However, as a Technical Adviser Dr Yadav had to take a much nuanced approach to achieving the goal of getting TB DOTS onto the policy agenda generally, but especially with Dr Aia. *"I think the difficulty with Dr Yadav is that he can't be seen to be the one who is in charge, in fact if he is seen to be the one in charge it will make his work a lot harder, he will be slapped over the wrists for interfering, so I think it's a very difficult role he's playing, so his way around it is to humour the current management, as much as possible, so they will sign off on the things that are needed."* (Konstantinos - Interview 7th May 2008)

It was Dr Yadav who recognized that each of the issues that had resulted in the rejection of the 2005 Global Fund PNG TB DOTS grant application needed to be addressed to maximize the chances of success with a subsequent application (Konstantinos - Interview 7th May 2008, Adepybi - Interview 12th April 2008). This meant:

1. TB needed to become a Tier 1 disease for the National Department of Health and Government of PNG if a future Global Fund Grant application was to be successful. To this end Dr Yadav's relationship with Dr Paul Aia was crucial in establishing within the PNG politics stream that TB was indeed a major health policy problem.
2. A TB policy needed to demonstrate leadership and capacity within the NTP to implement a national TB policy.



3. There was a need to document that a broad based stakeholder consultation for developing a TB DOTS policy had taken place, and also that stakeholders were part of a future Global Fund Grant application.
4. The policy needed to include and be seen to carry out joint TB/HIV activities.
5. There needed to be engagement with, and endorsement by, the key international policy actors in a TB DOTS policy, if a further future Global Fund application was to be successful.

The Country Status Report was written so as to address each of these issues.

#### 9.4.2 **Broad Stakeholder Engagement**

The Foreword to *The Country Strategic Plan to Stop TB 2006-2010* describes the genesis of a PNG TB DOTS Policy as arising from a “*a prolonged consultative process (which began in February 2005), involving major program partners as well as officers from the national and provincial governments*”(Aia, Yadav et al. 2006). The Strategic Plan makes no reference to the global actors and policy process which had been taking place at the global level and which had influenced and led to the PNG country level TB DOTS policy process.

The unsuccessful Round 5 Global Fund application had only the National Department of Health as the principal and sole recipient. If a further Global Fund Grant application was to be successful a new application needed to demonstrate engagement with, and ownership of, a PNG TB DOTS policy process by a much broader range of stakeholders.

The successful malaria and HIV Global Fund applications had included co-recipients credible to AusAID and the Global Fund. The 2003 \$US20m *Round 3 GFATM Grant for Community-based Malaria Prevention and Control in Papua New Guinea - Nationwide*

*Insecticide-treated Nets (ITN) Distribution and Expansion of Confirmed Diagnosis and appropriate treatment of Malaria (Aug 2004 to 31<sup>st</sup> July 2009)(GFATM 2004)* included as co-recipients Rotary Against Malaria (RAM) and the PNG Churches Health Services, representing the various Faith Based Organisations, which provide the majority of Health Services in rural and remote PNG. The \$US17.5m *2004 Round 4 GFATM Grant for HIV/AIDS -Scaling up HIV/AIDS prevention, care and treatment through an intensified multi-sectorial community based programme in Papua New Guinea* (1st Sept 2005 to 31st August 2010) (GFATM 2004) included the National Aids Council (NAC), which was outside the National Department of Health, as well as the Faith Based Organizations, as co-recipients.

In order to now demonstrate a similar broad stakeholder engagement in and support for a national TB DOTS policy, the Country Strategic Plan outlines four Stakeholder Meetings between February 2005 and August 2006. It was crucial that the NTP was seen to convene and coordinate these meetings in order to demonstrate and convey that the NTP had the capacity to formulate and implement a national TB control policy.

According to the Strategic Plan the TB DOTS policy process commenced with the first of these meetings the *TB Control Program Partners Meeting on 11<sup>th</sup> February 2005*. All groups involved with or potentially involved with a TB DOTS Policy in PNG were carefully documented as being in attendance at these meetings. The Strategic Plan refers to these groups as “Program Partners” from Government (NTP Unit, Disease Control Branch; TB Clinic, Port Moresby General Hospital; National AIDS Council Secretariat; PHO, National Capital District; HSIP (SWAp)); International Agencies (WHO and AusAID); NGOs (World Vision, Hope Worldwide, PNG National Doctors’ Association); and Faith Based Organizations (National Churches Council) (Aia, Yadav et

al. 2006). The Strategic Plan needed to establish that the TB DOTS policy came from the representatives of these bodies and was a consensus policy approach to TB control.

The next step in the process was to document engagement with, and agreement by, NDOH branches key to TB control. So the second *National Department of Health Intra- and Inter-Branch Meetings 15-22 March 2005* were a series of meetings held within the NDOH with the following units/branches - National TB Program Unit; Disease Control Branch; HIV/AIDS Unit; Health Promotion Branch; Central Public Health Laboratory; Monitoring and Research Branch; MSB; Human Resource Management Branch; Health Sector SWAp Program; and Health Budget Branch; and also National AIDS Council Secretariat (Aia, Yadav et al. 2006). The Strategic Plan documented the support of the technical groups within NDOH for a national TB DOTS policy.

The third *National TB Review Meeting and Workshop 21-23 March 2005* next brought all stakeholders together to form a consensus agreement on the Strategic Plan. Again all central stakeholders in TB control were present: *Representatives from 19 out of 20 provinces in PNG*; with representatives from government (Disease Control Branch; NDOH HIV/AIDS Unit; Health Promotion Branch; TB Clinic, Port Moresby General Hospital; National AIDS Council Secretariat ; UPNG School of Medical and Health Sciences); NGOs (World Vision; Hope Worldwide; National Doctors' Association; International Agencies (AusAID) (Aia, Yadav et al. 2006). It was emphasized, *in italics* that representatives of 19 of the 20 PNG provinces were present. This was an acknowledgement that the final decision about adopting and implementing a national TB DOTS policy rests with the provincial governments.

### ***Inclusion of HIV/AIDS Collaborative Activities***

The fourth meeting to discuss and formulate a *Draft Country Policy for Collaborative TB/HIV Activities*, held 10-11 August 2006 was nearly eighteen months after the three initial meetings. By 2006, WHO, in its new *Global Plan to Stop TB 2006-2010 actions for Life – Towards a World Free of Tuberculosis* (Stop TB Partnership and World Health Organization 2006), was emphasizing the importance of addressing HIV and TB in the one program, not as separate programs. As a result, by 2006, the GFATM was viewing favourably TB DOTS Grant applications that included at least a reference to collaborative TB/HIV activities (Feachem and Sabot 2007). This workshop was attended by stakeholders engaged in HIV and/or TB control with representatives from government (NTP, Disease Control Branch, TB Clinic, Port Moresby General Hospital, PHO, Eastern Highlands, Alotau General Hospital, Milne Bay Province, Angau General Hospital, Morobe Province, National AIDS Council Secretariat); international agencies (WHO, UNDP, UNAIDS, AusAID); and NGOs (Hope Worldwide, Anglicare, Family Health International (Aia, Yadav et al. 2006). Also it is important that Dr Fabien Ndenzako, Medical Officer HIV, WHO PNG, was included as a co-author of the Strategic Plan to flag that HIV was an important component of the Strategic Plan (Aia, Yadav et al. 2006).

#### **9.4.3 AusAID Engagement with the TB DOTS Policy Process**

Dr Yadav recognized the need to have AusAID agree, as the major donor to the health sector, to support a TB DOTS policy before the Global Fund would fund one. AusAID was invited to, and was the only donor present, at all of these meetings. We have seen that AusAID and the Global Fund had commenced working together to support HIV, malaria and TB programs in the Asia Pacific region (Downer 9th May 2006, Downer 10th May 2005). Dr Yadav recognized that there were concerns within AusAID

regarding funding the weak TB Program in PNG, and that someone who carried weight with AusAID was needed to convince AusAID that investing in TB DOTS in PNG would lead to beneficial outcomes both in PNG and in the Torres Strait Islands of Australia. That person was Dr Anastasios Konstantinos, the Director of the Queensland TB Services. *“It was Dr Yadav who pushed to have an AusAID consultant come up there, and I think there was some resistance in the (PNG) TB program to having an AusAID consultant involved. There was no real impression in the TB service, that I got, that AusAID was very supportive.”* (Konstantinos - Interview 7th May 2008)

Dr Konstantinos had no doubt about his own role, which was to produce a report to AusAID that would make a national TB DOTS policy acceptable to AusAID. He also had no doubt Dr Yadav was instrumental to, and the leader in the policy process for developing the TB DOTS policy (Konstantinos - Interview 7th May 2008).

#### **9.4.4 Authorship of the Country Strategic Plan to Stop TB 2006-2010**

The authors of the Country Strategic Plan are Dr Paul Aia, NTP Manager, NDOH, Dr Rajendra Yadav, Medical Officer, TB, WHO-PNG, Dr Anastasios Konstantinos, Director Queensland Control Centre, and Dr Fabian Ndenzako (MO-HIV/AIDA, WHO-PNG).

Whilst the process of developing the Strategic Plan was driven by Dr Yadav it was crucial that Dr Paul Aia was the first author. At the politics level in PNG, the Director of the National TB Control Program must be seen to be articulating TB as a policy problem, as well as being the person managing and directing this policy response process. It was also crucial that Dr Konstantinos, who had credibility with AusAID on

TB control policy, was included as an author and supported the Strategic Plan as *the* policy solution, to ensure AusAID and thus the Global Fund acceptance.

#### 9.4.5 Provincial Governments and the the Country Strategic Plan to Stop TB 2006-2010

The Provincial Governments' role within the policy process is also central. The introduction to the Strategic Plan states that the *"the provincial governments can use this national plan to design their own province-specific strategic plans."* (Aia, Yadav et al. 2006)

At Meeting 3 - *National TB Review Meeting and Workshop*, which was held by the NTP Unit on 21-23 March 2005, it is emphasized that *"Representatives from 19 out of 20 provinces in PNG"* (Aia, Yadav et al. 2006) attended the Meeting. However, the Strategic Plan fails to deal with the limitations of PNG's governance structure. The Provinces were not compelled to develop a Provincial Plan, nor are they required to actually participate in any way in the implementation of a Country Strategic Plan. All their health funding is received in a block grant from the National Treasury and can be expended on whatever the Provincial Government decides are its priorities. A national TB DOTS policy did not mean any of the Provincial Governments were compelled to spend these moneys on TB Control.

This significant limitation on implementation was not identified in the Status Report. The Strategic Plan also did not address these fundamental structural governance constraints.

As we have also already shown in detail, there is very limited capacity to develop health policy, even if there were a willingness to develop and implement a provincial

TB control policy. Further, there is little political commitment at the Provincial level to fund a health policy dealing with any major disease, should one be developed. There is no mechanism outlined in the Strategic Plan to overcome these fundamental governance constraints to implementing the Plan.

#### 9.4.6 **Consideration of Alternative TB Control Policies**

In the process of developing the Strategic Plan and also in the interviews for this research there is no consideration of alternative TB control policy approaches other than TB DOTS. The process was driven by a TB DOTS Technical Adviser, employed by WHO which was strongly advocating for TB DOTS. This policy approach was in turn endorsed by the AusAID consultant who had extensive experience in TB DOTS in northern Australia. Given this, alternative policy approaches to TB control and whether alternative approaches may or may not be relevant to the PNG context were not considered. This decision had already been made at the international level as we have examined in detail in the previous chapter. The policy actors and the policy process in that decision were at the international level – WHO, AusAID and Global Fund.

#### 9.4.7 **The PNG Stop TB / TB DOTS Policy - Content**

The PNG Country Strategic Plan outlines the content and goal, objectives and targets of the policy framework for TB control in PNG from 2006-2010.

Of the four components of the framework TB DOTS was the *first* and central component. The DOTS target was to detect 70% of smear positive TB cases; to achieve at least an 85% cure rate in those cases; and to achieve at least 80% population

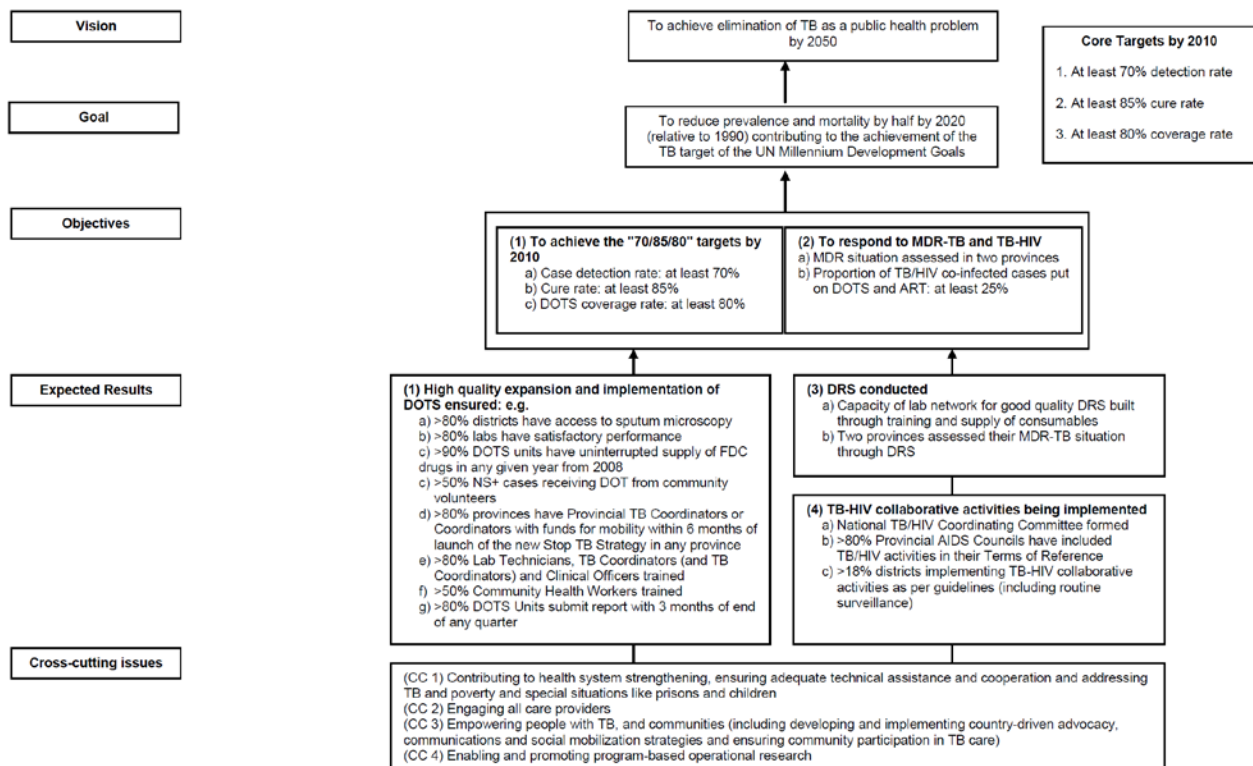
coverage with the TB DOTS Program, the so called 70/85/80 target, in the period from 2006 to 2010. (See Figure 6)

The other three components of the Country Strategic Plan to Stop TB 2006-2010 were:

2. Responding to MDR-TB and TB-HIV.
3. Conducting a Drug Resistance Survey (DRS), and
4. Implementing TB-HIV collaborative activities.

It states *“The Country Strategic Plan to Stop TB for 2006–2010 is ambitious but realistic. It is backed by sound analysis of the strategies, actions and resources needed over the next 5 years.”* (Aia, Yadav et al. 2006). There is no detail of the “sound analysis” on which the goals and targets are based.





**Figure 6 – Framework of the Country Strategic Plan to Stop TB for PNG (2006-2010)**

Note: Unless indicated, all targets are set for 2010

Source: *Country Strategic Plan to Stop TB for Papua New Guinea (2006-2010)* (Aia, Yadav et al. 2006) page 20

In fact the PNG *Country Strategic Plan to Stop TB 2006-2010* is based directly on and follows exactly the WHO *Global Plan to Stop TB 2006-2015 – Actions for Life - Towards a World Free of Tuberculosis* (see Figures 6 and 7) (Raviglione and Uplekar 2006, Stop TB Partnership and World Health Organization 2006). This Global Plan had at its core the 5 Components of Direct Observation, Short Course (DOTS). However, drawing on new *International Standards for Tuberculosis Care* (Tuberculosis Coalition for Technical Assistance 2006), and newly released WHO *Guidelines for the Programmatic Management of Drug-Resistant Tuberculosis* (WHO 2006), the WHO Global Plan also now included TB control activities that addressed multi-drug resistant TB, as well as strategies for delivering collaborative TB-HIV Services.

#### 9.4.8 Health Systems Strengthening

The Global Plan also emphasized the importance of Health Systems Strengthening. It stated that TB control policy is to *“Contribute to Health System Strengthening (by) actively participating in efforts to improve system-wide policy, human resources, financing, management, service delivery, and information Systems.”* (Raviglione and Uplekar 2006). It spells out that without strong and effective health systems, TB DOTS programs cannot be delivered and sustained (Stop TB Partnership and World Health Organization 2006).

The new Global Plan emphasized the importance of engaging and empowering people who have TB, and the communities they live in, as well as all care providers, government and non-government, in TB Control in developing countries. With the broadening of the previous WHO policy for TB control in developing countries to include MDR-TB, HIV/TB collaborative activities, health systems strengthening, and broader community engagement, the Global Plan became known as the “DOTS-Plus Strategy”.

## Vision

A world free of tuberculosis

## Goal

To dramatically reduce the global burden of tuberculosis by 2015 in line with the MDGs and the Stop TB Partnership targets

## Objectives

- Achieve universal access to high-quality diagnosis and patient-centred treatment
- Reduce the human suffering and socioeconomic burden associated with tuberculosis
- Protect poor and vulnerable populations from tuberculosis, TB/HIV, and MDR-TB
- Support development of new tools and enable their timely and effective use

## Targets

- MDG 6, Target 8
  - Halt and begin to reverse the incidence of tuberculosis by 2015
- Targets endorsed by Stop TB Partnership
  - By 2005: detect at least 70% of sputum smear positive tuberculosis cases and cure at least 85% of these cases
  - By 2015: reduce prevalence of and deaths due to tuberculosis by 50% relative to 1990
  - By 2050: eliminate tuberculosis as a public-health problem (less than 1 case per million population)

## Components

*Pursue high-quality DOTS expansion and enhancement*

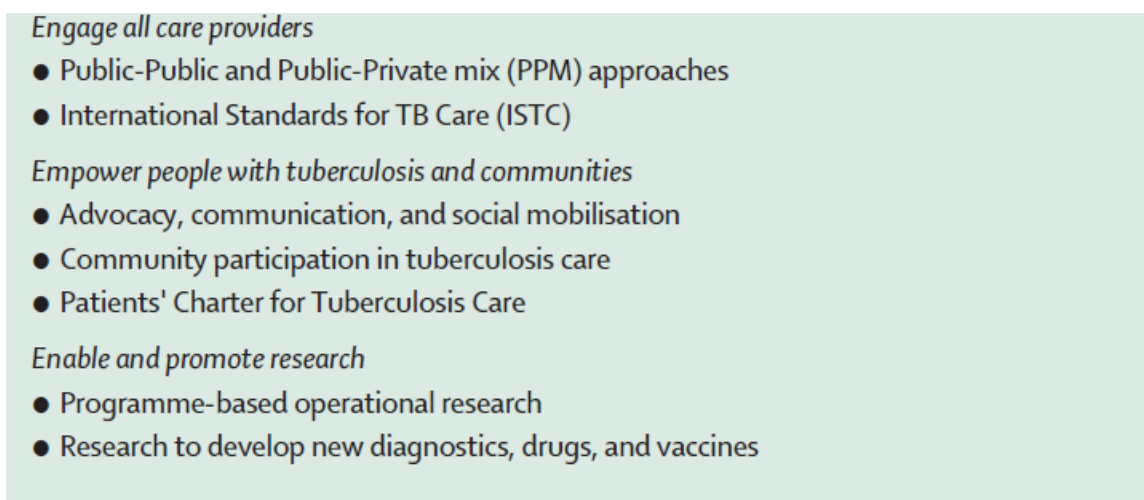
- Political commitment with increased and sustained financing
- Case detection through quality-assured bacteriology
- Standardised treatment, with supervision and patient support
- An effective drug supply and management system
- Monitoring and assessment system, and impact measurement

*Address TB/HIV, MDR-TB, and other challenges*

- Implement TB/HIV collaborative activities
- Prevent and control MDR-TB
- Address prisoners, refugees and other high-risk groups, and special situations

*Contribute to health system strengthening*

- Actively participate in efforts to improve system-wide policy, human resources, financing, management, service delivery, and information systems
- Share innovations that strengthen systems, including the Practical Approach to Lung Health (PAL)
- Adapt innovations from other fields



**Figure 7 – Global Plan to Stop TB 2006-2015**

*Source: (Raviglione and Uplekar 2006)*

Each Component in the Global Strategic Plan, with the exception of DOTS Component 1 - Political commitment with increased and sustained financing, had specific target indicators (see Figure 7). The PNG Strategic Plan did not provide any detail on the process by which the Global Plan was adapted, or on how the "measurable targets" were determined so they could be achieved in the period 2006-2010 (Aia, Yadav et al. 2006) (See Figure 6). It does not provide details as to how each component could be achieved in the complex geographical, cultural, social, and political, governance and health system mix that makes up the PNG context, and that had impacted on the PNG Health System's capacity to deliver health services.

With regard to DOTS Component 1 - Political commitment with increased and sustained financing, there is a very general statement. *"The National Government is committed to high quality expansion and implementation of DOTS because TB control is one of its top priorities among all health programs. The Government is committed to fostering sub-national, national and international partnerships, which will be linked to medium- as well as long-term strategic action plans to Stop TB. This medium-term*

*Country Strategic Plan aims to address technical and financial requirements and promote accountability for results at all levels of the health system.” (Aia, Yadav et al. 2006)*

Being explicit about how to address the governance blocks in PNG between the National, Provincial and District levels needs to be addressed in DOTS Component 1 which was particularly pertinent given the decentralized governance structures. There was no obligation on the Provinces and Districts to adopt a TB DOTS Policy. Funding was allocated to the Provinces as block grants, and TB DOTS funding was not allocated in such a way that those funds have to be spent on TB DOTS activities. The Country Strategic Plan does not set out strategies to address the political commitment required to make the governance changes that would ensure this happens.

Rather than identifying a lack of political commitment, governance, corruption and health system fragmentation as blocks the Strategic Plan only identifies the need for extra funding and human resources as the major constraints to be overcome for the TB DOTS policy to be successfully implemented in the 5 year period 2006-2010.

#### **9.4.9 Funding a PNG TB DOTS Policy**

In his introduction to the Country Strategic Plan Dr Nicholas Mann, the Permanent Secretary for Health, states that the Plan has two purposes: *“The primary aim of this plan is to share information with all stakeholders about the Stop TB Strategy that we plan to expand across the country in the next 5 years. In addition, the National Department of Health plans to use the plan to mobilize resources to Stop TB in the country.” (Aia, Yadav et al. 2006)* The Plan estimates the funds required for the

national implementation of the various components of the Plan as \$US25m (see Figure 8). This addresses the *increased and sustained financing* part of DOTS Component 1 - Political commitment with increased and sustained financing, whilst not addressing the understanding of political commitment in terms of the governance and health system structures necessary to deliver a TB DOTS policy.

Activity	Financial support required (in US Dollars)					
	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Human resources	753,042	1,085,117	1,514,206	1,952,161	2,382,021	7,686,548
Training	535,853	570,095	1,254,837	919,964	1,172,122	4,452,871
Infrastructure and equipment	335,345	338,924	483,231	531,794	621,950	2,311,244
Commodities and products	22,266	0	82,249	0	24,182	128,697
Planning and administration	931,736	1,066,483	1,839,100	1,556,794	1,834,947	7,229,061
Drugs	821,040	846,588	796,260	718,935	768,665	3,230,988
Total	3,399,282	3,907,207	5,969,883	5,679,648	6,803,887	25,039,409

**Figure 8 – Summary of Funding Needs for the Program for the next 5 years**

Source: Country Strategic Plan to Stop TB for Papua New Guinea (Aia, Yadav et al. 2006)

The Plan also states: *“If the level of funding through domestic and external non-GFATM sources remains constant in the next 5 years, the NTP Unit will receive only about US\$4.17 million over the next 5 years. Thus, the estimated funding gap is US\$20.87 million for the next 5 years. Full funding of the Plan is essential for the full implementation of the Stop TB Strategy and national achievement of the MDG and the WHO targets, as a step towards our vision of a TB-free nation, by 2050. The National Government will also seek these funds from the Global Fund to fight AIDS, TB and Malaria (GFATM) and other international donor agencies, as required.”* (Aia, Yadav et al. 2006) (see Figure 9). The Plan leaves no doubt that external Donor Assistance is vital. Without AusAID and the Global Fund, and their engagement in the PNG TB DOTS policy process, the PNG TB DOTS policy would not become a reality.

Activity	Financial support required (in US Dollars)					
	2006	2007	2008	2009	2010	Total
a. Funding available *	895,462	882,340	871,392	777,568	743,343	4,170,105
b. Funding required	3,121,032	3,664,681	5,770,158	5,679,648	6,803,888	25,039,407
c. Funding gap (b-a)	2,225,570	2,782,341	4,898,766	4,902,080	6,060,545	20,869,302

\* These are at current rates of fund availability, which seems to be declining in spite of increased commitments to staffing and operational costs in 2006 because of the 32% budgetary gap for procurement of drugs, which makes procurement unreliable. Hence, the expansion of the Stop TB Strategy requires external financial assistance for drugs.

### Figure 9 - Funding gaps for Country Strategic Plan to Stop TB for PNG 2006-2010

Source: Country Strategic Plan to Stop TB for Papua New Guinea (Aia, Yadav et al. 2006)

#### 9.4.10 Promised Impact of the Country Strategic Plan to Stop TB for PNG 2006-2010

The Strategic Plan promises that: *“Full implementation of the Plan will mean:*

- *5,000 – 6,000 additional lives will be saved in the next 5 years (2006-2010)*
- *the country will be closer to the TB target of the UN Millennium Development Goals (“to have halted by 2015, and begun to reverse the incidence of TB”) and those of the WHO (“to halve the prevalence and death rates in 2015 compared to the 1990 baseline”)*

*This is an ambitious but realistic scenario if the required resources (especially, funding and staffing) can be mobilized. “ (Aia, Yadav et al. 2006)*

This promise of significant numbers of lives saved makes a national TB DOTS policy very attractive to the politics level in PNG as a policy solution to the high burden of TB, if the donor funds can be sourced to implement the policy. It is the statement of the high burden of TB in the Country Status Report which establishes TB as a major health problem. The Country Strategic Plan outlines a TB control policy which provides a policy solution with the promised saving of 5,000-6,000 lives in 5 years as well as helping to achieve the MDGs. Applying the Multiple Streams Framework the problem stream and policy stream are now aligned.

In summary, whilst it does bring the problem stream and policy streams together the content of the *PNG Country Strategic Plan to Stop TB 2006-2010* was written to achieve the goal and targets of the WHO *Global Plan to Stop TB 2006-2015*. It was written from the global TB control policy perspective, not from a perspective asking which TB control policy with a realistic and achievable goal, objectives and targets, was best for PNG with its unique set of circumstances. It addresses TB DOTS Component 1 - Political commitment, with increased and sustained financing, narrowly only in terms of the *financing* of the TB control policy. It does not address the understanding of political commitment as ensuring the fundamental *governance and health systems* structures required to successfully implement a national TB control policy in a way the PNG health system could sustain.

## **9.5 The Politics Stream – Policy Actors and Process**

We now examine the actors at the politics level in PNG that had a major influence in TB DOTS moving onto the PNG policy agenda in 2006.

### **9.5.1 Policy Capacity at the Political Level in PNG**

We have seen that the cultural institutions underpinning political commitment and leadership were influenced and determined by the wantok system, clientelism and corruption, which resulted in a very high turnover of politicians. As a result, engagement with the policy process at the political level was very limited. Survival in parliament for longer than one term, and ensuring the maximization of clientelism in order to maximize the chances of re-election, was the main concern of PNG politicians. We have seen that the resulting governance structures at the National, Provincial and



District levels in PNG meant that meaningful engagement by the political level with the health policy process was minimal.

Despite these major constraints at the political level, the TB DOTS policy came onto the policy agenda in 2006. To understand how this happened, we need to examine the events at the politics level leading up to 2006.

In this context of low capacity for policy formulation, the point where the political level in PNG built momentum, and became open to a range of health policy initiatives, was the 2002 election of Sir Peter Barter to the PNG Parliament, and his appointment as Minister of Health and HIV, from 2002 to 2007. A trained airline pilot, Peter Barter came from Australia to PNG in 1965, as a volunteer pilot with the Franciscan Catholic Mission in Aitape, Sandaun Province (Pacific Friends of the Global Fund 2014). He then joined a local airline, Territory Airlines (Talair), eventually buying the airline. With a reputation as a hardworking, efficient manager, he developed and broadened the airline to become a successful multimillion dollar tourism venture. Peter Barter served two periods in the PNG Parliament. From 1992 to 1997 he was elected as member for Madang Province, initially as an independent before joining the government and serving a period as Minister for Health, then as Minister for Provincial and Regional Affairs. Barter was re-elected in 2002 and made the Minister for Health and HIV, as well as Minister for Bougainville, in the Government of Sir Michael Somare (PNG Government 2006). He brought to the role of Minister for Health and HIV a commitment to health policies that was to benefit Papua New Guineans, especially in rural areas. The then Prime Minister, Michael Somare, is quoted as saying of Peter Barter:

*“The people and government salute Sir Peter Barter for dedicating much of his public and private life to the development of Papua New Guinea. Papua New Guineans will remember Sir Peter ..... for lifting the profile and commitment of the public health sector. But I will remember Sir Peter as a colleague who was always there when his people needed him urgently. His mercy flights with his helicopter to help an expectant Mother, an injured youth or victims of a natural disaster are well documented. On a personal level, Sir Peter pushed for the health sector to be given greater attention. Some of his achievements include real increases in budgetary and aid supports for HIV/AIDS, more orderly procurement of drugs and other medical supplies, and the efforts to recruit doctors from Cuba. More often than not, he has also expended his personal resources”(Newington College 2009).*

The establishment of the Global Fund to fight AIDS, TB and Malaria in 2002, with the associated rapid increase in the level of funding for HIV, TB and malaria, was a factor in Peter Barter’s favour as Minister for Health and HIV. Within two years of becoming Minister for Health and HIV, the two Tier 1 priority diseases in the PNG Health Plan 2000-2010, HIV and malaria, (GovPNG 2000), had secured large Global Fund Grants - in 2003 a Round 3 \$US20m GFATM Grant for Malaria Control (1<sup>st</sup> Aug 2004 to 31<sup>st</sup> July 2009) was secured; and a 2004 Round 4 \$US17.5m GFATM Grant for HIV/AIDS (1<sup>st</sup> Sept 2005 to 31<sup>st</sup> August 2010) was also successful. Without these Global Fund grants this level of funding for disease control programs would not have been possible given the budgetary constraints of the PNG Government. With the Global Fund also providing grants for TB control the politics level would now increasingly favour a TB control policy. However, a 2005 Round 5 TB DOTS Grant application was rejected partially because TB was not a Tier 1 policy priority.

#### **9.5.2 Policy Window Opens for the 2006 PNG TB DOTS Policy**

By 2006 TB in PNG was on the international policy agenda. The politics stream in

Australia was looking for policy options to address TB and MDR-TB in the Torres Strait.

In the global policy stream TB DOTS was being advocated as *the* “evidence based”

policy by WHO which had global as well as PNG political level credibility in the provision of health policy. At the same time the Global Fund was mobilizing significant levels of funds, and Australia was increasing its funds through the Global Fund for HIV, malaria and TB control activities in the Asia Pacific region. These factors combined at the regional and global level for a policy window to open for a TB DOTS policy.

Dr Yadav taking on the role of policy entrepreneur recognized that a favourable report from an AusAID consultant endorsing the capacity of the PNG NTP to implement a national TB DOTS policy would address remaining AusAID concerns about the PNG NTP program. Dr Konstantinos also taking on the role of policy entrepreneur having credibility with AusAID supported Dr Yadav's assertions about the capacity of the NTP to implement a national TB DOTS policy. This favourably influenced the Australian political level to provide funds through the Global Fund for a national TB DOTS policy. The global policy agenda setting process was being feed into the PNG policy process by these two policy entrepreneurs on behalf of the key global policy actors.

The circumstances were now favourable for all three policy streams coming together i.e. a policy window opening for a national TB DOTS policy.

#### **9.5.3 2006 TB a "National Emergency" in PNG – "Policy Window" Opens and TB DOTS makes it onto the Policy Agenda in PNG**

Peter Barter in accepting the *Country Status Report of National TB Control 1997-2005* (Aia, Yadav et al. 2006) endorsed at the politics level that TB was indeed a major health policy problem. In launching the *Country Strategic Plan to Stop TB 2006-2010* (Aia, Yadav et al. 2006) the politics level endorsed TB DOTS as the policy response to that

## Critical Junctures in the PNG TB DOTS Policy Window Opening

problem, offering significant reductions in deaths from TB and the achievement of the TB MDGs. With the likelihood of a Global Fund grant if TB became a Tier 1 disease he declared TB a “national emergency” requiring an urgent response.

*“TB is a national emergency. It is estimated that TB kills more adults in Papua New Guinea than any other infectious disease. Hence, urgent action is necessary to scale up our efforts to Stop TB in Papua New Guinea. Fortunately, tuberculosis is a curable disease.*

*I would like to congratulate the National Department of Health for having drafted this Country Strategic Plan to Stop TB for the period 2006-2010. The potential outcomes, given adequate support, are exciting, not only for the National TB Program but also for all other health programs because of the cross-cutting effects expected from the interventions and the initiatives planned.*

*The Plan makes a compelling case for greater investment in tuberculosis. We have the chance to save thousands of lives in the next 5 years by implementation of the Plan, which clearly spells out what needs to be done. We have an obligation to act and we should do so now! The costs of not doing so are too serious to ignore. The dual epidemic of TB and HIV can lead to immeasurable human sufferings, thousands of deaths and a serious effect on the national economy.*

*The payoff for this investment is measurable not only in terms of lives saved, but also in economic terms. The economic savings far outweigh the costs. TB hits hardest those people who are in their most productive years, destroying livelihoods and plunging families into poverty. TB is curable and we have a proven strategy. The cost of medicines for an entire course of 6 months is only about K60. Within a few weeks of starting treatment, patients can be back at work, supporting their families.” (Aia, Yadav et al. 2006)*

With this statement from the PNG Minister for Health and HIV, TB moves to become a Tier 1 disease in PNG. TB was now on the policy agenda, the three policy streams (problem, policy and politics) had converged, and a policy window had opened for TB DOTS, with funding to follow (see Figure 10).

<p><b>Framing TB as a Policy Problem (from the Problem Stream)</b></p>	<ul style="list-style-type: none"> <li>• Australia Domestic TB problem: <ul style="list-style-type: none"> <li>○ TB cases increase across the Torrs Strait border with PNG</li> <li>○ Australian Press – “health threats” across Torres Strait border</li> </ul> </li> <li>• PNG National Health Plan 2000-2010 <ul style="list-style-type: none"> <li>○ HIV, malaria Tier 1 policy priority diseases dominate problem stream</li> <li>○ TB <i>NOT</i> a Tier 1 disease control policy priority</li> </ul> </li> <li>• Rejection of Round 5 2005 GFATM PNG TB DOTS Application</li> <li>• Dr Yadav, WHO Stop TB Medical Officer: <ul style="list-style-type: none"> <li>○ Four Stakeholder Consultation Meetings held</li> <li>○ <i>Country Status Report of National TB Control 1997-2005</i> written <ul style="list-style-type: none"> <li>▪ First clear articulation of <i>TB as a PNG Health Policy Problem</i> – high burden of TB</li> </ul> </li> <li>○ A clear statement of TB as a PNG health policy problem</li> </ul> </li> <li>• <b>2006 - TB declared a “National Emergency” by Minister for Health and HIV</b></li> </ul> <p>➤ <i>DOES NOT</i> address PNG Leadership &amp; Governance, PNG Health System Structural Problems, or weak or absent PNG policy capacity (formulation &amp; implementation) as the <i>FUNDAMENTAL POLICY PROBLEM</i> resulting in high TB incidence requiring a policy response.</p>
<p><b>The Policy Solution (from the Policy Stream)</b></p>	<ul style="list-style-type: none"> <li>• Advocated by WHO in the 1990s TB DOTS, emerges from the global policy stream as <i>the</i> evidence based response to the global TB emergency.</li> <li>• Dr Yadav, WHO Stop TB Medical Officer: <ul style="list-style-type: none"> <li>○ Four Stakeholder Consultation Meetings held</li> <li>○ <i>Country Strategic Plan to Stop TB 2006-2010</i> written <ul style="list-style-type: none"> <li>▪ Provides TB DOTS as <i>the</i> policy solution to TB as a policy problem.</li> <li>▪ Will save 5,000-6,000 lives in 5 years; help to achieve MDGs</li> </ul> </li> </ul> </li> <li>• Dr Konstantinos, AusAID Consultant, despite reservations, his report supports AusAID funding of a PNG TB DOTS Policy</li> <li>• No consideration of alternative TB control policy approaches</li> </ul> <p>➤ <i>DOES NOT</i> provide a policy response to the PNG Leadership &amp; Governance, PNG Health System Structural Problems, or weak or absent PNG Policy capacity (formulation &amp; implementation)</p>

<p><b>The Politics Stream</b></p>	<ul style="list-style-type: none"> <li>• Australia Domestic TB policy problem: <ul style="list-style-type: none"> <li>○ TB cases increase across the Torrs Strait border with PNG</li> <li>○ Australian Press – “health threats” across Torres Strait border</li> </ul> </li> <li>• Australian Development Assistance to PNG: <ul style="list-style-type: none"> <li>○ Main donor, shift from direct budgetary support to bilateral support to PNG</li> <li>○ Looking for other mechanisms to provide bilateral support at the same time that GFATM being founded.</li> </ul> </li> <li>• Global Fund to Fight Aids, TB Malaria founded in 2002: <ul style="list-style-type: none"> <li>○ Looking to established funding in the Asia Pacific Region</li> <li>○ Provided another mechanism for AusAID funds</li> </ul> </li> <li>• Sir Peter Barter, Minister for Health &amp; HIV, 2002-2007 <ul style="list-style-type: none"> <li>○ Major health problem identified - high TB burden</li> <li>○ Promised saving of 5,000 lives</li> <li>○ Donor funding only available for TB DOTS policy</li> </ul> </li> </ul> <p>➤ <i>DOES NOT</i> address the fundamental PNG Governance, Leadership and Structural Health System Problems</p>
<p><b>PNG TB DOTS Policy “Window Opens”</b></p>	<ul style="list-style-type: none"> <li>• Sir Peter Barter in 2006 declared TB in PNG a “<i>National Emergency</i>” launching the Country Strategic Plan to Stop TB 2006-2010</li> <li>• 2006 Round 6 GFATM PNG TB DOTS Grant Application successfully submitted</li> </ul> <p>➤ Still <i>DOES NOT</i> address the fundamental PNG Governance, Leadership and Structural Health System Problems</p>

**Figure 10 – Critical Junctures in the PNG TB DOTS Policy Window Opening**

#### 9.5.4 The 2006 PNG TB DOTS Policy

The Country Strategic Plan to Stop TB 2006-2010 (Aia, Yadav et al. 2006) sets out the strategy to achieve coverage of the PNG population with TB DOTS in the five year period 2006-2010. The Global Fund Round 6 Grant Proposal Form – Expanding and Implementing the Stop TB Strategy in PNG (PNG CCM 2006) built on and used the Country Strategy to support the GFATM submission requesting \$US20mill. Thus the

Round 6 GFATM PNG TB DOTS Grant Proposal(PNG CCM 2006) is the full statement of the 2006 PNG TB DOTS Policy because in 2006 the GFATM approved funding of this application.

The goal and targets of the 2006 PNG TB DOTS policy were:

Goal: To reduce morbidity and mortality due to TB in PNG

Objectives:

1. To achieve high quality expansion and implementation of DOTS in order to increase the DOTS coverage rate to at least 80%, case detection rate to at least 70%, and treatment success rate to at least 85% - in 66 out of the 87 districts in PNG by Year 5
2. To address the challenge of TB/HIV co-infection by implementing collaborative TB/HIV activities in 16 major districts (which constitute 30% of the population) by Year 5
3. To assess the MDR-TB situation in 2 major provinces (which constitute 16% of the population) in Years 3-4
4. To contribute to the health system strengthening in 66 out of the 87 districts in PNG (which constitute 80% of the population) by Year 5

The Goal and Objectives were aligned with the WHO Stop TB Global Strategy which had exactly the same targets of detecting 70% of sputum smear positive cases and curing 85% of these cases.

## **9.6 Substantial increase in human and financial resources for the 2006 PNG TB DOTS Policy.**

The GFATM approved a massive funding injection agreeing to the full \$US20m requested in the Round 6 Grant application. This would enable a significant increase in dedicated TB DOTS staff at all levels of the PNG Health System for the five years intensive stage of the PNG TB DOTS Grant implementation to establish a strong supervisory and coordination network including:

*“1 Technical Advisor, 6 National, 4 Regional and 40 Provincial Coordinators, 20 Laboratory Technicians, 67 support staff, 66 Senior Pastors and 32 Civil Society Organizers” (PNG CCM 2006).*

These extra staff would be employed for the five year intensive phase of the 2006 PNG TB DOTS policy i.e. the five years of the 2006 GFATM Grant. After this intensive phase the Round 6 Grant application stated that there would be no ongoing need for extra staff, as the NTP will be able to absorb all ongoing TB DOTS activities(PNG CCM 2006). There would also be an increase in vehicles dedicated to the implementation of the 2006 PNG TB DOTS policy:

*“The contractual staff will be assigned vehicles (procured through the WHO procurement mechanisms) and contractual drivers (2 at the national level, 20 for the provinces, one each), which will be shared with the national and provincial government officers for joint program efforts” (PNG CCM 2006).*

This was a major increase in financial, human and logistical resources for TB control in PNG.

## **9.7 Conclusion to Part 4 – Agenda Setting for the 2006 PNG TB DOTS policy**

The process by which TB DOTS moved onto the health policy agenda in 2006 took place at two levels – a global level and a PNG level.



At the global level, as has been described and critiqued in Chapter 8, key policy actors, who by the power they were able to exert on the PNG policy process, actually brought TB onto the policy agenda.

In Australia, PNG's immediate neighbour and largest aid donor, TB and MDR-TB in Western Province Papua New Guineans crossing the Torres Strait border for treatment was being identified as an increasing health problem by Australian disease control surveillance data and the Australian media. By 2006 TB in PNG was receiving attention as a policy problem at the politics level in Australia. Despite reservations about the capacity of the NTP AusAID was increasingly open to a PNG TB control policy given the level of domestic political attention.

Two other global actors in the agenda setting process were the Global Fund and WHO. Founded in 2002 the Global Fund rapidly began to mobilize significant donor funds for HIV, TB and malaria control in developing countries to achieve their MDGs. By 2006 Australia was directing significant levels of funding to the Global Fund to be used in the Asia Pacific Region at the same time as the manner in which it directed and managed its aid to PNG was evolving from direct budgetary support to bilateral based funding. As the two major donors Australia and the Global Fund brought significant power to health policy decisions in PNG in 2006.

WHO brought a policy approach to TB control, TB DOTS, which it had been strongly advocating since the mid-1990s as *the* evidence based policy for the control of TB in developing countries. The policy stream debate about TB DOTS had taken place at the global level during the 1990s and emerging from that debate the WHO TB DOTS policy

became the dominant and only approach to TB control. Present in PNG since independence in 1975, WHO had credibility in providing technical and policy expertise in disease control. As the only recommended WHO policy approach to TB control it was the only approach the Global Fund would agree to fund.

At the global level, one of these three actors (Australia) had an identified health policy problem arising from TB in PNG. One (WHO) had a policy response to that problem. The third (the Global Fund) had significant funds available for a national TB control policy. At this global level the three policy streams had started to converge to open a policy window.

However, in PNG, as has been described and critiqued in this Chapter, TB was not receiving policy attention as a significant health problem. Due to the rapidly increasing burden of HIV and the continuing high burden of malaria these two Tier 1 diseases were the policy problems identified by the National Health Plan 2000-2010 and the NDOH Strategic Plan 2006-2008.

In order for TB to come to the attention of the politics level it needed to be reframed as a major health problem. Two key policy entrepreneurs took on the role of facilitating this process - Dr Rajendra Yadav, WHO Stop TB Medical Officer PNG; and Dr Konstantinos, Director, Queensland Health TB Program, and AusAID consultant. It was crucial in this process that Dr Paul Aia, Manager, PNG TB Control Program was seen to be directing and driving this process. The *Country Status Report of the National TB Control 1997-2005* is the articulation of TB as a major health problem demanding attention. It is presented by its authors as a PNG TB Stakeholder consensus statement

that TB in PNG has high morbidity and mortality, and that PNG has the third largest TB burden in the Western Pacific Region of WHO, so must be addressed as a policy problem.

The PNG *Country Strategic Plan to Stop TB 2006-2010* provides the policy solution that is "*ambitious but achievable*". Again this is framed as a PNG TB stakeholder consensus policy response. It proposes the WHO TB DOTS approach to TB control and is based on the 2006 WHO *Global Plan to Stop TB 2006-2010*. Again the key actors are Dr Rajendra Yadav, WHO Stop TB Medical officer PNG, and Dr Konstantinos, Director, Queensland Health TB Program, and AusAID consultant, take the role of policy entrepreneurs whilst ensuring Dr Paul Aia, Manager and PNG TB Control Program is seen to be directing the process.

The politics level was weak and policy capacity and decision making was driven by culturally determined wantokism, clientelism, nepotism and corruption. This weakness combined with a dependence on foreign aid to fund essential health services including HIV, malaria and TB gave aid donors significant power and influence in the health policy process. The appointment of Sir Peter Barter, as PNG Minister for Health and HIV, 2002-2007 built momentum for new health policies addressing PNG's major health problems – HIV, Malaria and TB.

As a result of this intensive agenda setting process, the three policy streams – the problem stream, the policy stream and the politics stream, came together in mid-2006 with Sir Peter Barter, at the launch of the PNG Country Strategy to Stop TB 2006-2010 declaring TB a "*national emergency*" and that "*TB is curable and we have a proven*

*strategy*” in TB DOTS. With that, TB moved firmly onto the *policy agenda*. The funding of a national PNG TB DOTS policy would definitely now take place.

In this process the fundamental policy problem of leadership and political commitment with governance and health system dysfunction, along with weak or absent policy capacity (formulation & delivery) were receiving no attention at either the global or PNG levels.

This is a case study in agenda setting in a resource limited setting and how the TB policy process and health policy process generally takes place in such settings. The power relationships in this process and how power is exercised through the provision of technical expertise and how funding is allocated is a central finding of this research.



# Part 5 – Political Commitment and Policy Implementation

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In the thesis we have now dealt with the main questions and objectives of the research:

- 1) To describe and critique the burden of TB in PNG (Part 2),
- 2) To describe and critique political commitment (Part3),
- 3) To describe and critique agenda setting (Part 4), in the policy process resulting in the 2006 TB DOTS policy.

## *Chapter 10 – Policy Implementation 2007 - 2012.*

The aim of this chapter is to examine the implementation of the 2006 TB policy given the findings, to this point in the thesis, with regard to low levels of political commitment and engagement in policy formulation, weak governance and fragmentation of the health system, and the dominant role of global actors and their policy entrepreneurs. Did the policy achieve its goal and objectives? Were the stated principles and objectives of the global actors – the Global Fund, WHO and AusAID in terms of “country lead implementation”, “taking into account local realities and priorities” to “strengthen health systems” achieved by 2012?



## **10 Political Commitment in Implementation of 2006 TB DOTS policy**

### **10.1 Introduction**

The aim of this chapter is to describe and critique the implementation of the 2006 TB DOTS policy with regard to political commitment. How did the policy actors at the political level in PNG, as well as the global policy actors, deal with and ensure the necessary health system governance structures were in place to deliver a national TB DOTS policy? Secondly, did the implementation of the policy achieve the goal and targets of detecting 70% of smear positive TB cases, achieve at least an 85% cure rate in those cases, and achieve at least 80% population coverage with the TB DOTS Program in the period from 2007 to 2012? Thirdly, did the implementation of the policy achieve the stated goals and principles of the global policy actors who committed \$US20m in aid funds to the 2006 policy?

The major policy problem in the implementation of the 2006 TB DOTS policy, which required political commitment, was entrenched corruption, a lack of accountability, and dysfunction between the national, provincial and district levels of government and the health system (Bolger, Mandie-Filer et al. 2005). This was having a major impact on the provision of health services. Up to 60% of Aid Posts had been closed, the capacity of HCs to deliver even basic services was in rapid decline, health patrols were not happening, staff morale and performance was low. The community and patients had little trust in the health system to deliver basic services (Bolger, Mandie-Filer et al. 2005). As a result health outcome indicators were poor with low immunisation coverage rates (Toikilik, Tuges et al. 2010), high maternal mortality (GovPNG 2009,



NDOH 2009) and the emergence of drug resistant TB (Gilpin, Simpson et al. 2008, Phuanukoonnon, Suarkia et al. 2008). This provided the policy context requiring political commitment in the implementation of the 2006 TB DOTS policy.

To undertake this analysis of political commitment in the implementation of the 2006 policy we apply the Fox et al framework (Fox, Goldberg et al. 2011) in order to assess the three central components of political commitment:

1) Expressed commitment

- public pronouncements in line with scientific evidence and internationally recognized standards

2) Institutional commitment

- established bureaucracies,
- adoption of laws and regulations,
- surveillance and monitoring and evaluation mechanisms

3) Budgetary commitment

- disbursement and allocation of funds

## 10.2 2006 PNG TB DOTS Component 1 - Political Commitment

The Round 6 Grant application in outlining the 2006 policy acknowledged the major challenges in *political commitment* in PNG and the resulting significant structural governance challenges:

*“A new “Organic Law on Provincial Governments and Local Level Governments” mandating decentralization of all governmental services and activities was introduced in 1995. This law has transferred the responsibility of rural health services to the local level governments (generally three per district), limiting the role and responsibility of the National Department of Health (NDOH) to policy development, technical and quality standards setting, and monitoring and*

*evaluation (as defined in the National Health Administration Act, 1997)” (PNG CCM 2006).*

The Policy also acknowledged the devastating impact of the 1995 Organic law on PNG

Health System Governance:

*Launched without sufficient preparation for its implementation, it has proved extremely disruptive for the health system, breaking down the vertical integration that is essential to ensure a strong link between policy development and implementation. A recent review of the health sector revealed the lack of a performance based public service, the lack of prioritization of health services, a sound health policy but lack of implementation, inadequate supervision, and inadequate focus on service delivery” (PNG CCM 2006).*

These political changes had a devastating effect on the rural health services of PNG

where the components of the PNG TB DOTS policy must be implemented:

*“In recent years, rural health services have deteriorated significantly because many rural health facilities have closed down and the staff have been retrenched or retired. The shortage and misdistribution of human resources is a serious issue in PNG. There is an acute shortage of nurses and community health workers in most rural areas” (PNG CCM 2006).*

However, when applying the Fox et. al.(Fox, Goldberg et al. 2011) framework, which

has three components for assessing *political commitment*(expressed commitment,

institutional commitment, and budgetary commitment), to the 2006 PNG TB DOTS

Policy there is evidence of only one component, which is *expressed commitment*.

Expressed commitment was evident when TB was moved from being a tier 2 policy

disease to a tier 1 policy disease, when the Minister for Health launched the Country

Strategy to Stop TB 2006-2010. The 2006 PNG TB DOTS Policy acknowledges this when

addressing *political commitment* as a challenge to the 2006 policy:

*“Political commitment: Until 2006, the NTP (National TB Control Program) was a second-tier priority with limited staffing and funding support from the Government and its Development Partners. However, this has now changed due to the reprioritization of the NTP as tier-one priority in June 2006. The challenge now is to advocate the same to the provincial governments” (PNG CCM 2006).*

It is the last sentence in the above quote - "*The challenge now is to advocate the same to the provincial governments*" (PNG CCM 2006) page 39, that is *the* central policy challenge in terms of *institutional commitment* in the 2006 PNG TB DOTS Policy.

The first and major problem in the implementation of the 2006 TB DOTS policy was that provinces and districts in PNG are not responsible to the national level for any policy implementation as a result of the 1995 New Organic Law. Policy priorities at all level of government were elsewhere i.e. wantokism, clientelism and nepotism. The limited or absent *institutional commitment* at the provincial and district level to health policy was reflected in the rapid decline in rural health services in the 10 years leading up to the 2006 PNG TB DOTS Policy. The *institutional commitment* component of *political commitment* is absent at the provincial and district level in PNG. To change this required major legislative changes which would re-centralize the control of health services to the national government, ensuring the restoration of lines of responsibility, and a performance management system throughout the PNG health system. It is only then that components 2, 3, 4, and 5 of a TB DOTS Policy could be implemented. An opportunity to address and reform these governance constraints and implement institutional commitment to the 2006 TB DOTS Policy came with the Provincial Health Authorities Act of 2007.

### **10.3 Provincial Health Authorities Act 2007**

An opportunity to support and implement the *institutional commitment* component of political commitment came about in 2007 when the PNG Parliament enacted the PHA Act (GovPNG 2014). Initiated by the Ministry of Health the PHA was a concrete step towards addressing the fragmentation and lack of accountability within the Health

System by recentralized authority over the provision of health services. The PHA made both the Provincial Hospital Boards (curative services) and Provincial Health Administration (rural health services) responsible to a new PHA which was appointed by and directly responsible to the Minister for Health. This would recentralize responsibility for all health services to the Minister for Health, and National Department of Health, with clearer lines of responsibility and reporting. The PHA was a direct attempt to address and re-establish lines of reporting and responsibility for health service provision which the 1995 New Organic law had dismantled. However, the PHA was voluntary and could not be imposed on Provinces. In 2009 three provinces Milne Bay, Eastern Highlands, and Western Highlands, passed the provincial legislation required to bring the PHA into force (GovPNG 2014). Six more provinces (West New Britain, West Sepik, Enga, Manus, East Sepik and Southern Highlands) had expressed interest in forming a PHA but to 2014 had not taken steps to do so (GovPNG 2014).

It is important to note that the PHA was not initiated and passed by the PNG Parliament to specifically address the needs for institutional commitment required to implement the 2006 PNG TB DOTS policy. The PHA resulted from repeated requests by some PNG policy actors within the NDOH, as well as internationally, to address the fragmentation and dysfunction of the health system. This opportunity to support and implement the *institutional commitment* component of Fox's framework had and still has not been largely taken up by the Provincial governments.

So despite these attempts to establish bureaucracies that would have facilitated the implementation of the 2006 policy a 2014 external review of the NTP found that the

NDOH and NTP still only had direct control and responsibility for *“the national referral hospital, 1 specialist, 4 regional hospitals and 16 provincial public hospitals and since NTP and hospital management are within the same (administrative) structure, it allows NTP to have easy access to provincial hospital teams to communicate and coordinate NTP and GF related activities.”* (GovPNG 2014) However, *“the same is not true for the coordination of TB control related activities at provincial and district health facilities, because NTP and provincial and district health facilities are not under the same structure. Based on the Organic Law, the PHO comes under the provincial administration and 30 district-level health facilities are under the district administration. Therefore, NTP and World Vision staff endeavour to work closely with the provincial hospital, PHO and District Administrators in order to access the provincial and district health facilities.”* (GovPNG 2014)

Despite this lack of political commitment to implement the needed structural governance changes to streamline lines of responsibility and accountability the Round 6 Grant implementation went ahead.

#### **10.4 Policy Implementation**

With the release of the first tranche of funds in September 2007 the implementation of the Round 6 Grant actually commenced on 1st October 2007 so that agreed activities (GFATM 17th Oct 2007) to achieve the goals and objectives:

The Round 6 Grant was to be implemented in two phases. Commencing 1st October 2007 the first phase was to scale up DOTS to 9 provinces by 1st October 2009 and was valued at \$US5,007,911 (GFATM 17th Oct 2007, Ahmadova, Heldal et al. 2012). The

second phase was to increase DOTS coverage to the remaining 11 provinces by 1st October 2012, and was valued at \$US14m, the balance of the Grant (GFATM 17th Oct 2007, Ahmadova, Heldal et al. 2012). (See Figure 11)

PNG Provincial Schedule for Implementation of 2006 Round 6 TB DOTS Policy	
Year	Province
2008	National Capital District, Central, Morobe, Madang, Milne Bay,
2009	Simbu, Western Province, East Sepik, Southern Highlands
2010	East New Britain, West New Britain, Enga, Central and Oro
2011-2012	New Ireland, Bougainville, Sandaun, Manus, Gulf and Western Highlands

**Figure 11 – PNG Provincial Schedule for Implementation of 2006 Round 6 TB DOTS Policy**

Source: (Pennas 2008)

The Grant goal and targets were:

“Goal: To reduce morbidity and mortality due to tuberculosis in Papua New Guinea.

Objectives:

1. To achieve high quality expansion and implementation of DOTS in order to increase the DOTS coverage rate to at least 80%, case detection rate to at least 70% and treatment success rate to at least 85% - in 66 out of the 87 districts by Year 5
2. To address the challenge of TB/HIV co-infection in 16 of the 87 districts by Year 5
3. To assess the Multi-Drug Resistant TB (MDR-TB) situation in 2 of the 20 provinces in Years 3-4
4. To contribute to the health system strengthening in 66 of the 87 districts by Year 5.

The main activities of the Round 6 Grant “will include high quality expansion and implementation of all 5 components of DOTS and the new elements of the Stop TB Strategy (in a phased manner, over 5 years, using a package<sup>4</sup> approach), through a mix of government health care providers and church/ NGO/ private networks. This will involve a sequence of events, province by province, as detailed below:

1. A strong supervisory and coordination network will be set up through the recruitment, training and deployment of 1 Technical Advisor, 6 National, 4 Regional and 40 Provincial Coordinators, 20 Laboratory Technicians, 67 support staff, 66 Senior Pastors and 32 Civil Society Organizers.
2. The supervisory network for providing technical assistance and support will be set up by the World Vision International (for the ACSM/ Community-DOTS components and Madang Province), the World Health Organization (for the diagnostic and treatment components), the Hope Worldwide (for National Capital District, Central and Simbu Provinces), the Capacity Building Service Center (for M&E component), the City Pharmacy (for the P&SM component) and the JTA International (for Western Province).
3. Community leaders (especially, the churches) will be oriented and involved from the beginning so that the strong community networks (especially, the extensive pastor networks) that are already in existence can be used to strengthen the human resource capacity for ACSM activities and the establishment of community-based DOTS network and patient support groups.

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<sup>4</sup> Package approach will include all the 5 classical components of the DOTS Strategy in addition to other elements envisaged under the Stop TB Strategy, particularly addressing the challenges of HIV/AIDS and MDR-TB. The Stop TB Strategy that is planned to be rolled out in Papua New Guinea will have a strong cross-cutting health system strengthening component to take care of the health system weaknesses that are widespread.

4. *Cascade training will be done over 5 years: 20 each of trained National Trainers, Provincial ACSM/ Community-DOTS Coordinators (with assistance from Senior Pastors) and Provincial Project Coordinators will train about 2000 each of Clinical Officers, Voluntary DOT Providers and Government DOT Providers, respectively.*
5. *At least 80 microscopy centers in 66 districts will be established or strengthened and over 400 non-microscopy health facilities will be supported for transportation of sputum specimens to the nearest microscopy centers to improve access to lab diagnosis.*
6. *Collaborative TB/HIV Activities will be introduced and expanded to cover at least 16 of the 87 districts.*
7. *The MDR-TB situation will be assessed in two provinces in Years 3-4.*
8. *External technical assistance will be sought from International Experts for P&SM, M&E, ACSM, TB/HIV, Drug Resistance Survey and External Quality Assurance.”(PNG CCM 2006)*

The Principal Recipient (PR) of the Round 6 Grant was the National Department of Health (NDOH) (GFATM 17th Oct 2007, Ahmadova, Heldal et al. 2012). This meant that all Grant funds flowed to the NDOH which had responsibility for ensuring funds were distributed to the Sub-Recipients (SRs) responsible for implementing different components of the Grant. As PR the NDOH was also responsible for ensuring the Sub-Recipients were held accountable for the acquittal of funds along with the implementation of all activities (GFATM 17th Oct 2007, Ahmadova, Heldal et al. 2012).

*“The CCM is confident that the Principal Recipient will be able to perform the desired activities and thereby achieve the objectives. It has sought to ensure this success through the proposed provision of technical assistance and increased number of*



*support staff, managed through strong implementing partners like the World Vision, the World Health Organization, the Capacity Building Service Center, the City Pharmacy, the Hope Worldwide and the JTA International. These non-governmental organizations and private agencies will manage the extensive supervisory network and cascade training programs that have been planned” (PNG CCM 2006).*

The Sub-Recipients were a mix of private for profit companies, consultancy companies, non-government organizations and faith based organizations. These organizations applied for funding as SRs, subject to approval from the PNG GFATM Country Coordinating Committee (CCM) as being capable of delivering their designated components of the TB DOTS Policy(PNG CCM 2006). In practice, the responsibility for the delivery of the key components of the 2006 PNG TB DOTS Policy was taken out of the hands of the NDOH.

The involvement of SRs was partly to address one of the major grounds the GFATM gave for rejecting the 2005 Round 5 GFATM PNG TB DOTS Grant application. The Global Fund objected to the NDOH being the Principal (and sole) Recipient in the Round 5 GFATM PNG TB DOTS Grant application. The NDOH had excluded all other stakeholders in TB control in PNG including the private sector, non-government sector, and people living with or affected by the disease, violating the GFATM Grant criteria. However, the focus on Sub-Recipients would also address another reason given for the rejection of the 2005 Round 5 GFATM PNG TB DOTS application; the low managerial capacity within the NDOH and PNG Health System to deliver a national PNG TB DOTS policy.

The Round 6 Grant application stated that after the five year Round 6 Grant *“The Government is confident that it will be able to sustain the NTP through its own resources and assistances from its usual development partners because the recurrent costs are likely to be lower and affordable once the program has gained and developed momentum”* (PNG CCM 2006). In 2006 there was no identified need for any future funding requirements for TB control after the 2006 Round 6 Grant ended on 1<sup>st</sup> October 2012.

#### **10.4.1 2006 PNG TB DOTS Component 2 – TB Case detection through quality-assured bacteriology**

In order to be diagnosed as having TB, under the TB DOTS policy, a patient must have a positive sputum smear using the Zeil-Nielsen staining technique. This requires microscopists who are trained in this technique to be within reasonable access to the AP or HC where TB patients would be presenting with symptoms of TB. WHO was the designated sub-recipient charged with sole responsibility for delivering this component:

*“The World Health Organization will focus on lab diagnosis and treatment components by recruiting, training and deploying contractual 1 National Laboratory Coordinator, 4 Regional Laboratory Coordinators, 20 Lab Technicians (for remote areas) and 20 Provincial Project Coordinators to assist the NDOH and Provincial Health Offices”* (PNG CCM 2006)

#### **10.4.2 2006 PNG TB DOTS Component 3 - Standardized treatment, with supervision and patient support**

The third component of the TB DOTS Policy requires a diagnosed TB patient to be directly observed each time they take their TB medication to ensure treatment compliance and therefore increase cure rates. An Advocacy, Communication and Social Mobilization (ACMS) component of the TB DOTS Policy aimed to raise

community awareness so that people with signs and symptoms of TB present to a health facility for sputum microscopy.

This third component of the 2006 PNG TB DOTS Policy was awarded to World Vision, an international faith based organization, which had built an extensive network over some years throughout PNG:

*“The World Vision International will focus on ACSM and Community-based DOTS by networking with local level governments, administrators, churches, village-level pastors and other community volunteers through a network of 1 Technical Advisor, 20 Provincial ACSM/ Community-DOTS Coordinators, 66 Senior Pastors and 32 Civil Society Organizers, who will twin with the Provincial Health Promotion Officers and provide them with technical assistance and support for these efforts” (PNG CCM 2006)*

#### **10.4.3 2006 PNG TB DOTS Component 4 - An effective drug supply and management system**

An uninterrupted supply of TB drugs is required throughout the six months TB treatment to ensure high cure rates. Disruption or failure of drug supply results in relapse, and possible development of drug resistant forms of TB.

City Pharmacy, with the largest chain of private pharmacies in PNG covering most provincial capitals, became the sub-recipient responsible for TB drug Procurement and Supply Management (P&SM) down to the HC and AP level:

*“The City Pharmacy will assist the government by setting up a strong P&SM system closely coordinated by a network of contractual National Logistics Coordinator and Assistant (one each) and 20 Provincial Project Assistants for P&SM, who will provide technical assistance to the existing government National and Provincial Logistics Officers” (PNG CCM 2006)*

#### 10.4.4 2006 PNG TB DOTS Component 5 - Monitoring and evaluation system, and impact measurement

The fifth component of the TB DOTS Policy is monitoring and evaluation (M&E), and measuring the impact of the TB DOTS Policy. A robust HIS is required to ensure that data on the correct indicators to monitor and evaluate the implementation of the TB DOTS policy is being collected and analysed in a timely manner.

The Capacity Building Service Centre (CBSC) was the Sub-Recipient responsible for the M&E component of the 2006 PNG TB DOTS policy. The CBSC was a partnership between AusAID, the National Department of Health and a private contractor, Jane Thomason and Associates International:

*“The Capacity Building Service Centre will support the Principal Recipient in the recruitment, management and performance assessment of one contractual National M & E Coordinator, one National M&E Assistant and 20 Provincial Project Assistants for M&E (one per province). Through these staff who will be placed with the NDOH and the Provincial Governments, it will support the setting up of database management and communication hubs to assist in the establishment of a strong M&E network in the government health system”*  
(PNG CCM 2006) page 40

In short, the 2006 policy responded to the failings of TB DOTS Component 1 – political commitment, and the resulting fundamental governance and health system governance constraints, by contracting the delivery of four key DOTS components to Sub-Recipients able to bypass, whilst nominally working with and within, the broken health system. By bypassing the PNG state the policy reinforced these institutional failings. The policy fails to articulate how policy *“Objective 4. To contribute to the health system strengthening in 66 out of the 87 districts in PNG (which constitute 80% of the population) by Year 5”* (PNG CCM 2006) was to be achieved.

## 10.5 Relationship between the NDOH (Principal Recipient) and Sub-Recipients

A senior World Vision worker stated in her interview that the staff of NDOH, and especially the National TB Control Program, resented the role taken by the SRs in implementing the key components of the 2006 PNG TB DOTS policy. *“It was like the pride was hurt of the government, it was a bit humiliating to know you don’t have the capacity to acquit those funds. Our mere presence is telling these workers that they are incompetent, basically if they were competent why would we be there?”* (Adepoybi - Interview 12th April 2008)

This had an impact on the way the NDOH related to and worked with the SRs.

The NDOH staff attitude was *“You are employed to do this so you do it. It’s a problem calling someone to come in to do someone else’s job, because that person is going to feel disempowered and they get paid less, the constant refrain is you guys are here for 5 years, then what? it’s true.”* (Adepoybi - Interview 12th April 2008)

Further, the implementation of the 2006 PNG TB DOTS policy required the recruitment of a large number of new staff employed under contract by the Sub-Recipients. Many of these SR positions required prior health experience and paid higher salaries than the NDOH. *“We wanted to avoid taking people from the Department of Health and putting them into these sub recipient positions, leaving a skeleton staff in the National Department of Health. ... (However), for the last one, which was for district TB coordinators, I would say all of the staff working in (National Department of Health) TB sections around the county applied because the money is more”* (Adepoybi - Interview 12th April 2008). The Sub-Recipients *had* to fill these positions as this was a GFATM

requirement to be met before the next round of money would be released (Adepoybi - Interview 12th April 2008).

### **10.6 Differences between Global Fund and AusAID**

A further major problem in the early stages of the implementation of the Round 6 grant was the difference encountered between the management and reporting requirements of the Global Fund Grant compared to AusAID. AusAID had been the largest donor to the Health Sector for many years, and managers in PNG had become used to its requirements. *“AusAID is notorious for not demanding a high level of performance, they can’t be classed as performance based. Funding pretty much comes”* (Adepoybi - Interview 12th April 2008).

By contrast, the Global Fund set very high and stringent requirements for reporting. The Fund required quarterly reports on all the 2006 PNG TB DOTS activities – on workshops, trainings, field visits, supplies purchased etc. Many of these data requirements were to enable comparison between Global Fund grant implementation in different parts of the world. They were not framed around the Health Information needs of the recipient country programs. A large part of *Component 5 – Monitoring and evaluation, and impact measurement*, activities were directed at collecting data to meet Global Fund needs. There was also a strict audit of management of Global Fund moneys. If agreed timelines and indicators were not met then the next tranche of funds was not released. This was a new experience for both the NDOH as PR and also for the SRs used to the AusAID approach (Adepoybi - Interview 12th April 2008).

## **10.7 Global Fund Implementation Performance Grading of the Round 6 Grant**

The Global Fund grades the performance of its Grants using a scale which indicates the quarterly performance of the Grant against the agreed, and required, GFATM performance indicators. These performance indicators are the Grant implementation deliverables – drugs supplied, trainings completed, new TB cases detected, cured TB cases etc. The performance grades are:

A1 – Exceeds expectations

A2 – Meets expectations

B1 – Adequate

B2 - Inadequate but potential demonstrated

C – Unacceptable

If the Grant performance is “C” – unacceptable, then the Global Fund does not authorized the release of the funding for the next quarter.

Based on this Global Funds own quarterly implementation performance grading system the Round 6 TB DOTS Grant, from the commencement of implementation in the fourth quarter 2007 up to 2011, the quarterly implementation performance was consistently in the range between B1 and A1(GFATM 2012). So according to the Global Funds own assessment the Round 6 TB DOTS Grant was meeting the Funds minimal requirements for implementation during this time period.

## 10.8 Global Fund Office of Inspector General (OIG) Review of 6 PNG GFATM Grant

However, the performance grade of the Global Fund Round 3 Malaria Grant (GFATM 2004) and Round 4 HIV/AIDS Grant (GFATM 2004) both had several quarters which were recorded as “C” – unacceptable, was recorded(OIG GFATM 2014).

As a result in October and November 2010, the Office of Inspector General (OIG) conducted a detailed audit on six Global Fund grants in PNG from Rounds 3, 6 and 8, including the 2006 Round 6 PNG TB DOTS Grant(OIG GFATM 2014). The audit made several major findings with regard to the Round 6 Grant implementation which by the time of the OIG audit had completed 3 years, and the first phase, of the 5 years of the Round 6 implementation:

Firstly, it noted a lack of capacity within the National Department of Health which resulted in dependence on foreign technical assistance to ensure the TB DOTS policy was being implemented. *“The success of the three Global Fund supported-programs was driven by the use of technical assistance and support from the sub-recipients for major parts of the program. However, the National Department of Health as PR did not have a clear action plan on how to transfer knowledge from the technical assistance support in order to build in-country capacity”* (OIG GFATM 5 July 2012). The use of foreign technical expertise and sub-recipients outside the government health system *“gave the appearance that the Global Fund had facilitated a parallel system in the country, whereas in fact this was due principally to an absence of capacity in the National Department of Health. The reliance on technical assistance, however, should be complemented with capacity building of national and local staff for long term sustainability”*.(OIG GFATM 5 July 2012).



Secondly, despite the Round 6 Grant implementation being in its third year, with health system strengthening as a central focus, the OIG audit noted that the health system was still very weak. *“For the three diseases (HIV, TB, malaria), patient access to the provision of good quality care was hindered by the fact that: staff were often inadequately trained; frequent stock-outs occurred; there was a lack of treatment compliance.”* (OIG GFATM 5 July 2012) As a result *“there were risks of increasing resistance to malaria drugs; an increasing incidence of multi-drug resistance to TB; and co-infections of TB and HIV”* (OIG GFATM 5 July 2012).

Thirdly, the quality of health data was very poor. *“The National Department of Health faced issues with the quality and accuracy of data collection and reporting; data analysed and collected were not accurate”* (OIG GFATM 5 July 2012). The OIG audit emphasized that *“supervisory visits should be strengthened at provincial level, and there is a need for on-site training in the use of management tools and the accuracy of data reporting. For the TB program, new monitoring tools should be made available and distributed as soon as possible”* (OIG GFATM 5 July 2012). Data collected by the National HIS was not adequate to track progress against Global Fund program indicators and extra staff needed to be hired to collect these data to meet the Global Funds reporting needs (OIG GFATM 5 July 2012).

Fourthly, there were inadequate human resources to deliver the TB DOTS policy. There was *“a lack of medical and paramedical staff at national and provincial level”*. This resulted in *“the use of community health workers to assist nurses and doctors (due to limited numbers available) which has contributed significantly to TB program outcomes in Papua New Guinea”* (OIG GFATM 5 July 2012). However, as doctors and

nurses received all TB DOTS training (Adepyobi - Interview 12th April 2008) the *“CHWs were not all trained in TB DOTS. This lack of training was critical, as CHWs that are self-taught use the Stop TB Guidelines (blue book) as a reference source, and this guideline had not been updated.”*(OIG GFATM 5 July 2012)

Finally, the OIG found within the NDOH that there had been fraudulent use of Global Fund Grant moneys which took various forms:

- *“Non-compliance with grant agreements and approved work plans, such as the purchase of health products based on an unapproved procurement and supply management plan.*
- *Lack of supporting documentation for expenditure on goods and services, and to support Progress Update and Disbursement Requests, resulting in delayed and incorrect reporting.*
- *Unreconciled differences between the expenses reported to the Global Fund and those in local financial records.*
- *Inadequate control over bank and cash operations and weak monitoring of advances.*
- *Instances of non-compliance with grant requirements and guidelines on procurement, including records maintenance and procurement planning.*
- *Weak monitoring controls over third party activities and sub-recipients.”*(OIG GFATM 5 July 2012)

The OIG audit identified \$US2.7m of *“unsupported and ineligible”* expenditure of which \$US2.3m was not sufficiently accounted for by the NDOH as PR, and smaller sums by SRs (OIG GFATM 5 July 2012).

As a result in November 2010 the Global Fund invoked its “Additional Safeguard Policy” over the PNG portfolio developing an action plan of safeguards which included the suspension of the Global Fund Round 6 TB DOTS Grant except for life saving activities such as drug supplies ...” *the OIG concludes that the internal control environment requires significant improvement due to non-compliance with applicable policies, operating standards, sound commercial practices, the terms of the grant agreements and weak financial controls. .... the OIG could not provide reasonable assurance that oversight arrangements ensured that grant funds had been used for the purpose intended and that value for money had been secured.*”(OIG GFATM 5 July 2012)

The findings in the OIG audit of the Global Fund Grants were a further indication of the low level or absence of the *institutional commitment* component of *political commitment* to address the governance reforms needed to “*establish bureaucracies, laws and regulations*” in the Fox et al framework on political commitment to actually deliver the national implementation of the TB DOTS policy.

### **10.9 NDOH Resigns as Round 6 Grant Principal Recipient**

As a result of the OIG audit the NDOH, in a letter to the Global Fund dated 15 April 2011, resigned from its role as the PR for Global Fund supported programs in PNG, including for the Round 6 TB DOTS Grant (OIG GFATM 5 July 2012, Ahmadova, Heldal et al. 2012, GovPNG 2014). The PNG Global Fund Country Coordination Mechanisms (CCM) oversaw the selection process for a new PR for the Round 6 Grant. This resulted in the selection of World Vision International as the new PR in June 2011(GFATM 17th

February 2012, World Vision 2013). From June 2011 World Vision International took primary responsibility for the implementation of the TB DOTS policy receiving the balance of the Round 6 Grant funding of \$US7.4m (World Vision 2013).. As a result World Vision now provided human resources to the central and provincial level required to oversee and coordinate the implementation of the Round 6 activities. It also reported directly to the Global Fund the required Round 6 Grant quarterly performance indicators.

The NDOH and NTP no longer had any direct responsibility for the implementation of the TB DOTS policy. The revised role and responsibilities of NTP was to monitor and report on NTP activities, only provide “oversight” of the Global Fund grant and coordinate sub-technical working groups represented by major development partners such as World Health Organisation (WHO), AusAID, JTA International, World Vision and Hope Worldwide and provincial TB coordinators and physicians from TB burden provinces (Adepyobi - Interview 28th January 2010, Ahmadova, Heldal et al. 2012, GovPNG 2014).

In the 2006 Round 6 Grant agreement the Round 6 Grant had been meant to finish on October 1<sup>st</sup> 2012. In agreeing to WV as the new PR the Global Fund, taking into consideration delays which occurred during the transition of PR-ship from NDOH to World Vision, approved an extension of the Grant from October 1, 2012 to June 30, 2013 (GovPNG 2014).

## 10.10 Round 6 TB DOTS Implementation Outcomes

The Round 6 Grant concluded on 30<sup>th</sup> June 2013<sup>5</sup>. The central question is by June 2013 had the Round 6 Stop TB Grant achieved its four objectives? We draw on independent external reviews of the NTP to provide an independent assessment of the four Round 6 Grant Objectives by 2013-2014:

**2006 DOTS Policy Objective 1 - To achieve high quality expansion and implementation of DOTS in order to increase the DOTS coverage rate to at least 80%, case detection rate to at least 70% and treatment success rate to at least 85% - in 66 out of the 87 districts by Year 5.**

Firstly, DOTS *Component 5 - Monitoring and evaluation system, and impact measurement* provided the data for the evaluation of the other TB DOTS Round 6 Grant indicators. The 2014 Joint External Review found that the quality of the DOTS data was “*still extremely poor*” (GovPNG 2014). In 2013 only 212 of 294 Centres providing DOTS returned reports. Data collection was being driven by Sub-Recipient employed M&E staff who had no long term contracts or indication of being absorbed into the government health system. With caveats about the quality of data the 2014 Review relied on 2011 and 2012 data as the only available data in 2014 to undertake its evaluation of the performance of the NTP (GovPNG 2014), confirming the findings of the OIG in 2009 (OIG GFATM 2014) and the 2012 WHO External Review of Programmatic Management of Drug-Resistant TB with regard to poor quality and lack of timeliness of health data (Ahmadova, Heldal et al. 2012).

With regards to DOTS *Component 2 - Case detection through quality assured bacteriology*, the 2014 Joint External Review of the NTP stated that sputum smear

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<sup>5</sup> As the end of the Round 6 Stop TB Grant came to an end a further Grant was being prepared. An application for bridging funds beyond June 2013 was being prepared for the Global Fund to continue funding. This is dealt with later in this Chapter under Postscript.

performed is *“the bedrock for monitoring and evaluation activities, providing diagnostic certainty and the ability to confirm cure. A well-functioning DOTS program is dependent on high rates of quality assured sputum smear microscopy and well-functioning microscopy centres”* (GovPNG 2014). By 2012 despite the Round 6 grant roll out, sputum smears were performed on <50% of adult pulmonary TB cases with high rates of *“sputum not done”* cases (GovPNG 2014). This was due to the inadequate and poorly performing sputum microscopy services. Whilst smear microscopy using the Zeihl-Neelsen method had been established for many years only 112 of the established 139 microscopy centres were functioning in 2014(GovPNG 2014) despite the Round 6 inputs. The reasons for the 27 non-functioning microscopy units were either because of *“a lack of a trained microscopist, or poor infrastructure, e.g. no space for the microscope or reagents. So sputum samples from these centres were sent to other functioning microscopy centres in the province thus overburdening the workload of these centres, delaying patient diagnosis and leading to a high rate of “smear-not-done” among enrolled cases”*(GovPNG 2014). Again this 2014 outcome was despite the extensive inputs to improving sputum microscopy services during the Round 6 Grant.

With regard to *DOTS Component 3 - Standardized treatment, with supervision and patient support* TB DOTS was now present in all 20 provinces as a result of the Round 6 Grant. However, the 2014 Review found that *“case holding was poor with treatment success reported in 69% of new smear positive cases, and 52% of retreatments cases (based on the 2011 cohort), owing mainly to high rates of “loss to follow up/default” (19% for new smear positive and 22% for retreatment cases)”*(GovPNG 2014). This was less than the 85% treatment success Round 6 target. Verification of treatment success

proved difficult because inadequate sputum microscopy and reporting and poor data management so that the reliability of reported outcomes were questionable so “actual loss to follow up” rates had been even higher than reported figures(GovPNG 2014).

This was a serious concern, *“since these patients are more likely to have poor treatment outcomes, acquire drug resistance and contribute to on-going TB and MDR-TB transmission within the community”*(GovPNG 2014). The Review found anecdotal evidence that common causes of default *“were a lack of knowledge on importance to adhere to TB treatment, reliance on traditional healers, religious beliefs, belief that the disease is the result of sorcery, patients moving to other locations after working in plantations or after opting for a reputed health facility situated far from their residence area”* (GovPNG 2014) confirming other findings on why TB patients do not comply with Treatment (Ongugo, Hall et al. 2011). This was despite Round 6 grant funding to specifically address these issues.

With regard to *DOTS Component 4 - An effective drug supply and management system* the 2014 Review found that *“stock management practices were universally poor”* (GovPNG 2014). *“Stock inventory records were rarely maintained and no stock cards were in use. For those who have, very few records are updated”* (GovPNG 2014). Poor storage practices observed by the 2014 Review were *“boxes of medicines placed on the floor, without any temperature monitoring and control, no prevention of rodent damages or water exposure”* (GovPNG 2014). Again it was Round 6 Sub-Recipient employed staff that had no long term indication of integration into the government health system that drove drug procurement and distribution. These findings confirmed the findings of the Global Fund OIG in 2009 (OIG GFATM 2014)and the 2012

WHO External Review of Programmatic Management of Drug-Resistant TB with regard to TB drug procurement and supply (Ahmadova, Heldal et al. 2012).

**2006 DOTS Policy Objective 2 - To address the challenge of TB/HIV co-infection in 16 of the 87 districts by Year 5**

The focus of the Round 6 Grant was the scaling up of TB DOTS to the 20 Provinces.

Joint TB/HIV activities were not in the unsuccessful 2005 Round 5 PNG Stop TB

application. However, they were included in the Round 6 Grant application with the

release of the *2006 Global Plan to Stop TB 2006–2015* (Stop TB Partnership and World

Health Organization 2006) which emphasised the need to address TB and HIV jointly

given their close association which then resulted in the Global Fund (Feachem and

Sabot 2007) from 2006 onwards giving favourable consideration to joint TB/HIV

activities in grant applications. As a result the Round 6 grant target was to establish

joint TB/HIV services in 87 districts by the end of the Round 6 Grant.

The 2014 Joint External Review does not make any mention of joint TB/HIV programs

having been established. It found that HIV screening in TB patients was low and that

documentation of HIV test results in the TB register poor (GovPNG 2014). The 2012

WHO External Review of Programmatic Management of Drug-Resistant TB found HIV

testing rates of 24% in TB patients. The 2014 Review found that for TB and HIV co-

infected patients that *“ARV treatment was often initiated only after completion of TB*

*treatment”* (GovPNG 2014). The 2013 Mid Term Review of the PNG HIV Strategy

(2011-2015) found that only 17% of TB patients had a record of one or more HIV

counselling/testing episodes (Godwin 28 May 2013).



**2006 DOTS Policy Objective 3 - To assess the Multi-Drug Resistant TB (MDR-TB) situation in 2 of the 20 provinces in Years 3-4**

In 2014, after the completion of the Round 6 Grant, the first Drug Resistance Survey (DRS) took place in 4 selected provinces (National Capital District, Western Province, Madang and Morobe)(GovPNG 2014). The results of that survey were not available at the time of writing this thesis. However, there was increasing evidence of MDR-TB and documented XDR-TB in PNG. Drug Resistance testing was given a boost with the first GenXpert machines to test for MDR-TB being installed in Daru and Port Moresby Hospitals in 2012 as part of an Australian Government funded TB control project for Western Province which was initiated in 2011<sup>6</sup> which was not part of the Round 6 Grant (Ahmadova, Heldal et al. 2012, McBryde 2012, GovPNG 2014). National PMDT Guidelines were finalized in 2011 and NDOH commenced procuring second line drugs for MDR-TB (GovPNG 2014). By 2014, 8 provinces had access to GenXpert testing. These MDR-TB developments were outside the scope of the Round 6 Grant.

**2006 DOTS Policy Objective 4 - To contribute to the health system strengthening in 66 of the 87 districts by Year 5.**

With regard to political commitment to *“establish bureaucracies, adopt laws and regulations”*(Fox, Goldberg et al. 2011) to ensure health system governance structures capable of implementing a TB DOTS policy, major challenges remained.

Firstly, in 2014, there was still the ongoing major problem of a lack of lines of responsibility from the district to provincial, to national levels, impacting significantly on health service provision. The overall system was functioning significantly below its potential with health systems management poorly developed, with little or no

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<sup>6</sup> See Postscript at end of this Chapter for further details

accountability, or encouragement or reward for improved performance. The quality and frequency of supervisory visits were minimal and staff motivation generally low. Systems to encourage professional behaviour were ineffective, with high rates of absenteeism and poor performance outcomes whilst in general. Program activities, for the most part, fell short of TB control requirements in NTP guidelines for both DOTS and PMDT (Godwin 28 May 2013, Adepybi - Interview 28th January 2010, Ahmadova, Heldal et al. 2012, GovPNG 2014). Despite this *“high-functioning facilities were identified in all provinces, despite formidable local challenges, which demonstrates that it is possible to deliver care according to international standards. However, these examples were the exception and improved efforts are required to support these facilities/individuals and learn from them.”* (GovPNG 2014)

Secondly, low human resource capacity, both quantity and quality, was a major concern in all areas of the TB Programme. There were insufficient TB designated positions, vacancies not filled, absenteeism, travel and leave without ensuring the continuity of routine programme functions and technical capacity of staff. The result was markedly reduced effectiveness of service provision and decreased momentum in implementation, planning, monitoring and supervision (Adepybi - Interview 28th January 2010, Ahmadova, Heldal et al. 2012, GovPNG 2014).

Thirdly, there was a lack of local ownership especially at the provincial and district level, with little engagement from the provincial and district managers in TB control activities. In most provinces support and supervision of TB control activities were seen to be the responsibility of World Vision staff without active support or supervision by local officials (Adepybi - Interview 28th January 2010, Ahmadova, Heldal et al. 2012, GovPNG 2014).

Fourthly, there was huge dependence on project supported partners for critical functions with no plans to mainstream these into the NTP with a view to sustainability (Ahmadova, Heldal et al. 2012, GovPNG 2014). *“World Vision, being the Principal Recipient of the GF Grant, efficiently provides the administrative function. It has successfully facilitated the expansion of DOTS to a nationwide scale expanding from nine provinces to 20 provinces trained and implementing DOTS. Together with other partners like WHO, etc., it ably facilitates meetings and trainings to ensure that targets are met. Technical assistance is being provided continuously by the WHO Country Office, putting in place the PMDT (Programmatic Management of Drug-resistant TB) Guidelines, PMDT Training Modules, making possible the Training of Trainers in 2011, updating the TB protocol, collecting data and mediating technical assistance. The focal point for major projects like the DRS (Drug Resistance Surveillance) is the WHO Medical Officer who provides both technical and administrative support including coordinating and organizing meetings and trainings together with the PR.”* (Ahmadova, Heldal et al. 2012) The 2014 Joint External Review of the National TB Programme of PNG found *“this creates a perception that World Vision is running a parallel implementation structure that would become unsustainable after the end of the Global Fund Grant”*. (GovPNG 2014). By 2012, despite government commitment to do so, only five out of the 20 provinces have established TB/Leprosy Officer positions. The remaining 75% of provinces have no focal person for TB. At the national level, despite a commitment to do so and Round 6 grant funding for the positions, the crucial Central M&E Officer and Central PSM (Procurement & Supply Management) Officer, had not been appointment (Ahmadova, Heldal et al. 2012).

Finally, as the implementation of the Round 6 Grant came to an end it was found that the poor Health System and NTP performance may well be contributing to a worsening of the TB and MDR-TB. The 2012 WHO PMDT Review TB concluded that *“the overall frail DOTS implementation is likely to generate more MDR-/XDR-TB”* (GovPNG 2014). The 2014 Joint External Review of the PNG NTP concluded that *“these poor practices are replicated in many provinces, posing a grave risk of drug resistance multiplication”* (GovPNG 2014).

In summary, the impact of the Round 6 Grant in terms of strengthening the Health System of PNG was poor. By the end of the Grant there was no documented improvement in the capacity of the PNG Health System to implement a TB Control Program. Taking each of the six WHO building blocks of a Health System – Human Resources, Health System Financing, Health Information Systems, Service Provision, Leadership and Management, Pharmaceuticals and Medical Technologies (WHO 2007) there was no measureable improvement in capacity in any of these components of the PNG Health System despite this being an objective of the 2006 Policy. Parallel structures, beside and separate from, although notionally working with the PNG government health system were the only means by which the Round 6 grant could be implemented.

#### **10.11 Positive Outcomes from the Round 6 TB DOTS Grant**

There were positive outcomes from the development of the 2006 TB DOTS policy and the Round 6 Global Fund Grant to implement the policy. The first was that TB was recognized to be a disease of policy importance. As a result of the process which had taken place in 2006 TB had become a policy priority so that it was receiving political

attention both in PNG and internationally (Ahmadova, Heldal et al. 2012, GovPNG 2014). Drug Resistant TB was also now recognized as a major health policy problem which needed to be addressed (Ahmadova, Heldal et al. 2012, GovPNG 2014).

Secondly, by 2011 all 20 Provinces had a TB DOTS program in place where there was no national TB control policy previously (Ahmadova, Heldal et al. 2012, GovPNG 2014).

Thirdly, by 2011 the PNG Government was funding 80% of first line TB drug purchases (Ahmadova, Heldal et al. 2012) and by 2013 the government was funding the full procurement cost of all TB medicines (first- and second-line, adult and paediatric), as well as ancillary medicines and TB laboratory supplies (GovPNG 2014). This PNG government funding was consistent with TB DOTS *Component 1 – Political Commitment, with increased and sustained financing* (Stop TB Partnership and World Health Organization 2006). It was also a demonstration of the third component of the Fox et al political commitment framework “*disbursement and allocation of funds*” (Fox, Goldberg et al. 2011). There was a decision taken to stop the use of single drug formulations, except in rare cases of drug toxicity. All new TB patients now receive quality-assured fixed-dose combination tablets (FDCs) (GovPNG 2014).

Fourthly, GenXpert machines for the rapid testing of Drug Resistant TB had been installed and were operating in Port Moresby, Daru, Lae and Madang Hospitals (Ahmadova, Heldal et al. 2012, GovPNG 2014).

### **10.12 Burden of TB in PNG 2013-2014**

The ultimate indicator of the success of the implementation of an intervention such as the Round 6 TB DOTS Grant is a measured reduction in morbidity and mortality in the target disease. The reality was that by the end of the Round 6 Grant, the HIS and data collection was still so poor it was not possible to measure any change. It was also too short a time frame in which to realistically expect a measureable change.

However it is important to note that TB continues to be a disease of major public health importance in PNG based on independent studies using methods and data which are completely separate to the HIS.

A review of Western Province HC TB case records in 2012 found a TB incidence of *500 cases per 100,000 people per year*, similar to that in Mozambique and Cambodia (McBryde 2012). These data were collected as part of an external review of the AusAID inputs into TB control in the Western Province of PNG. This review used data taken directly from HCs and did not rely on data from the PNG NDOH.

In a further study in the Kikori district of the remote Gulf province, 274 TB patients were followed from March to June 2012 to examine the incidence and characteristics of TB in a remote rural population with the aim of understanding TB in remote PNG communities (Cross, Coles et al. 2014). The estimated incidence of TB in Kikori was 1290 per 100,000 people (95% CI 1140 to 1460) in 2012. The proportion of TB patients co-infected with HIV was 1.9%. Three of 32 TB cases tested were rifampicin resistant. This is one of the highest recorded TB incidences in the world (Cross, Coles et al. 2014).

The TB incidence in the Western and Gulf Province studies are significantly higher than the official PNG National TB incidence, and also the WHO reported TB incidence for the whole of PNG. The official TB incidence is 347 cases per 100,000 per year (WHO 2014, UNDP 2015). This was for the final MDG report and is based on 2013 data (UNDP 2015).

Drug resistant TB is an increasing problem and a real challenge given the health system constraints (Gilpin, Simpson et al. 2008, Ahmadova, Heldal et al. 2012, McBryde 2012, Cross, Coles et al. 2014). *Country Guidelines for Management of MDR-TB* were introduced in 2011 (Dakulala 2010, NDOH NTP 2011). The 2014 Joint External Review of the NTP found that MDR-TB was present. Some 337 MDR-TB patients had been started on second line drugs (SLDs) since 2009 with more than 50% of all MDR cases in Western Province, 8 with XDR-TB and 6 with TB/HIV coinfection (GovPNG 2014). The number of cases is likely to increase as greater drug resistance testing is carried out now there are 8 centres with GenXpert machines.

With regard to TB in PNG the 2014 Joint External Review found *“Tuberculosis is rampant throughout PNG, and the National Capital District (NCD) reports the highest TB rates (over three times higher than any other province). Port Moresby is likely to act as an epidemic amplifier, also feeding the emergence and spread of drug-resistant TB. Multi-drug resistant (MDR-TB) strains are becoming more common, with high case numbers reported from NCD and the Western Province, where extremely drug-resistant (XDR) TB exists as well. TB/HIV co-infection remains a concern, but seems less common than previously feared and is concentrated within the Highlands and Southern regions”* (GovPNG 2014).

Finally with regard to the MDGs, PNG has not achieved its MDG for reductions in TB as can be seen in Table 10. PNG has not achieved any of its targets for the 8 MDGs.

<b>Papua New Guinea</b> <b>MDG Goal 6 – Combat HIV/AIDS, Malaria, and TB</b> <b>Target 6C – Halve by 2015 &amp; reverse the incidence of TB</b>			
<b>Year</b>	<b>1990</b>	<b>2006</b>	<b>2013</b>
<b>Indicator 6.9</b> Incidence rate per year per 100,000 popn (mid-point)	309	353	347
<b>Indicator 6.9</b> Prevalence of TB per 100,000 popn (mid-point)	694	548	437
<b>Indicator 6.9</b> TB death rate per year per 100,00 popn (mid-point)	105	62	33
<b>Indicator 6.10</b> TB detection rate under DOTS (percent) (mid-point)	19	57	89
<b>Indicator 6.10</b> TB cure rate under DOTS (percent) (mid-point)	60	71	68 (2012 data)

**Table 10 Papua New Guinea Millennium Development Goal TB Targets and Indicators**

*(Note – 2013 data was latest data available, all data are estimates)*

*Source: (UNDP 2015)*

### **10.13 Postscript**

All policy evolves and changes over time due to a range of factors to do with policy actors, policy context and the policy process (Buse, Mays et al. 2006). This happened with the 2006 PNG Stop TB Policy before the completion of the Round 6 Grant in 2013. Even though these policy developments are not the subject of this research it is important to briefly touch on these policy developments so as to see how dynamic the



policy process is and subject to various factors. The Global Fund OIG findings with regard to fraudulent use of Round 6 Grant funds and a lack of capacity to implement the Round 6 Grant was a crucial point in the 2006 policy process.

#### 10.13.1 Australia and the “Stop TB in Western Province” Project

Despite having funded the majority of the 2006 Global Fund Round 6 TB DOTS Grant, TB in PNG continued to receive attention at the political level in Australia. There was ongoing documentation of TB and MDR-TB in Papua New Guinean patients crossing the border to seek treatment in Australian Torres Strait clinics (Gilpin, Simpson et al. 2008) and continuing Australian press coverage of this issue (Parnell 1st March 2008, Parnell 11th June 2007).

In 2010 this resulted in an Australian Senate Foreign Affairs, Defence and Trade References Committee established an inquiry to examine broad cross border issues in the Torres Strait including health, trade, climate change, law and order, and biosecurity, and presented its detailed report entitled *The Torres Strait: Bridge and Border* in November 2010 (Senate of Australia November 2010). The Senate inquiry found that *“Tuberculosis presents a particular problem for the Torres Strait. In March 2009, the rate of tuberculosis in Western Province, the PNG region closest to the Torres Strait, was 552 cases per 100,000 people. Indeed, the most common reasons for health visits by PNG nationals to the Saibai health clinic were tuberculosis and malaria. Limited surveys estimate that between 10 and 20 per cent of tuberculosis in PNG could be MDR TB”* (Senate of Australia November 2010). The Committee’s report in November 2010 characterized TB in Western Province as both a biosecurity and border protection risk, as well as a major health threat for Australia (Senate of Australia

November 2010) and charged the Department of Foreign Affairs with responsibility for addressing these issues. The Australian Senate Report was released within a few weeks of the Global Fund OIG audit report on the fraudulent use of Round 6 Grant funds, and the lack of capacity of the NDOH to deliver the Round 6 Grant national roll out of TB DOTS, and the suspension of the Round 6 Grant until a new Principal Recipient could be appointed (OIG GFATM 5 July 2012).

In February 2011, within a matter of 2 months of the Senate Committee Report, Australia and the PNG Government announced an \$Aus11m Australian funded four year “Stop TB in Western Province” Project to support the Government of PNG to strengthen TB control in Western Province, bordering the Torres Strait of Australia (World Vision 23rd February 2012, AusAID 2012). This was a bilateral (Australia – PNG) project, completely separate from the Global Fund Round 6 Grant (World Vision 23rd February 2012, AusAID 2012).

The AusAID press release announcing the Western Province project states that AusAID’s long term strategic objective was *“to support the Government of PNG to significantly reduce morbidity and mortality from TB and MDR-TB in South Fly/Western Province and Torres Strait, through sustained quality TB control and strong cross border coordination, in line with National PNG TB targets”* (AusAID 2012). There was significant emphasis on *“Strong cross border governance arrangements to ensure coordination, oversight and accountability. This involves development of strong partnerships and agreed cross border protocols”* (AusAID 2012).

The Stop TB in Western Province Project was to be implemented by World Vision which had just taken over the Principal Recipient roll from the NDOH in the implementation of the Global Fund Round 6 Grant. The AusAID announcement states that the *“approach is based on the WHO’s established global standards for an effective TB and MDR-TB response. The WHO treatment guidelines have been proven to work internationally, including in PNG where it has been implemented already in nine provinces, with success”* (AusAID 2012). The Project included the construction of a new TB isolation ward, as well as the installation of X-ray equipment and a GenXpert machine, to rapidly test for MDR-TB, at Daru Hospital. The Project also employed *“TB specialist staff, and provided training for as well as managing a network of health workers to deliver best practice treatment to people in their own communities”* (AusAID 2012). There was also the purchase of a purpose built *“sea ambulance”* to conduct monthly TB outreach clinics throughout the South Fly region of the Western Province, as well as transport TB patients to Daru Hospital when needed, rather than those patients crossing the border for treatment in Australian clinics. The Project narrative was that *“This approach will enable TB treatment to be provided to Papua New Guineans in their communities, which has been proven to be the most effective way to treat TB and prevent the development of drug resistance”* (AusAID 2012).

A major difference between the AusAID *Western Province Stop TB Project* and the Round 6 Grant was the inclusion of MDR-TB treatment which had not been present in the Round 6 Grant. This involved AusAID funding the supply and training of health workers in the use of second line TB drugs (AusAID 2012). This was a new policy response to the documentation of drug resistant TB in patients crossing the Torres Strait border (Brolan, Upham et al. 2011, Simpson, Coulter et al. 2011, Vincent 2011)

and in Western Province itself (McBryde 2012). Official WHO policy was that treatment of MDR-TB only should commence once DOTS for drug sensitive TB was fully implemented and functioning successfully throughout a country (Stop TB Partnership and World Health Organization 2006). This is an example of how health policy can and does evolve according to the needs within a context and of the actors in the policy.

The Western Province Project narrative makes statements about *“supporting leadership by the PNG government”* and *“support to strengthen primary health care services (such as improving the supply of essential drugs and training health workers) is essential to underpin and complement specific support to manage TB”* (AusAID 2012).

This is the same narrative as in the formulation and implementation of the 2006 Stop TB Policy. As with the 2006 Policy there was still no clear strategy to address the major health system governance constraints in the PNG health system and resulting low levels of service provision, which had been a major contributor to the high TB prevalence and the emergence of MDR-TB.

As the Stop TB in Western Province Project was announced, TB treatment services for Papua New Guinean patients through Australian Clinics in the Torres Strait were withdrawn. This received criticism and opposition from doctors (Konstantinos, Simpson et al. 2011) as well as media attention in Australia (McCutcheon 18 Jul 2011, ABC Television - The 7.30 Report 19 April 2011).

The Western Province Stop TB Project was *“the start of a long term, ten year commitment by the Australian Government to working with the PNG Government to control TB in Western Province”* which *“is expected to result in increased TB detection*

*and treatment in the short term and reduce the TB incidence in the medium and long term”(AusAID 2012).*

The Western Province Stop TB Project was a further evolution of the 2006 Policy in response to Australian domestic political level attention combined with the adverse findings of the Global Fund OIG putting the Round 6 Grant in jeopardy. Given the political priority TB in the Torres Strait was receiving domestically in Australia, the 2006 Policy was by 2010 not sufficient for that Australian domestic policy problem.

#### **10.13.2 2013 - Interim Extension of Stop TB Activities 2013-2014**

As the end Round 6 Grant approached in June 2013 no planning or provision had been made for funding of the NTP beyond the life of the Grant(Aia 2012, Lokuge, Salee et al. 2012). Nor were there any concrete plan to integrate the round 6 Grant into routine into the NDOH disease control activities (Ahmadova, Heldal et al. 2012). There was a period from June 2013 to October 2013 where there was no funding for the NTP(WHO 2013). In mid-2013 the NTP Technical Working Group, made up of the NDOH and all Sub-Recipients of the Round 6 Grant, prepared a concept note which made a successful interim application to GF which was approved in late 2013 for US\$ 9.5 million for a year from November 2013 to December 2014(GovPNG 2014). This extension was predicated on World Vision being the Principal Recipient. In February 2015 the Gates Foundation announced an \$Aus18m donation to be administered by the Global Fund and managed by World Vision for TB control in PNG along with an \$Aus4m donation by World Vision itself (Flitton 16th February 2015).

### **10.14 Conclusion**

At the conclusion of its implementation on June 30th 2013, the Round 6 Global Fund Stop TB in PNG Grant (PNG CCM 2006) had not achieved any of the 4 Grant targets.

Based on the limited HIS data the TB DOTS Target 1 – to achieve DOTS coverage of 80% of the population, a case detection rate of at least 70%, and treatment success rate of at least 85%, was not achieved. Target 4 - to strengthen the PNG health system in 66 out of the 87 districts was also not achieved. The health system was no stronger as a result of the implementation of the Round 6 Grant.

Rather than addressing the long standing and ongoing major dysfunction in the health system, the Grant was implemented by setting up a parallel structure using Sub-Recipients from the private, faith based and non-government sectors to deliver interventions. The role of the NDOH as the Round 6 Grant Principal-Recipient, providing oversight of the implementation of the Grant, including the management and distribution of the funds to Sub-Recipients, was terminated by the Global Fund due to fraudulent use of funds and a lack of capacity to perform the PR role. World Vision was appointed to take on this role causing resentment in and lack of cooperation from the NDOH. In so doing the fundamental health system governance constraints were bypassed and not addressed. Underlying this failure to achieve the Round 6 Grant Targets was a lack of political commitment to establishing health governance structures in which accountability and responsibility for health service delivery took precedence over wantokism, clientelism and corruption. The Provincial Health Authorities Act 2007 provided the provinces with an opportunity to address lines of responsibility and accountability. This opportunity was largely ignored by the provinces, continuing the entrenched nepotism and lack of accountability which

underpinned the inability to implement this national health policy. True political commitment meets all three areas of the Fox framework – expressed, bureaucratic and financial. From both the political and bureaucratic level it involves a determination to build structures and governance arrangements which deliver services and outcomes with inbuilt accountability which in turn drive policy formulation and implementation. These were lacking in the 2006 Stop TB policy, both with the international and PNG policy actors.

Further, the failure to achieve the Round 6 Grant Targets was related to a policy which was formulated by global policy actors (Australia, Global Fund and WHO) from outside of PNG. The PNG TB DOTS Policy was based on the needs of these global policy actors and their international and domestic policy agendas rather than starting with the PNG policy needs. The result was a policy which in its formulation did not address or take into account the complex policy context in PNG. By virtue of their funding power these global policy actors were able to influence and determine the PNG policy agenda, with little engagement within and by PNG in the policy process at either the political or health system level. Health policy formulation and implementation in resource poor settings which do not take into consideration the major policy contextual issues and constraints may meet the short term needs of aid donors, but do not result in sustainable outcomes in disease burden nor stronger health systems.

Finally, the comments of a long term, experienced employee of World Vision summarized why the Round 6 Grant Targets were not met:

*“I think the policies that have been developed have not taken into consideration the context that is here in PNG ... its CHWs at the APs, a weak government health system, Sangooma (traditional PNG belief about illness causality), there*

*is MDR and XDR TB etc. I haven't really seen any of those being considered when drafting the DOTS policy for this country. ... DOTS it's not really working. Maybe there has not been enough time taken, but we need to look at exactly why, and we need to be flexible to modify things, I found that policy makers are not flexible to inputs. This is how it is; this is how it's going to be. You have to forget about flexibility when you have timelines to meet."* (Adepoybi - Interview 28th January 2010)





## Part 6 –Discussion and Conclusion

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*Chapter 11- Discussion & Conclusion* brings the key points of the thesis together and offers suggestions for future research, as well as offering suggestions arising from this research as to how to address the health policy process in low and middle income countries such as PNG



## 11 Discussion & Conclusion

### 11.1 Introduction

The aim of this chapter is to bring the key findings of this research together and to discuss the implications of these findings with regard to *political commitment* and *agenda setting* in health policy in resource limited settings.

The objectives of this research are, firstly, to describe and critique TB in PNG as a health problem (objective 1). Secondly, to describe and critique what TB DOTS *Component 1 – Political Commitment*, meant and how it was exercised in the *formulation* and *implementation* of the 2006 policy (objectives 2 and 4). Thirdly, to describe and critique the *agenda setting* process which lead to TB becoming a so called tier 1 policy priority disease (objective 3).

This thesis sets out to critically understand the policy process by which TB came onto the policy agenda in PNG in 2006. With a focus on political commitment this research has examined the policy context, and how and if this was taken into consideration in the formulation of the 2006 policy.

The thesis particularly investigates power relationships in policy agenda setting in a resource limited setting. It finds that international policy groups and funding agencies, through the provision of aid funds and the mechanisms by which those funds were provided, exert significant influence, and can and do alter policy priorities, shape policy

formulation and determine policy implementation. Policy transfer from abroad and the involvement of foreign technical advisers and consultants removed national policy makers from the policy content development process. The increased resources had the unintended consequence of weakening the national governments policy capacity even further. Policy responses to TB can only be effective if both local political commitment and sustained funding are realised. The intricacies of the 2006 TB DOTS policy process in PNG provides lessons for a broader understanding of the policy process in resource limited settings and how policy is formulated and transferred to resource limited settings.

PNG with a population of 7 million people, most of who live in underserved rural areas, has some of the worse health indicators in the WPRO of WHO. It remains 156 on the Human Development Index. It will not achieve any of the 8 MDG targets, including the MDG 6 targets for TB, by the end of 2015. The limited TB data from the HIS along with small well conducted incidence studies in Western and Gulf provinces shows that PNG has one of the highest burdens of TB in WPRO, and possibly the world.

This research makes an original contribution to knowledge about political commitment and agenda setting in health policy in resource limited settings. There is a very limited literature on political commitment and agenda setting in the policy process in resource poor settings. There is a complete absence of research on these in Papua New Guinea. This is the original contribution of this research.

## 11.2 TB as a Health Policy Problem in PNG

Firstly, with regard to *Objective 1 - To describe TB as a health problem in PNG* the reality is that the actual prevalence and incidence of TB was and still is not known. Despite significant aid donor inputs over several decades, HIS data was and is still poor and too unreliable to provide an accurate measure of TB burden, or control program outcomes. The reality is that what has been represented as strengthening the HIS during the Round 6 Grant implementation was in fact a focus on the collection of data to meet Global Fund reporting requirements. As a result after the 5 years of Round 6 Grant implementation there is still insufficient reliable data to provide accurate measures of TB burden.

PNG has a fundamental structural governance problem which underpins the poor data collection, analysis and reporting. These structural problems are beyond the control of the health system itself, starting soon after Independence due to the need to keep the new country intact and placate the needs of secessionist groups in a rugged, inaccessible, and culturally and linguistically diverse country. The *1977 Organic Law on Provincial Government*, and then the *1995 New Organic Law on Provincial Government and Local Level Government*, decentralized responsibility for all government services, including health, to the lowest level of government which did not have the capacity to manage or deliver health services. If health information, the health system, and health outcomes for all Papua New Guineans are to improve, then these fundamental structural governance problems need to be addressed, especially now with the emergence of MDR-TB and XDR-TB. Attempts to do so have, thus far, not been successful.

Despite these overwhelming constraints, donors such as the Global Fund, DFAT (Australia) and ADB, have expended large sums of donor assistance on improving HIS in PNG and continue to do so. Donors to disease control programmes such as TB, come to PNG with a particular paradigm of how a health system functions, e.g. how health data are collected, analysed and reported, as well as how TB control must be carried out i.e. TB DOTS. These paradigms assume the existence of a centralized HIS with adequate communication between peripheral HCs and the central health information unit, and then the capacity to undertake analysis and reporting against a range of programme indicators. However, the current PNG HIS is not capable of achieving data outputs based on such assumptions, given the embedded structural governance constraints. This illustrates a divide between donors' own need for data and the limited capacity to provide these data. Donors' own governance structures, including those regarding data requirements, are not flexible, and not able to be adapted to the major structural limitations of HISs in low income countries such as PNG. There is an assumption that a recipient government should restructure itself in order to meet the data needs of donors; however, this is unrealistic. Attempts to reform or set up parallel HISs have been demonstrated to be unsustainable. Donors need to look at how the institutions of government work, especially with regard to information gathering. Donors are not going to fix the HIS on their own. A broader PNG driven reform of the health sector governance structures must be the starting point.

Finally, the 2006 TB DOTS policy did not come about as a result an outcry from within PNG at the political, NDOH, NGO, TB advocacy or community levels over the documentation of a marked change or increase in TB prevalence and incidence. The

PNG National Health Plan 2000-2010 had not made TB control a policy priority.

Malaria and HIV were the two PNG Government and NDOH priority diseases up until 2006. There was no documentation or reporting of a dramatic change in TB incidence which created within PNG a policy problem of sufficient importance for the political level to demand a policy solution such as a TB DOTS policy. The HIS was not reliable enough to document such a change. The momentum for the 2006 TB policy came from and was driven from outside PNG.

### **11.3 Political Commitment**

The key to an effective TB control policy is *political commitment* (also referred to as *political will* or *political leadership*). Long term responsibility for TB policy can only rest with Papua New Guineans. Political commitment is not an arbitrary variable and cannot be exhibited by or driven by anyone other than the national government. For this reason political commitment is the first of the five TB DOTS policy components (Stop TB Partnership and World Health Organization 2006, WHO 2014). Political commitment is not an element which can be “bought” through donor funding, nor can it be transferred as part of a policy transfer and adaptation process. However, a major counter-pressure to the need for national political commitment is the influence of international policy makers.

This research confirms the findings of Fox et al. (Fox, Goldberg et al. 2011) that political commitment cannot be said to have been exhibited until the elected and appointed representatives of the country demonstrate:

1) *Expressed commitment* – giving verbal and written endorsement to the policy;



2) *Bureaucratic commitment* – establishing or reforming bureaucratic structures to facilitate implementation, adoption of laws and regulations to facilitate the policy, establishing monitoring and evaluation systems to measure change the policy has brought about; and

3) *Financial commitment* - ensuring sustained and ongoing funding for the implementation of the policy.

This research demonstrates two very different understandings of *political commitment*.

There is a PNG construct of political commitment and a global construct of political commitment. This significant difference posed major challenges in the formulation and implementation of the 2006 policy.

The global actors in this process conceptualize political commitment in terms used by the *health system strengthening* movement's (WHO 2007, Atun, de Jongh et al. 2010, Atun 2012) construct of leadership and governance which is framed in terms such as – *“Policy environment, regulatory environment, stewardship function, and structural arrangements for purchasers, providers, and market regulators. WHO judges that good governance means strategic policy frameworks exist and are combined with effective oversight, coalition building, the provision of appropriate regulations and incentives, attention to system design, and accountability”* (Atun, Weil et al. 2010).

The PNG construct of political commitment is very different. Political commitment and leadership is shaped by the deeply rooted cultural imperative of loyalty to wantok whatever the circumstance (Okole 2003, Kurer 2007, Dix and Pok 2009). This even

transcends the concept of the PNG nation and the national good. At the political level wantokism has evolved to the point where the political process of Parliamentary elections, political party alliances and voting decisions are driven by clientelism. Decisions at the political level are driven by maximizing benefit for electors. Political commitment is measured in terms of material returns to supporters in a clientelist political system. Governance structures have evolved to serve these fundamental cultural imperatives of wantokism in appointments and in its structure. Health system governance is a product of these cultural institutions. The result is corruption and nepotism in appointments with institutionalized low capacity, poor performance, and lack of accountability throughout the health system. The health system is not structured so as to be accountable and responsible for the provision of services (Research Field Visit Notes May 2007, Research Field Notes November 2005, Research Field Notes November 2006). Essentially the impact of the governance reforms brought about by the *1977 Organic Law on Provincial Government* and the *1995 New Organic Law on Provincial and Local Level Government* created a disconnection between the three levels of the PNG health system, which has become entrenched in health service provision down to the HC level. The result was a lack of accountability between the three levels of the health system – national, provincial and district, and a lack of supervision from, and accountability to, higher levels in the health system with absenteeism, poor staff attitudes and behaviour towards clients and low morale. There was a significant decline in all health infrastructure. Most importantly there was a lack of trust by the communities in the health service, and a lack of engagement with the communities by the health service.

This is why the health system was and is not able to deliver global health initiatives and achieve targets set by global actors and programs. Global policy actors do not have the capacity to change this. This change must come from within PNG. It requires a new form of political commitment at all political levels in PNG.

It is this PNG construct of political commitment and the consequent dysfunction within the PNG health system which formed the *policy context* for the development of the 2006 TB DOTS policy. The difficulties and challenges were well documented and well known by all policy actors in the 2006 policy process. It was well known that the ability of the PNG health system to deliver even basic primary care services had been in decline since Independence and the rate of decline had increased since the *1995 New Organic Law on Provincial and Local Level Government* completely devolved responsibility for service provision, including health to the lowest level of government which had no capacity to implement policy or provide basic services. As a result, by 2006 up to 50% of Aid Posts (the obvious place to undertake DOT) were closed in parts of PNG with people having to walk for hours, even days, to attend an Aid Post or HC for health care. Health Patrols, which were meant to fill health system gaps in remote villages were not happening in most parts of PNG due to lack of funding, lack of transport, lack of supervision and low staff morale. This policy context was a direct result of an absence of political commitment to the provision of basic health services. Aid donors knew this. Technical consultants funded by the donors, along with multiple reports, also funded by donors, had repeatedly documented this fact.

Applying the Fox et al. framework to the 2006 TB policy there was definite *expressed commitment* to a TB control policy. This took the form of the Minister for Health

moving TB to a tier 1 policy disease with the adoption of the 2006 TB policy. There was even increased funding from the PNG recurrent budget such that by 2011 all TB medications were being purchased by the PNG government. This was a demonstration of *financial commitment*.

The *2007 Provincial Health Authority Act* was an attempt to redress the fragmentation of the health system brought about by the 1995 *New Organic Law on Provincial Government and Local Level Government* by bringing rural health services and hospital services back under one authority with clear central reporting and accounting responsibilities. This was an example of *bureaucratic commitment* - establishing bureaucracies and enacting legislation to facilitate the implementation of the policy (Fox, Goldberg et al. 2011). However, only three provinces or the then 20 provinces have taken the opportunity to accept this voluntary legislation. The loss of control over resources which would have resulted from endorsing the 2007 Provincial Health Authority Act, meant it was not acceptable to the majority of the provinces in PNG. The second, and most important component, of political commitment, *bureaucratic commitment*, was absent. There was no commitment to establishing bureaucracies, laws and regulations which facilitated the implementation of the policy.

Political commitment to TB is hard to exhibit in PNG because it requires addressing and discussing overwhelming cultural institutions in a deeply traditional country. In PNG there is often consensus, a sense of the “common good”, about the need for effective health policy. However, this is superseded by the cultural, political and institutional imperatives we have identified and examined in the PNG setting, so that the governance structures and institutional behaviours ensure there are no structures capable of delivering those very policies. This is the crux of the policy development

and implementation dilemma in PNG. *“How can national policies, on which there is little substantive disagreement, be translated into effective programmes and implemented in a context characterised by differing institutional, political and group based priorities and interests, and where ‘the state’ is seen by many as a distant actor, at best?”*(Bolger, Mandie-Filer et al. 2005)

Political instability has undermined the capacity of the PNG state to take advantage of considerable funding levels for health policies in general, and TB control in particular. *“It also raises questions about the role and functioning of modern state institutions (including efforts to strengthen their capacity) in societies which are guided substantially by traditional cultural beliefs, relationships, leadership styles, and knowledge systems. Other traditional, nonunitary states with diverse and dispersed populations struggle with similar tensions. The question for PNG is how central or marginal these factors are to success in the health sector.”*(Bolger, Mandie-Filer et al. 2005)

It is only political commitment from the policy actors at all levels of government in PNG who can ultimately answer this question. What do Papua New Guineans see as the function of the state and do they value the services delivered by the state as worthwhile enough to bring about radical changes in the style of political commitment being currently exercised?

#### **11.4 Agenda setting in the 2006 TB policy**

This research shows that donors can and do influence policy formulation and agenda setting and in so doing may and do neglect local conditions and provide funding which

both diminishes the role of the state and detracts from the opportunity of the national government to be politically committed.

TB was not a policy priority disease in PNG before 2006. The National Health Plan 2000-2010 (GovPNG 2000, Mann 2006) identified HIV and Malaria as the PNG government and NDOH so called tier 1 policy priority diseases. TB was a tier 2 disease. The 2006 policy was not a policy which was driven from within PNG by groups at the political, NDOH, NGO or community levels as a result of a documented significant change in the burden of TB.

The agenda setting process took place largely outside of PNG and was driven by global actors and their agendas. The press coverage which raised awareness of TB in PNG was driven by the Australian press, and was framed in terms of a “threat from the north” to Australia resulting from the documentation of increased TB and MDR-TB in Western Province Papua New Guineans crossing the Torres Strait border for treatment in Australian HCs. TB in PNG came onto the Australian policy agenda before it came onto the PNG policy agenda. The newly established Global Fund was successful in mobilizing significant levels of funding for the control of HIV, TB and Malaria. It received funding from Australia which had to be directed to funding HIV, TB and Malaria in the Pacific region. This increased availability of funds for TB and the increased influence of international players on policy paradoxically undermined the opportunity for local adaption of policy and political commitment. WHO was actively advocating for TB DOTS as the “evidence based” policy solution for the global TB emergency. The policy priorities agenda of these three key donors came together or converged in 2006.

The power to influence the policy agenda setting process in PNG was exerted by these external actors in two ways.

Firstly, this influence and power was exerted through the significant levels of donor aid, making up a major portion of the health budget for the provision of even basic health services across every area of the health system. In the period leading up to 2006 Australia was the largest donor to the health sector (Asian Development Bank 2003, Foster, Condon et al. 2009). By 2006 the Global Fund with the Round 3 Malaria Grant (GFATM 2004) and the Round 4 HIV/AIDS (GFATM 2004) was also a major donor. The dependence on aid is such that donor funds determine if, and when, a disease control program will commence. When donor funds are no longer available disease control programs simply cease, even if this will result in higher mortality and morbidity and contribute to the emergence of drug resistant strains of TB. This was the case when the Round 6 Grant was suspended due to fraudulent use of funds (OIG GFATM 2014) and when there was a six month time period with no funds from June 2013, when the Round 6 Grant finished, until interim funding was secured (Aia 2012).

The second was through the provision of technical experts or advisers in key roles of influence with NDOH. Whilst nominally not in “line positions” for disease control policy formulation or implementation these advisers did, de facto, take on line responsibility due to the low capacity within the NDOH. They become policy entrepreneurs for the particular policy of the organization for which they work. The 2004 appointment of Dr Yadav as the WHO Technical Adviser with extensive experience in TB DOTS in India was a key point in the policy process leading to the

2006 TB policy. This policy actor came with one policy approach. There is no indication in this research of a policy debate about which policy approach was best for TB control in PNG. His appointment, and the managerial skills and knowledge he brought, meant the concerns of international donors about the NTP were overcome and resulted in the 2006 TB policy. The 2006 policy had goals and targets determined by, and taken directly from, the 2006 Stop TB Strategy 2006-2015 (Stop TB Partnership and World Health Organization 2006) of achieving a DOTS population coverage of 80%, a case detection rate of 70%, and treatment success rate of 85%. Given the PNG context with limited capacity at the NDOH and fragmentation of the health system down to the provincial and district level, with every indication that in fact the health service was declining in coverage and quality, these targets were unrealistic in a five year grant time frame. These were targets to achieve a global policy, not targets which had been developed taking into consideration the PNG context and which could be realistically achieved in such a period.

The result was a TB DOTS policy which did not deal with the major governance constraints and which in order to meet the donors' objectives, reporting requirements and time frame by-passed the PNG government health system whilst at the same time using the *health system strengthening* terminology as a principal justification and objective for the policy.

Global Fund *Guiding Principle C* states that the Global Fund grants need to "*reflect national ownership and respect country-led formulation and implementation processes*" (GFATM 2001). Global Fund *Guiding Principle F* states that Global Fund grants need to "*take into account local realities and priorities*". Global Fund *Guiding*



*Principle H3 states that GFATM funded Grants would “support the substantial scaling up and increased coverage of proven and effective interventions, which strengthen systems for working within the health sector, across government departments, and with communities”.*

The WHO *Global Plan to Stop TB 2006-2015 – Actions for Life - Towards a World Free of Tuberculosis* (Stop TB Partnership and World Health Organization 2006), on which the 2006 policy is directly based, emphasized the importance of health systems strengthening. It stated that TB control policy is to *“Contribute to Health System Strengthening (by) actively participating in efforts to improve system-wide policy, human resources, financing, management, service delivery, and information systems.”* (Raviglione and Uplekar 2006).

Further the AusAID consultant Dr Konstantinos’ recommendation to AusAID was that the TB DOTS provided an opportunity to establish a strong PHC system in PNG. He saw that TB DOTS Program, if done well, could help deliver this strong PHC system. *“I really tried to push hard the message of the importance of TB control in PNG, both from the effect on disease, but also as a mechanism of introducing a primary health care structure in the country, if you do it well”* (Konstantinos - Interview 7th May 2008).

The international influence brought to bear by these key actors, while integral to the TB formulation and policy agenda has arguably undermined the long-term success of the policy for two reasons. Firstly, the international community influenced the policy process with both funding and expertise during the initial policy development phase. PNG response was confined to acceptance and response to advice and funding offers.

Such a role undermined PNG ownership of TB as a policy problem. Walt (Walt and Gilson 1994) has pointed to the strong fears of developing countries that policy driven by external donors with scant regard for local conditions and sensibilities may prove irrelevant and impossible to implement. Just as importantly, external donors can develop the policy free from accountability pressures. Second, the structures set up in parallel to the health system to implement the policy meant the policy failed to address the fundamental health system governance constraints arguably further undermining the health system it purported to strengthen.

### **11.5 The Way Forward**

There are several important implications for how policy is formulated and implemented in resource poor settings which this research brings out.

The first is that there are parts of the PNG health system which *do* work. During field visits and interviews it was apparent that there are individuals and groups at the national, provincial and district level who are competent, perform well and achieve well in terms of coverage of interventions and outcomes in their areas of responsibility despite the major health system constraints. Anecdotally these individuals and groups demonstrate strong leadership and a commitment to their local communities along with a lack of willingness to accept the status quo in addressing local health problems and delivering health interventions. There needs to be greater research focused on these successes to provide evidence for what works and why it works. It is this local evidence which should be informing policy formulation and implementation. The successful provinces, districts and HCs where commitment and leadership has been

exercised, with a track record of achieving outcomes, is where health policies need to be trialled, and introduced initially on a small scale with achievable targets and an emphasis on health system strengthening as the starting point. Time-frames for the roll-out of national programs need to be based on this research which shows what is achievable within the local context rather than timeframes which suit the funding cycles of international donors. A smaller financial commitment and one that actually contributed to the rebuilding of the health system would have had the added benefit of synergising TB funding with funding for other health issues like restoring the health system. This was stated in the policy but the implementation actually set up parallel systems undermining what already existed.

Donors need to make decisions about their policy priorities. Is the donor's priority to meet targets for the donor's programs so as to document success according to donors' indicators? Or is it about achieving what is stated in the donor's own charters with regard to stronger and more sustainable health systems using indicators which are true measures of outcomes within PNG? If it is the later then a new approach which does truly take into account the policy context using local evidence must be adopted. There was every indication in 2006 that the health system was not able to implement a national DOTS policy. The more realistic target would be to take those "successes" in the PNG system as the starting point and use local evidence about what does work or not work. Policy formulation and implementation lead times of years, and possibly decades, instead of a hurried short 5 year time frame for the national roll out of interventions which are not achievable, even before policy implementation starts. Future approaches need to initially limit programs to those districts and provinces which seriously address governance reforms and have high levels of accountability and

reporting. Future research needs to focus on what works rather than continuing as per the current approach.

There has been significant research on global health policies, such as TB DOTS and Stop TB, and the success or otherwise of why these policies do or do not make it onto the global policy agenda (Quissell and Walt 2015, Shiffman, Quissell et al. 2015). There is less research on how these policies are transferred to resource limited settings with limited capacity to adapt and implement the policies. This research is a contribution to addressing that knowledge gap. It is in the interests of global donors and also recipient countries to understand what actually takes place in the policy transfer and adaptation process and especially the role of various actors and power relationships when policy transfer takes place.

As this thesis is being finalized there is the first draft of the new WHO *End TB Strategy* (WHO 2015) which will take up from the 2006-2015 Stop TB Strategy (Stop TB Partnership and World Health Organization 2006). The *End TB Strategy* sets the goal of eliminating TB by 2035. The *first* of four principles of the *End TB Strategy* is *Government stewardship and accountability with monitoring and evaluation* (WHO 2015). In the new Strategy DOTS is not the only approach to drug sensitive TB and DOTS-Plus as the approach to MDR-TB. There is openness to the promise of new diagnostics and treatments (Dooley, Nuermberger et al. 2013, Zumla, Schito et al. 2014) now in the pipeline for TB control. The programmatic issues around TB/HIV coinfection and dealing with drug resistant strains of TB (Maeurer, Schito et al. 2014) are also not confined to specific policy approaches i.e. only using the DOTS-Plus approach. Important areas of TB control not addressed in the previous strategies such

as childhood TB (Marais and Graham 2014, Graham, Grzemska et al. 2015) are now identified as an important component of the TB policy problem (WHO 2014).

The political level in PNG must also make hard decisions about what political commitment and leadership is and how it is exercised. This research confirms that political commitment and leadership are the foundations of health policy. The current approach to policy and the manner in which the political process plays out does not serve the people of PNG. The short term materialistic gains of wantokism and clientelism do not result in governance structures which serve the greater good of PNG. Only Papua New Guineans can address these fundamental issues and make changes. This will require the exercise of political commitment and leadership in a way that focuses on the common good rather than clientelism. PNG is a resource rich country and generates large revenues each year. Those revenues are not currently translated into improved health services, education etc. They disappear into the pockets of elites. It is only by true political commitment and leadership from the political level that long term change will come about. This change must come from within and be driven by PNG.

Donors who become part of, and unquestioningly fund, a clientelist system do no service to the very people they aim to help. Whilst ultimate power to bring about change rests at the political level in PNG, donors bring significant power to the policy process as we have seen. The current donor approach of bypassing a weak and dysfunctional health system by creating parallel structures to meet the donor's goals and targets, reporting requirements and accounting needs, in fact undermines and further weakens the PNG health system. This is not health system strengthening.

Finally, researchers must develop and include in health policy research on *agenda setting* and *policy transfer* an analysis of *local context* particularly with regard to *political commitment* and *governance* as the starting point so as to inform the policy formulation, agenda setting and policy implementation process. The three streams framework (Kingdon 2011) as adapted and refined to undertake global health policy analysis by Walt et. al. (Walt and Gilson 1994, Buse, Mays et al. 2006, Walt, Shiffman et al. 2008) provides a robust and tested framework for such analyses and especially for understanding critical power relationships in the policy process, as this research demonstrates. However, recent refinements of these methods by Shiffman and the applications of those refinements to agenda setting (Shiffman and Smith 2007) have focused largely on the influence of global networks in the uptake of global health policies e.g. maternal health (Shiffman 2007, Smith and Rodriguez 2015), TB (Quissell and Walt 2015) and tobacco control policy (Gneiting 2015). The methodologies analyse the agenda setting and policy transfer process from the global health policy perspective with the assumption that the global policy is the most appropriate policy for the resource poor context. Global health partnerships and global policy context are the main variables for analysis and whether global policies come onto the policy agenda. There is little or no consideration of local context as the key variable for analysis in the transfer and adaptation of the global policy by the resource poor. There is the unquestioned assumption that the global policy is what is best for the resource poor to which the policy is being transferred, with little critique or understanding of this process. This overemphasis and focus on the global policy downplays, and even excludes, the local context in determining if the policy is formulated and transferred in such a way as to be implemented and have an actual impact on health outcomes.

Political commitment and governance are not included as variables in these methods. It is the least researched and understood, yet the first and central component of TB control, whether as part of TB DOTS or the new End TB Strategy as this research has demonstrated. The research undertaken for this thesis, and other recent research critically examining PNG social and cultural institutions and their impact on health policy and service provision in PNG (Street 2012, Street 2014), needs to be the starting point in understanding if global policies are appropriate and implementable in PNG.

Analysis of health policy in low-income countries must evaluate the local governance structures and cultural context in determining policy outcomes. As I have argued in this thesis, the local context and governance structures play a vital role in policy success or otherwise. Models for health policy analysis must incorporate analysis of local context and governance structures in order to understand the effect these variables play in determining policy outcomes.

## **11.6 Conclusion**

Analysis of the policy drivers for the development of a TB control policy in PNG must start from the country's unique social, historical and political context. A failure to undertake this contextual analysis resulted in the 2006 TB policy not taking into consideration and failing to understand the complex local context. The result was a policy with no local political commitment or ownership in its implementation, which required parallel structures to be implemented, which had little or no impact on building a sustainable and stronger health system, and which probably had no impact on the burden of TB. The governments competing agendas and priorities within this

context illustrates the complexity of the policy dilemma in PNG. Understanding the resulting tension contributes to understanding the barriers to political commitment of key actors in this process.

If they are to effectively address TB donors and recipient governments need to include an analysis of local context and governance structures as a central component of the policy formulation and implementation process if implementation is to achieve the policy goals and targets. The support offered by donors in policy transfer needs to be cognisant of the long time frame required to develop local capacity in low income settings. The danger of not doing so is not simply a failure to reduce the burden of TB, but the development of policies which contribute to the emergence of drug restraint strains of TB, posing an even greater global public health threat.

Finally, sustainable delivery of health policy requires that *all* aspects of *political commitment* (expressed commitment, institutional commitment, and budgetary commitment) need to be exercised at the political level in order to ensure governance structures which enable the delivery of context specific health policy. In the end this is a matter only Papua New Guineans can address.





## References

- ABC Television - The 7.30 Report. (19 April 2011). "Government shuts down TB clinics." Retrieved 30th March, 2012, from <http://www.abc.net.au/7.30/content/2011/s3196038.htm>.
- Adepoybi - Interview (12th April 2008).
- Adepoybi - Interview (28th January 2010).
- Ahmadova, S., E. Haldal, Ms Karen Johnson, M. I. Quelapio and C. S. B. van Weezenbeek. (2012). "WHO Review of Programmatic Management of Drug Resistant Tuberculosis in PNG." WHO Report Series Number MR/2012/0866, Retrieved 30th April 2013, from [www.usaid.gov/countries/pacific/png/.../png-tb-who-report.pdf](http://www.usaid.gov/countries/pacific/png/.../png-tb-who-report.pdf).
- Aia, P. (2012). "TB Control in PNG & Western Province." TB Control in the PNG-Australia cross-border region: what's needed and why Retrieved 5th June, 2013, from <https://crawford.anu.edu.au/pdf/events/2012/20120523-tb-in-the-png-australia-cross-border.pdf>.
- Aia, P., R. Yadav and A. Konstantinos (2006). Country Status Report of National TB Program, Papua New Guinea, 1997-2005. Port Moresby, National TB Program Unit, Disease Control Branch, National Department of Health, Papua New Guinea.
- Aia, P., R. Yadav, F. Ndenzako and A. Konstantinos (2006). Country Strategic Plan to Stop TB, 2006-2010. Port Moresby, National TB Program Unit, Disease Control Branch, National Department of Health, Papua New Guinea.
- Amo-Adjei, J. (2014). "Political commitment to tuberculosis control in Ghana." Global Public Health **9**(3): 299-311.
- Anonymous 1 - Interview (10th April 2008).
- Anonymous 2 - Interview (11th April 2008).
- Anonymous 3 - Interview (2nd June 2008).
- Anonymous 4 - Interview (18th June 2008).
- Arthur, W. (1992). "Culture and economy in border regions: The Torres Strait case." Australian Aboriginal Studies **2**: 15-33.
- Ashwell, H. and L. Barclay (2010). "Problems measuring community health status at a local level: Papua New Guinea's health information system." Rural and Remote Health **10**: 1-8.
- Asian Development Bank. (2003). "Moving toward a sector-wide approach. Papua New Guinea. The health sector development program experience." Retrieved 28th Oct, 2013, from <http://www.adb.org/sites/default/files/pub/2003/health-sector-development-program-png.pdf>.
- Atun, R. (2012). "Health systems, systems thinking and innovation." Health Policy and Planning **27**(suppl 4): iv4-iv8.
- Atun, R., T. de Jongh, F. Secci, K. Ohiri and O. Adeyi (2010). "Integration of targeted health interventions into health systems: a conceptual framework for analysis." Health Policy and Planning **25**: 104-111.
- Atun, R., D. E. C. Weil, M. T. Eang and D. Mwakyusa (2010). "Health-system strengthening and tuberculosis control." The Lancet **375**(9732): 2169-2178.
- Atun, R. A., N. Lennox-Chhugani, F. Drobniowski, Y. A. Samyshkin and R. J. Coker (2004). "A framework and toolkit for capturing the communicable disease programmes within health systems." The European Journal of Public Health **14**(3): 267-273.
- AusAID (2004). Governance in PNG: A cluster evaluation of three public sector reform activities. Canberra, Australian Agency for International Development.
- AusAID. (2006). "Papua New Guinea - Annual program performance update 2006-07." Retrieved 2nd February, 2014, from [http://www.dfat.gov.au/about-us/publications/Documents/png\\_appr\\_2007.pdf](http://www.dfat.gov.au/about-us/publications/Documents/png_appr_2007.pdf).

- AusAID. (2012). "Tackling Tuberculosis in Western Province, Papua New Guinea. A long term approach to ensure effective and sustained TB services." Retrieved 14th August 2013, from <http://www.ausaid.gov.au/countries/pacific/png/Documents/western-province-tb-strategy-summary.pdf>.
- Axline, W. A. (1984). "Decentralization, provincial policy making and the law in Papua New Guinea." *Public Administration and Development* **4**(4): 305-323.
- Axline, W. A. (1988). "Policy implementation in Papua New Guinea: Decentralisation and redistribution." *The Journal of Commonwealth & Comparative Politics* **26**(1): 72-103.
- Ballif, M., P. Harino, S. Ley, R. Carter, C. Coulter, S. Niemann, S. Borrell, L. Fenner, P. Siba, S. Phuanukoonnon, S. Gagneux and H.-P. Beck (2012). "Genetic diversity of Mycobacterium tuberculosis in Madang, Papua New Guinea." *International Journal of Tuberculosis and Lung Disease* **16**(8): 1100–1107.
- Ballif, M., P. Harino, S. Ley, M. Coscolla, S. Niemann, R. Carter, C. Coulter, S. Borrell, P. Siba, S. Phuanukoonnon, S. Gagneux and H. P. Beck (2012). "Drug resistance-conferring mutations in Mycobacterium tuberculosis from Madang, Papua New Guinea." *BMC Microbiol* **12**: 191.
- Bauze, A. E., L. N. Tran, K.-H. Nguyen, S. Firth, E. Jimenez-Soto, L. Dwyer-Lindgren, A. Hodge and A. D. Lopez (2012). "Equity and Geography: The Case of Child Mortality in Papua New Guinea." *PLoS ONE* **7**(5): e37861.
- Benzian, H., M. Hobdell, C. Holmgren, R. Yee, B. Monse, J. T. Barnard and W. van Palenstein Helderma (2011). "Political priority of global oral health: an analysis of reasons for international neglect." *International Dental Journal* **61**(3): 124-130.
- Berlan, D., K. Buse, J. Shiffman and S. Tanaka (2014). "The bit in the middle: a synthesis of global health literature on policy formulation and adoption." *Health Policy and Planning* **29**(suppl 3): iii23-iii34.
- Blower, S. M. and C. L. Daley (2002). "Problems and solutions for the Stop TB partnership." *The Lancet Infectious Diseases* **2**(6): 374-376.
- Bolger, J., A. Mandie-Filer and V. Hauck. (2005). "Papua New Guinea's health sector - A review of capacity, change and performance issues. (ECDPM Discussion Paper 57F). Maastricht: ECDPM." Retrieved May, 2013, from [http://www.ausaid.gov.au/Publications/Pages/5887\\_4407\\_5885\\_6927\\_4021.aspx](http://www.ausaid.gov.au/Publications/Pages/5887_4407_5885_6927_4021.aspx).
- Bonilla, C. A. and J. Bayonab (2007). "Building political commitment in Peru for TB control through expansion of the DOTS strategy." *Bulletin of the World Health Organization* **85**(5).
- Bonney, N. (1982). "Local Government and political development in Papua New Guinea." *Public Administration & Development* **2**(2): 113.
- Brolan, C. E., S. J. Upham, P. S. Hill, G. Simpson and S. D. Vincent (2011). "Borderline health: complexities of the Torres Strait treaty." *Medical Journal of Australia* **195**(7): 503-506.
- Brown, P. (1997). "TB claims slammed as dangerous." *New Scientist*(19th April 1997): 4.
- Brugha, R. (2008). Global Health Initiatives and Public Health Policy. *International Encyclopedia of Public Health*. H. K. Heggenhougen. Oxford, Academic Press: 72-81.
- Burmester, H. (1982). "The Torres Strait Treaty: Ocean Boundary Delimitation by Agreement." *The American Journal of International Law* **76**: 321-346.
- Buse, K., C. Dickinson, L. Gilson and S. F. Murray. (2007). "How can the analysis of power and process in policy-making improve health outcomes? Moving the agenda forward." *ODI Briefing Papers* **25**, from <http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/478.pdf>.
- Buse, K., N. Mays and G. Walt (2006). The health policy framework: context, process and actors. *Making Health Policy*. London, Open University Press.
- Cammack, D. (2008). "Chronic Poverty in Papua New Guinea." *Background Paper for the Chronic Poverty Report 2008-2009* Retrieved 14th April 2013, from [http://www.chronicpoverty.org/uploads/publication\\_files/CPR2%20Background%20Papers%20Cammack%20New.pdf](http://www.chronicpoverty.org/uploads/publication_files/CPR2%20Background%20Papers%20Cammack%20New.pdf).

- Campos-Outcalt, D. (1991). "Microcomputers and health information in Papua New Guinea: a two year follow-up evaluation." *Health Policy and Planning* **6**(4): 348-353.
- Campos-Outcalt, D., K. Kewa and J. Thomason (1995). "Decentralization of health services in Western Highlands Province, Papua New Guinea: An attempt to administer health service at the subdistrict level." *Social Science & Medicine* **40**(8): 1091-1098.
- Campos-Outcalt, D. and W. Newbrander (1989). "Decentralization of health services in Papua New Guinea." *Health Policy and Planning* **4**(4): 347-353.
- Cantwell, M. F., D. E. Snider, Jr, G. M. Cauthen and I. M. Onorato (1994). "Epidemiology of tuberculosis in the united states, 1985 through 1992." *JAMA* **272**(7): 535-539.
- Cassels, A. and K. Janovsky (1998). "Better health in developing countries: are sector-wide approaches the way of the future?" *The Lancet* **352**(9142): 1777-1779.
- Chansa, C., J. Sundewall, D. McIntyre, G. Tomson and B. C. Forsberg (2008). "Exploring SWAp's contribution to the efficient allocation and use of resources in the health sector in Zambia." *Health Policy and Planning* **23**(4): 244-251.
- Cibulskis, R. and G. Hiawalyer (2002). "Information systems for health sector monitoring in Papua New Guinea." *Bulletin of the World Health Organization* **80**(9): 752-758.
- Clements, J. C., C. Morgan, E. Posanai, H. Polume and C. Sakamoto (2006). "A qualitative evaluation of the immunization program in Papua New Guinea." *Papua New Guinea Medical Journal* **49**(1-2): 5-13.
- Coker, R., R. Atun and M. McKee (2004). "Untangling Gordian knots: improving tuberculosis control through the development of 'programme theories'." *International Journal of Health Planning & Management* **19**: 217-226.
- Coker, R., J. Balen, S. Mounier-Jack, A. Shigayeva, J. Lazarus, J. Rudge, N. Naik and R. Atun (2010). "A conceptual and analytical approach to comparative analysis of country case studies: HIV and TB control programmes and health systems integration." *Health Policy and Planning* **25**(Supplement 1): i21 - i31.
- Conseil, A., S. Mounier-Jack and R. Coker (2010). "Integration of health systems and priority health interventions: a case study of the integration of HIV and TB control programmes into the general health system in Vietnam." *Health Policy and Planning* **25**(suppl 1): i32-i36.
- Cross, G., K. Coles, M. Nikpour, O. Moore, J. Denholm, E. McBryde, D. Eisen, B. Warigi, R. Carter, S. Pandey, P. Harino, P. Siba, C. Coulter, I. Mueller, S. Phuanukoonnon and M. Pellegrini (2014). "TB incidence and characteristics in the remote gulf province of Papua New Guinea: a prospective study." *BMC Infectious Diseases* **14**(1): 93.
- Dakulala, P. (2010). *Response to the Challenge of MDR-TB in PNG*. MDR-TB consensus building Workshop of NDoH, WHO PNG and Partners, Port Moresby, National Department of Health, Papua New Guinea.
- de Sardan, J. P. O. (1999). "A moral economy of corruption in Africa?" *The Journal of Modern African Studies* **37**(01): 25-52.
- de Savigny, D. and T. Adam. (2009). "Systems thinking for health systems strengthening." Retrieved 29th July, 2013, from [http://whqlibdoc.who.int/publications/2009/9789241563895\\_eng.pdf](http://whqlibdoc.who.int/publications/2009/9789241563895_eng.pdf).
- deLeon, P. (1999). *The Stages Approach to the Policy Process: What Has it Done? Where Is It Going?* *Theories of the Policy Process*. P. A. Sabatier. Boulder, Colorado, Westview Press: 19-32.
- deLeon, P. and D. Vogenbeck (2007). *The Policy Sciences at the Crossroads. Handbook of Public Policy Analysis: Theory, Politics, and Methods*. F. Fisher, G. Miller and M. Sidney. Boca Rotan, FL, CRC Press: 3-14.
- Desai, M., J. W. Rudge, W. Adisasmito, S. Mounier-Jack and R. Coker (2010). "Critical interactions between Global Fund-supported programmes and health systems: a case study in Indonesia." *Health Policy and Planning* **25**(suppl 1): i43-i47.
- Dix, S. and E. Pok (2009). *Combating Corruption in Traditional Societies: Papua New Guinea. Corruption, Global Security, and World Order*. R. Rotberg. Massachusetts, World Peace Foundation: 239-259.

- Dolowitz, D. and D. Marsh (1996). "Who Learns What from Whom: a Review of the Policy Transfer Literature." *Political Studies* **44**(2): 343-357.
- Dolowitz, D. P. and D. Marsh (2000). "Learning from Abroad: The Role of Policy Transfer in Contemporary Policy-Making." *Governance* **13**(1): 5-23.
- Dooley, K. E., E. L. Nuermberger and A. H. Diacon (2013). "Pipeline of drugs for related diseases: tuberculosis." *Current Opinion in HIV and AIDS* **8**(6): 579-585.
- Downer, A. (8th May 2007). "Australia's Overseas Aid Program 2006-2007 - Statement by the Honourable Alexander Downer MP Minister for Foreign Affairs." Retrieved 1st April, 2013, from <http://www.budget.gov.au/2007-08/ministerial/download/ausaid.pdf>.
- Downer, A. (9th May 2000). "Australia's Overseas Aid Program 2000-2001 - Statement by the Honourable Alexander Downer MP Minister for Foreign Affairs." Retrieved 1st April, 2013, from <http://www.budget.gov.au/2000-01/minst/download/ausaid.pdf>.
- Downer, A. (9th May 2006). "Australia's Overseas Aid Program 2006-2007 - Statement by the Honourable Alexander Downer MP Minister for Foreign Affairs." Retrieved 2nd April, 2013, from <http://www.budget.gov.au/2006-07/ministerial/html/ausaid-05.htm>.
- Downer, A. (10th May 2005). "Australia's Overseas Aid Program 2005-2006 - Statement by the Honourable Alexander Downer MP Minister for Foreign Affairs." Retrieved 2nd April, 2013, from <http://www.budget.gov.au/2005-06/ministerial/html/ausaid-09.htm>.
- Downer, A. (11th May 2004). "Australia's Overseas Aid Program 2004-2005 - Statement by the Honourable Alexander Downer MP Minister for Foreign Affairs." Retrieved 2nd April, 2013, from <http://www.budget.gov.au/2004-05/ministerial/download/ausaid.pdf>.
- Duke, T. (1999). "Decline in child health in rural Papua New Guinea." *The Lancet* **354**(9186): 1291-1294.
- Elliot, J. (2008, 7th June 2008). "HIV spike in travellers." *The Cairns Post*, from <http://www.fpq.com.au/pdf/media/HIVspikeInTravellers.pdf>.
- Endo, S. (1979). Tuberculosis - Report of the field visit to Papua New Guinea 16-23 February 1979. Western Pacific Regional Office. The World Health Organization.
- Erasmus, E., M. Orgill, H. Schneider and L. Gilson (2014). "Mapping the existing body of health policy implementation research in lower income settings: what is covered and what are the gaps?" *Health Policy and Planning* **29**(suppl 3): iii35-iii50.
- Farmer, P. (2001). "DOTS and DOTS-Plus - Not the Only Answer." *Annals of the New York Academy of Sciences* **953b**(1): 165-184.
- Feachem, R. and O. Sabot (2007). "The Global Fund 2001-2006: A review of the evidence." *Global Public Health* **2**(4): 325-341.
- Flitton, D. (16th February 2015). "Bill Gates fund donates \$18 million to fight tuberculosis in Papua New Guinea." Retrieved 30th March, 2015, from <http://www.smh.com.au/world/bill-gates-fund-donates-18-million-to-fight-tuberculosis-in-papua-new-guinea-20150216-13fy2y.html>.
- Foley, W. A. (2000). "The Languages of New Guinea." *Annual Review of Anthropology* **29**(1): 357-404.
- Foster, M., R. Condon, S. Henderson, K. Janovsky, C. Roche and B. Slatyer. (2009). "Papua New Guinea Country Report. Evaluation of Australian Aid to Health Service Delivery in Papua New Guinea, Solomon Islands and Vanuatu. Working Paper 1." Retrieved May, 2013, from <http://www.ode.ausaid.gov.au/publications/documents/working-paper-health-service-delivery-png.pdf>.
- Fourie, P. (2014). *AIDS and Security in the Twenty-First Century* Pieter Fourie. *Moving Health Sovereignty in Africa - Disease, Governance, Climate Change*. J. J. Kirton, A. F. Cooper, F. Lisk and H. Besada, Ashgate Publishing Ltd.
- Fox, A. M., Y. Balarajan, C. Cheng and M. R. Reich (2014). "Measuring political commitment and opportunities to advance food and nutrition security: piloting a rapid assessment tool." *Health Policy and Planning* (Published online: June 5, 2014 doi: 10.1093/heapol/czu035).

- Fox, A. M., A. B. Goldberg, R. J. Gore and T. Bäringhausen (2011). "Conceptual and methodological challenges to measuring political commitment to respond to HIV." Journal of the International AIDS Society **14**(Suppl 2:S5): 2-13.
- Fox, W. (1958). "The problem of self-administration of drugs; with particular reference to pulmonary tuberculosis." Tubercle **39**(5): 269-274.
- Fox, W. (1979). "The current status of short-course chemotherapy." Tubercle **60**(3): 177-190.
- Frankel, S. (1984). "Peripheral health workers are central to primary health care: Lessons from Papua New Guinea's aid posts." Social Science & Medicine **19**(3): 279-290.
- Gandhi, N. R., A. Moll, A. W. Sturm, R. Pawinski, T. Govender, U. Laloo, K. Zeller, J. Andrews and G. Friedland (2006). "Extensively drug-resistant tuberculosis as a cause of death in patients co-infected with tuberculosis and HIV in a rural area of South Africa." The Lancet **368**(9547): 1575-1580.
- Gandhi, N. R., P. Nunn, K. Dheda, H. S. Schaaf, M. Zignol, D. van Soolingen, P. Jensen and J. Bayona (2010). "Multidrug-resistant and extensively drug-resistant tuberculosis: a threat to global control of tuberculosis." The Lancet **375**(9728): 1830-1843.
- GBD 2013 "Global, regional, and national age–sex specific all-cause and cause-specific mortality for 240 causes of death, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013." The Lancet(0).
- GFATM. (17th February 2012). "Round 6 PNG TB DOTS - Notification Letter 2." Retrieved 5th June, 2014, from file:///C:/Users/JH399/Downloads/PNG-607-G03-T\_NL\_2\_en%20(1).pdf.
- GFATM. (17th Oct 2007). "Round 6 PNG TB DOTS - Implementation Letter 1." Retrieved 30th March, 2011, from file:///C:/Users/JH399/Downloads/PNG-607-G03-T\_IL\_1\_en.pdf.
- GFATM. (17th Oct 2007). "Round 6 PNG TB DOTS - Notification Letter 1." Retrieved 30th March, 2011, from file:///C:/Users/JH399/Downloads/PNG-607-G03-T\_NL\_1\_en%20(3).pdf.
- GFATM. (2001). "The Framework Document of the Global Fund to Fight AIDS, Tuberculosis, and Malaria, Geneva: The Global Fund to Fight AIDS, Tuberculosis, and Malaria." Retrieved 30th September, 2013, from file:///C:/Users/JH399/Downloads/Core\_GlobalFund\_Framework\_en.pdf.
- GFATM. (2004). "Papua New Guinea - Malaria (Round 3) PNG-304-G01-M - Community-based Malaria Prevention and Control in Papua New Guinea - Nationwide Insecticide-treated Nets (ITN) Distribution and Expansion of Confirmed Diagnosis and appropriate treatment of Malaria." Retrieved 9th Dec, 2014, from file:///C:/Users/JH399/Downloads/PNG-304-G01-M\_GPR\_0\_en.pdf.
- GFATM. (2004). "Papua New Guinea HIV (Round 4) PNG-405-G02-H - Scaling up HIV/AIDS prevention, care and treatment through an intensified multi-sectorial community based programme in Papua New Guinea." from <http://portfolio.theglobalfund.org/en/Grant/Index/PNG-405-G02-H>.
- GFATM. (2011). "Monitoring and Evaluation Toolkit - Part 3: Tuberculosis." Fourth Edition. Retrieved 28th October, 2013, from [http://www.theglobalfund.org/documents/monitoring\\_evaluation/ME\\_Part2TB\\_Toolkit\\_en/](http://www.theglobalfund.org/documents/monitoring_evaluation/ME_Part2TB_Toolkit_en/).
- GFATM. (2012). "PNG-607-G03-T - Papua New Guinea." Retrieved 30th March, 2013, from <http://portfolio.theglobalfund.org/en/Grant/Index/PNG-607-G03-T>.
- Gibson, J. and S. Rozelle (2003). "Poverty and Access to Roads in Papua New Guinea." Economic Development and Cultural Change **52**(1): 159-185.
- Gilpin, C., G. Simpson, S. Vincent, T. O'Brien, T. Knight, M. Globan, C. Coulter and A. Konstantinos (2008). "Evidence of primary transmission of multi-drug resistant tuberculosis in the Western Province of Papua New Guinea." Medical Journal of Australia **188**(3): 148 - 152.
- Gilson, L. (2014). "Qualitative research synthesis for health policy analysis: what does it entail and what does it offer?" Health Policy and Planning **29**(suppl 3): iii1-iii5.

- Gilson, L. and N. Raphaely (2008). "The terrain of health policy analysis in low and middle income countries: a review of published literature 1994–2007." Health Policy and Planning **23**(5): 294-307.
- Gneiting, U. (2015). "From global agenda-setting to domestic implementation: successes and challenges of the global health network on tobacco control." Health Policy and Planning: doi:10.1093/heapol/czv1001.
- Godwin, P. (28 May 2013). "Mid Term Review of Papua New Guinea HIV Strategy (2011-2015)." Retrieved 28th April, 2014, from <http://www.fhi360.org/sites/default/files/media/documents/MidTermReviewofPNGHIVStrategy.pdf>.
- GovPNG (2000). Health Vision 2010 - National Health Plan 2000-2010. National Department of Health. Port Moresby, Government of Papua New Guinea.
- GovPNG. (2009). "Papua New Guinea Demographic and Health Survey 2006." Retrieved 15th April 2013, from [http://www.phtpacific.org/sites/default/files/surveys\\_dev\\_reports/90/files/PNG\\_DemographicHealthSurvey-2006\\_2009-07\\_GoPNG.pdf](http://www.phtpacific.org/sites/default/files/surveys_dev_reports/90/files/PNG_DemographicHealthSurvey-2006_2009-07_GoPNG.pdf).
- GovPNG (2010). "National Health Plan 2011–2020 - Summary."
- GovPNG (2010). National Health Plan 2011–2020. Volume 2 (Part B) Reference Data and National Health Profile, Government of Papua New Guinea.
- GovPNG. (2014). "Joint External Review of the National Tuberculosis Programme for Papua New Guinea. 7–21 February 2014." Retrieved 9th June, 2014, from [http://www.stoptb.org/countries/tbteam/docs/1\\_17\\_1196\\_PNG\\_TB\\_review\\_2014.pdf](http://www.stoptb.org/countries/tbteam/docs/1_17_1196_PNG_TB_review_2014.pdf).
- Graham, S. M., M. Grzemska, A. Brands, H. Nguyen, J. Amini, R. Triasih, K. Talukder, S. Ahmed, F. Amanullah, B. Kumar, P. Tufail, A. Detjen, B. Marais, C. Hennig and T. Islam (2015). "Regional initiatives to address the challenges of tuberculosis in children: perspectives from the Asia-Pacific region." International Journal of Infectious Diseases **32**: 166-169.
- Greg Hunt - Parliamentary Secretary for Foreign Affairs. (2007). "Australia Working to Fight Tuberculosis in the Asia Pacific (World TB Day 2007 - Press Release),." Retrieved 30th October, 2014, from <http://www.m2.com/m2/web/story.php/20074C4EA7DAA600B379802572A80001A75F>.
- Hafner, T. and J. Shiffman (2013). "The emergence of global attention to health systems strengthening." Health Policy and Planning **28**(1): 41-50.
- Hall, J. J., J. A. Gillespie, A. Rosewell and P. Mapira (2013). "The Papua New Guinea cholera outbreak: implications for PNG, Australia and the Torres Strait." Medical Journal of Australia **199**(9): 576-577.
- Hanvoravongchai, P., B. Warakamin and R. Coker (2010). "Critical interactions between Global Fund-supported programmes and health systems: a case study in Thailand." Health Policy and Planning **25**(suppl 1): i53-i57.
- Hengene Payani, H. (2000). "Selected Problems in the Papua New Guinean Public Service." Asian Journal of Public Administration **22**(2): 135-160.
- Hiawalyer, G. (2005). "A surveillance information system as a management tool: a report from Papua New Guinea." Sozial- und Präventivmedizin **50**(Supplement 1): S31-32.
- Hill, P. S. (2002). "The rhetoric of sector-wide approaches for health development." Social Science & Medicine **54**(11): 1725-1737.
- Huffer, E. (2005). "Governance, Corruption, and Ethics in the South Pacific." The Contemporary Pacific **17**(1): 118-140.
- Institute for Health Metrics and Evaluation. (2014). "Financing Global Health 2013: Transition in an Age of Austerity." Retrieved 30th Oct, 2014, from [http://www.healthdata.org/sites/default/files/files/policy\\_report/2014/FGH2013/IHME\\_FGH2013\\_Full\\_Report.pdf](http://www.healthdata.org/sites/default/files/files/policy_report/2014/FGH2013/IHME_FGH2013_Full_Report.pdf).

- Jann, W. and K. Wegrich (2007). Theories of the policy cycle. Handbook of Public Policy Analysis: Theory, Politics, and Methods. F. Fisher, G. Miller and M. Sidney. Boca Rotan, FL, CRC Press: 43–62.
- Keeling, A. (2012). "Using Shiffman's political priority model for future diabetes advocacy." Diabetes Research and Clinical Practice **95**(2): 299-300.
- Kingdon, J. W. (2011). Agendas, Alternatives, and Public Policies. Boston, Longman.
- Kirby, T. (2013). "Extensively drug-resistant tuberculosis hovers threateningly at Australia's door Perspectives." Medical Journal of Australia **198**(7).
- Kitur, U. (2012). "Health information challenges for Papua New Guinea." Pacific Health Dialogue **18**(1): 29-31.
- Klugman, B. (2000). "The role of NGOs as agents for change." Development Dialogue **1-2**: 95–120.
- Kochi, A. (1991). "The global tuberculosis situation and the new control strategy of the World Health Organization." Tubercle **72**(1): 1-6.
- Kochi, A. (1994). "Global challenge of tuberculosis." The Lancet **344**(8922): 608-610.
- Kochi, A., B. Vareldzis and K. Styblo (1993). "Multidrug-resistant tuberculosis and its control." Research in Microbiology **144**(2): 104-110.
- Konstantinos - Interview (7th May 2008).
- Konstantinos, A., G. Simpson, T. C. Sorrell and B. J. Marais (2011). "Doing the right thing for tuberculosis control in the Torres Strait Islands (Letter)." Medical Journal of Australia **195**(9): 512.
- Kurer, O. (2007). "Why do Papua New Guinean voters opt for clientelism? Democracy and governance in a fragile state." Pacific Economic Bulletin **22**(1): 39 - 53.
- Kwa, E., S. Howes and S. Lin (2010). Review of the PNG - Australia Development Cooperation Treaty (1999), GovPNG & Aust. Government.
- Lasswell, H. D. (1951). The policy orientation. The Policy Sciences. D. Lerner and H. D. Lasswell. Stanford, Stanford University Press: 3-15.
- Lawn, S. D. and A. I. Zumla (2011). "Tuberculosis." The Lancet **378**(9785): 57-72.
- Lawrence, D. (1998). "Customary exchange in the Torres Strait." Australian Aboriginal Studies **2**: 13-25.
- Lederman, R. (1990). "Big Men, Large and Small? Towards a Comparative Perspective." Ethnology **29**(1): 3-15.
- Lederman, R. (2001). Big Man, Anthropology of. International Encyclopedia of the Social & Behavioral Sciences. N. J. Smelser and P. B. Baltes. Oxford, Pergamon: 1162-1165.
- Leichter, H. (1979). A comparative approach to policy analysis: health care policy in four nations. Cambridge, Cambridge University Press
- Levy, M., P. Dakulala, J. Koiri, G. Stewart and V. Krause (1998). "Tuberculosis control in Papua New Guinea." Papua New Guinea Medical Journal **41**(2): 72-76.
- Ley, S. D., I. Riley and H.-P. Beck (2014). "Tuberculosis in Papua New Guinea: from yesterday until today." Microbes and Infection **16**(8): 607-614.
- Li, J., P. Roche, J. Spencer and National Tuberculosis Advisory Committee (2004). "Tuberculosis notifications in Australia 2003." Communicable Diseases Intelligence **28**(4).
- Lijphart, A. (1999). Patterns of Democracy, Yale University Press.
- Lokuge, K., K. Salee and A. Konstantinos (2012). Tuberculosis control in the Torres Strait region: What's needed and why? Report following a public forum. Development Policy Centre Discussion Paper 22. Canberra, Crawford School of Public Policy, The Australian National University.
- Lu, C., M. T. Schneider, P. Gubbins, K. Leach-Kemon, D. Jamison and C. J. L. Murray (2010). "Public financing of health in developing countries: a cross-national systematic analysis." The Lancet **375**(9723): 1375-1387.
- Maeurer, M., M. Schito and A. Zumla (2014). "Totally-drug-resistant tuberculosis: hype versus hope." Lancet Respiratory Medicine **2**(4): 256-257.
- Mann, N. (2006). Strategic Plan for the Papua New Guinea Health Sector 2006-2008. PNG National Department of Health. Port Moresby.



- Marais, B. J. and S. M. Graham (2014). "Childhood tuberculosis: A roadmap towards zero deaths." *Journal of Paediatrics and Child Health*(doi:10.1111/jpc.12647): 1-4.
- Marais, B. J., M. C. Raviglione, P. R. Donald, A. D. Harries, A. L. Kritski, S. M. Graham, W. M. El-Sadr, M. Harrington, G. Churchyard, P. Mwaba, I. Sanne, S. H. E. Kaufmann, C. J. M. Whitty, R. Atun and A. Zumla (2010). "Scale-up of services and research priorities for diagnosis, management, and control of tuberculosis: a call to action." *The Lancet* **375**(9732): 2179-2191.
- May - Interview (17th June 2008).
- May, R. (2004). *State and society in Papua New Guinea: the first twenty-five years*, ANU E Press.
- May, R. J. (2003). "Turbulence and Reform in Papua New Guinea." *Journal of Democracy* **14**(1): 154-165.
- McBryde, E. (2012). "Evaluation of Risks of Tuberculosis in Western Province Papua New Guinea." Retrieved 28th May, 2013, from [https://www.burnet.edu.au/system/publication/file/3606/2012\\_Evaluation\\_of\\_Risks\\_of\\_Tuberculosis\\_in\\_Western\\_Province\\_PNG.pdf](https://www.burnet.edu.au/system/publication/file/3606/2012_Evaluation_of_Risks_of_Tuberculosis_in_Western_Province_PNG.pdf).
- McCoy, D., S. Chand and D. Sridhar (2009). "Global health funding: how much, where it comes from and where it goes." *Health Policy and Planning* **24**(6): 407-417.
- McCutcheon, P. (18 Jul 2011). "Australia grapples with tuberculosis clinics shutdown." Retrieved 30th March, 2014, from <http://www.abc.net.au/news/2011-07-18/who-interven-es-in-australias-tuberculosis-clinics-shutdown/2798898>.
- Mola, G. and B. Kirby (2013). "Discrepancies between national maternal mortality data and international estimates: the experience of Papua New Guinea." *Reproductive Health Matters* **21**(42): 191-202.
- Mounier-Jack, S., J. W. Rudge, R. Phetsouvanh, C. Chanthapadith and R. Coker (2010). "Critical interactions between Global Fund-supported programmes and health systems: a case study in Lao People's Democratic Republic." *Health Policy and Planning* **25**(suppl 1): i37-i42.
- Müller, I., T. Smith, S. Mellor, L. Rare and B. Genton (1998). "The effect of distance from home on attendance at a small rural health centre in Papua New Guinea." *International Journal of Epidemiology* **27**(5): 878-884.
- Natapei, E. (2012). "Papua New Guinea - National Elections 2012. Report of the Commonwealth Observer Group." Retrieved 7th June, 2013, from <http://www.transparencypng.org.pg/images/misc/TI-Observer-report-2012-Final-2.pdf>.
- NDOH (2005). *National Health Information System - Health Centre Record*. Port Moresby, National Department of Health.
- NDOH. (2009, May 2009). "Ministerial Taskforce on Maternal Health in Papua New Guinea." *Report* Retrieved 2nd May, 2013, from [http://www.unfpa.org/sowmy/resources/docs/library/R149\\_DOH\\_PNGUINEA\\_2009\\_Ministerial\\_Taskforce\\_report\\_final\\_version\\_3.pdf](http://www.unfpa.org/sowmy/resources/docs/library/R149_DOH_PNGUINEA_2009_Ministerial_Taskforce_report_final_version_3.pdf).
- NDOH. (2011). "Tuberculosis in Papua New Guinea: Fact Sheet 2011." Retrieved 15th May, 2013, from [www.health.gov.pg/emergency/TB%20Fact%20Sheet-PNG.doc](http://www.health.gov.pg/emergency/TB%20Fact%20Sheet-PNG.doc).
- NDOH NTP. (2011). "Papua New Guinea National Tuberculosis Management Protocol." Retrieved 21st Oct, 2013, from [http://www.adi.org.au/wp-content/uploads/2013/07/2011\\_NDOH\\_National-TB-Treatment-Protocol.pdf](http://www.adi.org.au/wp-content/uploads/2013/07/2011_NDOH_National-TB-Treatment-Protocol.pdf).
- Nelson - Interview (17th June 2008).
- Newbrander, W., J. Thomason, R.-L. Kolehmainen-Aitken, D. Campos-Outcalt, G. Afo and W. Davidson (1988). "Management Support for Provinces: A Programme for Developing Provincial Health Management Capabilities in Papua New Guinea." *International Journal of Health Planning and Management* **3**: 45-55.
- Newington College. (2009). "Newington Medallist 2009 - Sir Peter Barter Kt OBE." Retrieved 30th May, 2014, from [http://www.newington.nsw.edu.au/wp-content/uploads/2012/06/Biography\\_Peter\\_Barter\\_image.pdf](http://www.newington.nsw.edu.au/wp-content/uploads/2012/06/Biography_Peter_Barter_image.pdf).

- Odhiambo, J. A., M. W. Borgdorff, F. M. Kiambih, D. K. Kibuga, D. O. Kwamanga, L. Ng'ang'a, R. Agwanda, N. A. Kalisvaart, O. Misljenovic, N. J. Nagelkerke and M. Bosman (1999). "Tuberculosis and the HIV epidemic: increasing annual risk of tuberculous infection in Kenya, 1986-1996." *American Journal of Public Health* **89**(7): 1078-1082.
- Ogden, J., G. Walt and L. Lush (2003). "The politics of 'branding' in policy transfer: the case of DOTS for tuberculosis control." *Social Science & Medicine* **57**(1): 179-188.
- OIG GFATM. (5 July 2012). "Audit of Global Fund Grants to the Independent State of Papua New Guinea." Retrieved 9th May, 2013, from [http://www.theglobalfund.org/documents/oig/OIG\\_GFOIG10004AuditPapuaNewGuinea\\_Report\\_en/](http://www.theglobalfund.org/documents/oig/OIG_GFOIG10004AuditPapuaNewGuinea_Report_en/).
- OIG GFATM. (2014). "Investigation of Global Fund Grants to Papua New Guinea - National Department of Health 31 January 2014." from [www.theglobalfund.org/.../OIGGFOIG14002InvestigationReportPapuaNewGuinea\\_Report\\_en/](http://www.theglobalfund.org/.../OIGGFOIG14002InvestigationReportPapuaNewGuinea_Report_en/).
- Okole, H. (2002a). "Political participation in a fragmented democracy: ethnic and religious appeal in Papua New Guinea." *Development Bulletin* **59**: 31-34.
- Okole, H. (2002b). "Insitutional decay in a Melanesian parliamentary democracy: Papua New Guinea." *Development Bulletin* **60**: 37-40.
- Okole, H. (2003). "Political Corruption in Papua New Guinea: Some Causes and Policy Lessons." *South Pacific Journal of Philosophy and Culture* **7**(1): 7-36.
- Okole, H. (2005). "The 'Fluid' Party System of Papua New Guinea." *Commonwealth & Comparative Politics* **43**(3): 362-381.
- Ongugo - Interview (22nd November 2010).
- Ongugo, K., J. Hall and J. Attia (2011). "Implementing Tuberculosis Control in Papua New Guinea: A Clash of Culture and Science?" *Journal of Community Health* **36**: 423-430.
- Pacific Friends of the Global Fund. (2014). "Sir Peter Barter Kt, OBE." Retrieved 5th June, 2014, from <http://www.pacificfriendsglobalfund.org/who-we-are/friends-members/>.
- Parnell, S. (1st March 2008). "Threat from PNG patient flood." *The Weekend Australian*, from <http://www.theaustralian.com.au/news/health-science/threat-from-png-patient-flood/story-e6frg8y6-1111115671597>.
- Parnell, S. (11th June 2007). "Papua bringing diseases to north." *The Australian* Retrieved 30th March, 2014, from <http://www.dailytelegraph.com.au/news/national/papuans-bringing-diseases-to-north/story-e6freuzr-1111113721081>.
- Pawley, A. (2006). *Papuan Languages. Encyclopedia of Language & Linguistics (Second Edition)*. K. Brown. Oxford, Elsevier: 162-170.
- Pawson, R. and N. Tilley (1997). *Realist Evaluation*, SAGE.
- Peabody, J. W., K. Edwards, S. C. Maerki and J. W. Molyneaux. (1995). "Papua New Guinea National Health Plan - Technical Report: Epidemiological, Economic and Organizational Analysis." from <http://www.rand.org/content/dam/rand/pubs/drafts/2008/DRU1223.pdf>.
- Pelletier, D. L., E. A. Frongillo, S. Gervais, L. Hoey, P. Menon, T. Ngo, R. J. Stoltzfus, A. M. S. Ahmed and T. Ahmed (2012). "Nutrition agenda setting, policy formulation and implementation: lessons from the Mainstreaming Nutrition Initiative." *Health Policy and Planning* **27**(1): 19-31.
- Pennas, T. C. (2008). "Advocacy, Communication and Social Mobilization. Evaluation Mission Report: December 1-December 16, 2008." Retrieved 9th June, 2014, from <http://www.stoptb.org/countries/tbteam/viewMission.asp?MID=4483>.
- Phuanukoonnon, S., D. L. Suarkia, L. N. Luke, I. Mueller, J. Usurup, R. Carter, C. Gilpin, C. Coulter, J. McCarthy and P. M. Siba (2008). *Evidence of Primary MDR Resistance among Tuberculosis Cases in Papua New Guinea (Abstract)*. 57th ASTMH Annual Meeting, New Orleans, American Society of Tropical Medicine and Hygiene.
- Pincock, S. (2006). "Papua New Guinea struggles to reverse health decline." *The Lancet* **368**(9530): 107-108.

- Ploeg, A. (1993) "Cultural politics among the Siassi, Morobe province, Papua New Guinea." Journal of the Humanities and Social Sciences of Southeast Asia **149**, 768-780.
- PNG CCM. (2006). "Proposal Form - Sixth Call for Proposals - Expanding and Implementing the Stop TB Strategy in Papua New Guinea." Retrieved 13th April, 2013, from file:///C:/Users/JH399/Downloads/OIG\_GFOIG10004AuditPapuaNewGuinea\_Report\_en%20(1).pdf.
- PNG Government. (2006). "PAPUA NEW GUINEA GOVERNMENT - 2006 - Cabinet Ministers, Departmental Heads." Retrieved 5th June, 2014, from <http://www.pngcanberra.org/aboutpng/Addresses%20of%20PNG%20Ministers%20and%20Dept%20Heads%20doc.pdf>.
- PNGCCM (2006). Proposal Form - Sixth Call for Proposals - Expanding and Implementing the Stop TB Strategy in Papua New Guinea. Port Moresby, The Global Fund to Fight AIDS, TB and Malaria.
- PNGNDOH (2011). National Health Plan 2006-2010, 2011 Sector Performance, Annual Review. Port Moresby, National Department of Health, Papua New Guinea.
- Quissell, K. and G. Walt (2015). "The challenge of sustaining effectiveness over time: the case of the global network to stop tuberculosis." Health Policy and Planning: doi: 10.1093/heap/czv1035.
- Raviglione, M. C. and M. W. Uplekar (2006). "WHO's new Stop TB Strategy." The Lancet **367**(9514): 952-955.
- Reilly, B. (1997). "The alternative vote and ethnic accommodation: New evidence from Papua New Guinea." Electoral Studies **16**(1): 1-11.
- Reilly, B. (1999). "Party politics in Papua New Guinea: A deviant case?" Pacific Affairs **72**(2): 225-246.
- Reilly, B. (2000). "Democracy, Ethnic Fragmentation, and Internal Conflict: Confused Theories, Faulty Data, and the "Crucial Case" of Papua New Guinea." International Security **25**(3): 162-185.
- Reilly, B. (2002). "Political Engineering and Party Politics in Papua New Guinea." Party Politics **8**(6): 701-718.
- Reilly, B. (2006). "Political reform in Papua New Guinea: testing the evidence." Pacific Economic Bulletin **21**(1): 187-194.
- Reilly, B. (2008). "Ethnic conflict in Papua New Guinea." Asia Pacific Viewpoint **49**(1): 12-22.
- Reilly, Q. (1990). Papua New Guinea: resistance encountered and overcome. Achieving Health For All By The Year 2000: Midway report of country experiences. E. Tarimo and A. Creese. Geneva, World Health Organization: 213-228.
- Research Field Notes (November 2005). Papua New Guinea, Independent Health Sector Review, October 2002 – September 2005. Port Moresby.
- Research Field Notes (November 2006). Papua New Guinea, Independent Monitoring and Review Group (Health). Planning Issues for 2007 - Report No. 1. Port Moresby.
- Research Field Visit Notes (May 2007). Papua New Guinea, Independent Monitoring and Review Group (Health). Issues at the Provincial Level and Below - Report No. 2. Port Moresby.
- Riley - Interview (10th February 2010).
- Riley, I. D. (1983). "Population change and distribution in Papua New Guinea: an epidemiological approach." Journal of Human Evolution **12**(1): 125-132.
- Rogers, C., R. Bleakley and W. Ola. (2010). "Rural poverty in remote Papua New Guinea - Case study of Obura-Wonenara District." Retrieved 17th May, 2013, from [https://devpolicy.anu.edu.au/pdf/2011/Rural\\_Poverty\\_Remote\\_PNG\\_Report.pdf](https://devpolicy.anu.edu.au/pdf/2011/Rural_Poverty_Remote_PNG_Report.pdf).
- Rudge, J. W., S. Phuanakoonon, K. H. Nema, S. Mounier-Jack and R. Coker (2010). "Critical interactions between Global Fund-supported programmes and health systems: a case study in Papua New Guinea." Health Policy & Planning **25 Suppl 1**: i48-52.
- Rumsey, A. (1999). "Social segmentation, voting, and violence in Papua New Guinea." Contemporary Pacific **11**(2): 305-333.

- Sabatier, P. A. (1999). *The Need for Better Theories. Theories of the Policy Process*. P. A. Sabatier. Boulder, Colorado, Westview Press.
- Schmid, C. K. (1993). "Cultural identity as a coping strategy towards modern political structures; The Nayudos case, Papua New Guinea." *Bijdragen tot de taal-, land- en volkenkunde / Journal of the Humanities and Social Sciences of Southeast Asia* **149**(4): 781-801.
- Schmidt, M. P., I. M. P. H. Joosen, A. E. P. Kunst, N. S. M. D. P. Klazinga and K. P. Stronks (2010). "Generating Political Priority to Tackle Health Disparities: A Case Study in the Dutch City of The Hague." *American Journal of Public Health* **100**(S1): S210-215.
- Senate of Australia. (November 2010). "Senate Foreign Affairs, Defence and Trade References Committee - The Torres Strait: Bridge and Border." Retrieved 5th June, 2012, from file:///C:/Users/JH399/Downloads/report.pdf.
- Senate of Australia Official Committee Hansard. (2006). "Senate Foreign Affairs, Defence and Trade Legislation Committee Estimates." Retrieved 1st Nov, 2014, from [http://parlinfo.aph.gov.au/parlInfo/download/committees/estimate/9353/toc\\_pdf/4737-5.pdf;fileType=application%2Fpdf#search=%22committees/estimate/9353/0003%22](http://parlinfo.aph.gov.au/parlInfo/download/committees/estimate/9353/toc_pdf/4737-5.pdf;fileType=application%2Fpdf#search=%22committees/estimate/9353/0003%22).
- Senator Anne McEwen. (14 June 2006). "The Senate Delegation Reports - Parliamentary Delegation to the Asia Pacific Parliamentary Forum and to Papua New Guinea." Retrieved 2nd Nov, 2014, from [http://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansards/2006-06-14/0121/hansard\\_frag.pdf;fileType=application%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansards/2006-06-14/0121/hansard_frag.pdf;fileType=application%2Fpdf).
- Senator Lyn Allison and Senator Helen Coonan. (2006). "The Senate Questions on Notice - Overseas Aid." from [http://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansards/2006-06-14/0184/hansard\\_frag.pdf;fileType=application%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansards/2006-06-14/0184/hansard_frag.pdf;fileType=application%2Fpdf).
- Serjeantson, S. W., R. L. Kirk and P. B. Booth (1983). "Linguistic and genetic differentiation in New Guinea." *Journal of Human Evolution* **12**(1): 77-92.
- Sherry, J., S. Mookherji and L. Ryan. (March 2009). "The Five-Year Evaluation of the Global Fund to Fight AIDS, Tuberculosis, and Malaria." Retrieved 30th September, 2013, from file:///C:/Users/JH399/Downloads/TERG\_FiveYearEvaluationSynthesisOfSAs\_Report\_en.pdf.
- Shiffman, J. (2007). "Generating Political Priority for Maternal Mortality Reduction in 5 Developing Countries." *American Journal of Public Health* **97**(5): 796-803.
- Shiffman, J., K. Quissell, H. P. Schmitz, D. L. Pelletier, S. L. Smith, D. Berlan, U. Gneiting, D. Van Slyke, I. Mergel, M. Rodriguez and G. Walt (2015). "A framework on the emergence and effectiveness of global health networks." *Health Policy and Planning*: doi: 10.1093/heapol/czu1046.
- Shiffman, J. and S. Smith (2007). "Generation of political priority for global health initiatives: a framework and case study of maternal mortality." *The Lancet* **370**(9595): 1370-1379.
- Shiffman, J. and R. R. Ved (2007). "The state of political priority for safe motherhood in India." *BJOG: An International Journal of Obstetrics & Gynaecology* **114**(7): 785-790.
- Simpson, G., P. Clark and T. Knight (2006). "Changing patterns of tuberculosis in Far North Queensland (Letter)." *Medical Journal of Australia* **184**(5): 252.
- Simpson, G., C. Coulter, J. Weston, T. Knight, R. Carter, S. Vincent, L. Robertus and A. Konstantinos (2011). "Resistance patterns of multidrug-resistant tuberculosis in Western Province, Papua New Guinea." *The International Journal of Tuberculosis and Lung Disease* **15**(4): 551-552.
- Simpson, G. and T. Knight (1999). "Tuberculosis in Far North Queensland, Australia." *The International Journal of Tuberculosis and Lung Disease* **3**(12): 1096-1100.
- Smith, B. (1997). "The decentralization of health care in developing countries: organizational options." *Public Administration and Development* **17**: 399-412.

- Smith, S. L. and M. A. Rodriguez (2015). "Agenda setting for maternal survival: the power of global health networks and norms." Health Policy and Planning: doi:10.1093/heapol/czu1114.
- Standish, B. (1983). "Power to the people? Decentralization in Papua New Guinea." Public Administration and Development **3**: 223-238.
- Standish, B. (2007). "The dynamics of Papua New Guinea's democracy: an essay." Pacific Economic Bulletin **22**(1): 135-157.
- Stop TB Partnership and World Health Organization. (2006). "Global Plan to Stop TB 2006–2015." Retrieved 28th Oct, 2008, from <http://www.stoptb.org/assets/documents/global/plan/GlobalPlanFinal.pdf>.
- Strathern, A. (1993) "Violence and political change in Papua New Guinea." Journal of the Humanities and Social Sciences of Southeast Asia **149**, 718-736.
- Street, A. (2012). "Seen by the state: Bureaucracy, visibility and governmentality in a Papua New Guinean hospital." The Australian Journal of Anthropology **23**(1): 1-21.
- Street, A. (2014). *Biomedicine in an Unstable Place : Infrastructure and Personhood in a Papua New Guinean Hospital*. Durham, Duke University Press.
- Styblo, K. (1978). "State of the art: epidemiology of tuberculosis." Bulletin of the International Union Against Tuberculosis **53**: 141-148.
- Styblo, K. (1985). "The relationship between the risk of tuberculous infection and the risk of developing infectious tuberculosis." Bulletin of the International Union Against Tuberculosis **60**(3-4): 117-119.
- Sundewall, J. and K. Sahlin-Andersson (2006). "Translations of health sector SWAPs—A comparative study of health sector development cooperation in Uganda, Zambia and Bangladesh." Health Policy **76**(3): 277-287.
- Tao, J. (1975). *Tuberculosis - Report on a field visit to Papua New Guinea 11-13 August 1975*. Western Pacific Regional Office. World Health Organization.
- te Lintelo, D. J. H. (2012). "Measuring Political Commitment to Reducing Hunger and Under-nutrition: Can it be Done and Will it Help?" IDS Bulletin **43**: 65-73.
- Thomason, J. and P. Kase (2009). Chapter 7 - Policy Making in Health. Public Sector Reform Since 2001. Policy Making and Implementation: Studies from Papua New Guinea. R. May. Canberra, ANU E Press.
- Toikilik, S., G. Tuges, J. Lagani, E. Wafiware, E. Posanai, B. Coghlan, C. Morgan, R. Sweeney, N. Miller, A. Abramov, A. Stewart and C. J. Clements (2010). "Are hard-to-reach populations being reached with immunization services? Findings from the 2005 Papua New Guinea national immunization coverage survey." Vaccine **28**(29): 4673-4679.
- Topp, S. (2006). Best Practice or Poor Praxis? HIV/AIDS Policy in Papua New Guinea. Master of Philosophy (Thesis), Oxford University.
- Tuberculosis Coalition for Technical Assistance. (2006). "International Standards For Tuberculosis Care." Retrieved 1st April, 2014, from [http://www.who.int/tb/publications/2006/istc\\_report.pdf](http://www.who.int/tb/publications/2006/istc_report.pdf).
- UNAIDS. (2012). "Global report: UNAIDS report on the global AIDS epidemic 2012." Retrieved 18th May, 2013, from [http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2012/gr2012/20121120\\_UNAIDS\\_Global\\_Report\\_2012\\_en.pdf](http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2012/gr2012/20121120_UNAIDS_Global_Report_2012_en.pdf).
- UNDP. (2015). "About Papua New Guinea." Retrieved 30th March, 2015, from [http://www.pg.undp.org/content/papua\\_new\\_guinea/en/home/countryinfo/](http://www.pg.undp.org/content/papua_new_guinea/en/home/countryinfo/).
- UNDP. (2015). "PNG Millenium Development Goal Indicators." Retrieved 9th August, 2015, from <http://mdgs.un.org/unsd/mdg/SeriesDetail.aspx?srid=766&crd=598>.
- Velayati, A. A., M. R. Masjedi, P. Farnia, P. Tabarsi, J. Ghanavi, A. H. ZiaZarifi and S. E. Hoffner (2009). "Emergence of New Forms of Totally Drug-Resistant Tuberculosis Bacilli Super Extensively Drug-Resistant Tuberculosis or Totally Drug-Resistant Strains in Iran." Chest **136**(2): 420-425.
- Vincent, S. D. (2011). "A clinician's perspective on providing TB services in the Torres Strait." Medical Journal of Australia **195**(9): 506-507.

- Volmink, J. and P. Garner. (2007). "Directly observed therapy for treating tuberculosis (Review)." *Cochrane Database of Systematic Reviews Issue 4* Retrieved 28th Oct, 2013, from <http://www.thecochranelibrary.com/userfiles/ccoch/file/CD003343.pdf>.
- Walt, G. and L. Gilson (1994). "Reforming the health sector in developing countries: the central role of policy analysis." *Health Policy and Planning* **9**(4): 353-370.
- Walt, G. and L. Gilson (2014). "Can frameworks inform knowledge about health policy processes? Reviewing health policy papers on agenda setting and testing them against a specific priority-setting framework." *Health Policy and Planning* **29**(suppl 3): iii6-iii22.
- Walt, G., L. Lush and J. Ogden (2004). "International Organizations in Transfer of Infectious Diseases: Iterative Loops of Adoption, Adaptation, and Marketing." *Governance* **17**(2): 189-210.
- Walt, G., J. Shiffman, H. Schneider, S. F. Murray, R. Brugha and L. Gilson (2008). "'Doing' health policy analysis: methodological and conceptual reflections and challenges." *Health Policy and Planning* **23**(5): 308-317.
- Walton, G. (2013a). "The limitations of neoliberal logic in the anti-corruption industry: Lessons from Papua New Guinea." *Crime, Law and Social Change*: 1-18.
- Walton, G. W. (2013b). "An argument for reframing debates about corruption: Insights from Papua New Guinea." *Asia Pacific Viewpoint* **54**(1): 61-76.
- Walton, G. W. (2013c). "Is all corruption dysfunctional? Perceptions of corruption and its consequences in Papua New Guinea." *Public Administration and Development* **33**(3): 175-190.
- WHO. (1999). "What is DOTS? : a guide to understanding the WHO-recommended TB control strategy known as DOTS." *World Health Organization WHO/CDS/CPC/TB/99.270* Retrieved 27th May, 2014, from [http://apps.who.int/iris/bitstream/10665/65979/1/WHO\\_CDS\\_CPC\\_TB\\_99.270.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/65979/1/WHO_CDS_CPC_TB_99.270.pdf?ua=1).
- WHO. (2000). "The World Health Report 2000 : Health Systems - Improving Performance." Retrieved 30th March, 2013, from [http://www.who.int/entity/whr/2000/en/whr00\\_en.pdf?ua=1](http://www.who.int/entity/whr/2000/en/whr00_en.pdf?ua=1).
- WHO. (2002). "An Expanded DOTS Framework for Effective Tuberculosis Control." *World Health Organization WHO/CDS/TB/2002.297* Retrieved 5th June, 2013, from [http://apps.who.int/iris/bitstream/10665/67232/1/WHO\\_CDS\\_TB\\_2002.297.pdf](http://apps.who.int/iris/bitstream/10665/67232/1/WHO_CDS_TB_2002.297.pdf).
- WHO. (2003). "Treatment of tuberculosis - guidelines for national programmes." *World Health Organization 3rd Edition* Retrieved 28th May, 2014, from [http://whqlibdoc.who.int/hq/2003/who\\_cds\\_tb\\_2003.313\\_eng.pdf](http://whqlibdoc.who.int/hq/2003/who_cds_tb_2003.313_eng.pdf).
- WHO. (2006). "Guidelines for the programmatic management of drug-resistant tuberculosis." Retrieved 30th October, 2013, from [http://www.stoptb.org/assets/documents/resources/publications/technical/tb\\_guidelines.pdf](http://www.stoptb.org/assets/documents/resources/publications/technical/tb_guidelines.pdf).
- WHO. (2007). "Everybody business : strengthening health systems to improve health outcomes : WHO's framework for action." Retrieved 30th March, 2013, from [http://www.who.int/healthsystems/strategy/everybodys\\_business.pdf](http://www.who.int/healthsystems/strategy/everybodys_business.pdf).
- WHO. (2011). "Country Health Profiles - Papua New Guinea pp 321-329." Retrieved 7th Feb, 2014, from [www.wpro.who.int/countries/png/25PNGpro2011\\_finaldraft.pdf](http://www.wpro.who.int/countries/png/25PNGpro2011_finaldraft.pdf).
- WHO. (2011). "Global tuberculosis control: WHO report 2011." Retrieved 30th March, 2013, from [http://whqlibdoc.who.int/publications/2011/9789241564380\\_eng.pdf](http://whqlibdoc.who.int/publications/2011/9789241564380_eng.pdf).
- WHO. (2011). "Tuberculosis control in the Western Pacific Region: 2010 Report." Retrieved 15th May, 2013, from [http://www.wpro.who.int/tb/documents/tb\\_control\\_report\\_2010.pdf](http://www.wpro.who.int/tb/documents/tb_control_report_2010.pdf).
- WHO. (2012). "Global Tuberculosis Report 2012." Retrieved 5th June, 2013, from [http://apps.who.int/iris/bitstream/10665/75938/1/9789241564502\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/75938/1/9789241564502_eng.pdf).
- WHO. (2013). "Papua New Guinea Tuberculosis Finance Profile." Retrieved 30th May, 2014, from

- [https://extranet.who.int/sree/Reports?op=Replet&name=%2FWHO\\_HQ\\_Reports%2FG2%2FPROD%2FEXT%2FTBFinancingCountryProfile&ISO2=PG&outtype=pdf](https://extranet.who.int/sree/Reports?op=Replet&name=%2FWHO_HQ_Reports%2FG2%2FPROD%2FEXT%2FTBFinancingCountryProfile&ISO2=PG&outtype=pdf).
- WHO. (2014). "The five elements of DOTS." World Health Organization Retrieved 27th May, 2014, from <http://www.who.int/tb/dots/whatisdots/en/>.
- WHO. (2014). "Global Tuberculosis Report 2014." Retrieved 30th November, 2014, from [http://apps.who.int/iris/bitstream/10665/137094/1/9789241564809\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/137094/1/9789241564809_eng.pdf).
- WHO. (2014). "Guidance for national tuberculosis programmes on the management of tuberculosis in children." Retrieved 15th April, 2015, from [http://apps.who.int/iris/bitstream/10665/112360/1/9789241548748\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/112360/1/9789241548748_eng.pdf?ua=1).
- WHO. (2015). "The End TB Strategy - Global strategy and targets for tuberculosis prevention, care and control after 2015." Retrieved 15th August, 2015, from [http://www.who.int/tb/post2015\\_TBstrategy.pdf](http://www.who.int/tb/post2015_TBstrategy.pdf).
- Wickberg, S. (2013). "Papua New Guinea: overview of corruption and anti-corruption. Transparency International Anti-Corruption Resource Centre." Retrieved 26th March, 2014, from <http://www.u4.no/publications/papua-new-guinea-overview-of-corruption-and-anti-corruption/downloadasset/3108>.
- Wigley, S. C. (1975). Tuberculosis and Papua New Guinea 1871 to 1971. Department of Public Health, Port Moresby, Papua New Guinea.
- Wikipedia. (2015). "Cultural institution." Retrieved 30th June, 2015, from [https://en.wikipedia.org/wiki/Cultural\\_institution](https://en.wikipedia.org/wiki/Cultural_institution).
- Williams, R. (1999). "New concepts for old?" Third World Quarterly **20**(3): 503-513.
- World Bank. (1997). "Helping countries combat corruption: The role of the World Bank." from <http://www1.worldbank.org/publicsector/anticorrupt/corruptn/corruptn.pdf>.
- World Bank. (2007). "Strategic Directions for Human Development in Papua New Guinea." Retrieved 5th March, 2014, from <https://openknowledge.worldbank.org/bitstream/handle/10986/13543/40924.pdf?sequence=1>.
- World Vision. (23rd February 2012). "World Vision scales up fight to tackle TB in PNG." Retrieved 14th August, 2013, from [http://www.pacificdisaster.net/pdnadmin/data/original/WorldVision\\_2012\\_PNG\\_TB\\_scales.pdf](http://www.pacificdisaster.net/pdnadmin/data/original/WorldVision_2012_PNG_TB_scales.pdf).
- World Vision. (2013). "Papua New Guinea - Health and human wellbeing." Retrieved 28th August, 2014, from [https://www.worldvision.com.au/Libraries/School\\_Resources/Global-Education-PNG-TB.pdf](https://www.worldvision.com.au/Libraries/School_Resources/Global-Education-PNG-TB.pdf).
- Wurm, S. A. (1983). "Linguistic prehistory in the New Guinea area." Journal of Human Evolution **12**(1): 25-35.
- Zachery Per (3rd Oct. 2006). Health Division to revive defunct rural aid posts. The National. Port Moresby.
- Zumla, A. I., M. Schito and M. Maeurer (2014). "Advancing the portfolio of tuberculosis diagnostics, drugs, biomarkers, and vaccines." The Lancet Infectious Diseases **14**(4): 267-269.
- Zwarenstein, M., J. H. Schoeman, C. Vundule, C. J. Lombard and M. Tatley (1998). "Randomised controlled trial of self-supervised and directly observed treatment of tuberculosis." The Lancet **352**(9137): 1340-1343.

# Appendices

## 1. Profile of Interviewees

There were a total of 18 interviewees for this research. All interviewees signed the Consent Form after having read the Participant Information Sheet. If the section of the consent form was not completed then it was assumed that consent had not been given and the interviewee is not identified. Where the interview volunteered the reason for not being identified the usual reason was that their employment could have been affected by having their views expressed publically. The interviewees who gave permission to be identified were:

- Ms Tope Adepoibi, National Advocacy and Social Mobilization Coordinator, World Vision, Papua New Guinea. 12<sup>th</sup> April 2008 & 28<sup>th</sup> January 2010.
- Dr Tom Konstantinos, Director of Queensland Health TB Services, AusAID consultant to PNG National TB Control Program Jan & Feb 2006. 7<sup>th</sup> May 2008
- Professor Ron May, Emeritus Professor, Department of Political and Social Change, Australian National University; former Director, National Research Institute (NRI), Port Moresby, Papua New Guinea. 17<sup>th</sup> June 2008
- Professor Hank Nelson, Professor of Political Science, Australian National University, Former Professor of Political Science, University of Papua New Guinea. 17<sup>th</sup> June 2008
- Professor Ian Riley retired Professor of Community Medicine, School of Medicine & Health Sciences, University of Papua New Guinea; and former District Medical Officer, Mt Hagen, PNG. 10<sup>th</sup> February 2010



- Dr Kindin Ongugo, Specialist Physician, East New Britain Province, Papua New Guinea. 14<sup>th</sup> April 2008

The backgrounds and organizations of all 18 interviews are set out in the Table below:

<b>Background of Interviewees</b>	
PNG Health Sector	7
International NGO in PNG	5
Bilateral Funder	2
Academic / Researcher of PNG Politics / Policy Process	3
International TB Consultant	1

**Table 11 – Background of Interviewees**

## 2. Ethics Consent form



THE UNIVERSITY OF  
**SYDNEY**

### School of Public Health

International Public Health  
Room 306  
Edward Ford Building A27  
University of Sydney NSW 2006  
AUSTRALIA  
Telephone: +61 2 9351 4375  
Facsimile: +61 2 9351 7420

ABN 15 211 513 464

### **Participant consent form**

Please read carefully and sign if you agree to participate

#### **Study Title:**

**TB DOTS Policy – an analysis and critique of its development and the process of its transfer to low income countries, taking PNG as a case study.**

#### **Participant details:**

Dr/Prof/Mr/Mrs/Miss/Ms (first & last name)

\_\_\_\_\_

By signing this form I give my free and informed consent to being interviewed for the purpose of this research project.

I have read the relevant information sheet and understand the nature and purpose of the research and the following points:

- Approval has been given for this research by the University of Sydney Ethics Committee
- My participation in this project will involve a one-to-one, semi-structured interview. The interview will run no longer than 45 minutes; it may however be shorter if my time is limited. The interview will be arranged at a time and a place that I find convenient. During the interview three themes will be discussed. The themes that will be covered include: (i) *the development of the current international TB programme policies*, (ii) *the role of the various players in the development of current TB programmes*, (iii) *the process of TB programme transfer between international agencies and low income countries, using PNG as a case study*.
- I agree to the interview being audio-taped.
- I am free to decide whether or not I wish to participate in this interview. I am also free to withdraw or leave the interview at any time I wish and for any reason. I do not have to disclose my reasons. If after the interview I request that any of the information obtained not to be used, my request will be honoured. Again, I do not have to disclose my reasons for this decision.
- I **do / do not** give my agreement to my name being mentioned in relation to any information provided by me in any reports or publications from this study. (Cross out the response which is not applicable).

After consideration of these points, I accept the invitation to participate in this study

Date \_\_\_\_\_

Name of participant (printed) \_\_\_\_\_

Signature of participant \_\_\_\_\_

PARTICIPANT CONSENT FORM – Page 1 of 1

**TB DOTS Policy – an analysis and critique of its development and the process of its transfer to low income countries, taking PNG as a case study.**

Contact: John Hall. Mobile: +61 (0) 408716695. Email: jha4451@uni.sydney.edu.au

### 3. Participant Information Sheet



THE UNIVERSITY OF  
**SYDNEY**

#### School of Public Health

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AUSTRALIA  
Telephone: +61 2 9351 4375  
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ABN 15 211 513 464

#### **Participant information sheet**

##### *Study title:*

**TB DOTS Policy – an analysis and critique of its development and the process of its transfer to low income countries, taking PNG as a case study.**

This study is being undertaken by Dr John Hall and Dr James Gillespie from The School of Public Health and The Australian Health Policy Institute at the University of Sydney.

##### **Overview**

You are being invited to take part in an interview discussing Tuberculosis (TB) Directly Observed Treatment, Short Course (TB DOTS). DOTS is currently widely accepted as the major intervention for the control of TB. DOTS has been embraced as the core of the World Health Organization's Stop TB program and generously underwritten by the Global Fund to Fight AIDS, Tuberculosis and Malaria. This study looks at the origins and implementation of TB DOTS to examine the development of a major international health policy. The study then examines how programmes developed by international agencies are transferred and adapted in low income countries.

Please take the time to read the following information carefully. This information should provide you with a full explanation as to why the research is being conducted and allow you to decide whether or not you would like to participate in this interview. You are free to withdraw or leave the interview at any time you wish and for any reason. You do not have to disclose your reasons. If after the interview you request that any of the information obtained not be used, your request will be honoured. Again, you do not have to disclose reasons for this decision.

##### **What the interviews hope to achieve**

These interviews will aim to collect information on how the TB Control programs have been developed. The study investigates the role of the key parties and the impact of international funding and world health agencies in the development of TB Programs. Further it examines the process of transferring these policies to low income countries such as Papua New Guinea. Information obtained from the interviews will complement information obtained through review of literature and reports related to TB DOTS policy.

##### **Your participation**

Your participation in this study will involve a one-to-one, semi-structured interview. The interview should run no longer than 45 minutes; it may however be shorter if your time is limited. The interview will be arranged at a time and a place that is convenient for you. During the interview three themes will be discussed. The themes that will be covered include: (i) *the development of the current international TB programme policies*, (ii) *the role of the various players in the development of current TB programmes*, (iii) *the process of TB programme transfer between international agencies and low income countries, using PNG as a case study*. The interview will be audio recorded and later transcribed for analysis.

##### **How the information will be used**

The information gathered through the interviews will contribute to an analysis and critique of TB DOTS policy development and the process of its transfer to low income countries, taking PNG as a case study. It will contribute to the writing of a book on TB Programmes, the publication of articles in peer reviewed journals and a PhD Thesis being undertaken by John Hall on TB Programmes, at the University of Sydney.

##### **Confidentiality**

Your name will not appear, without your approval, next to any information from the interview.

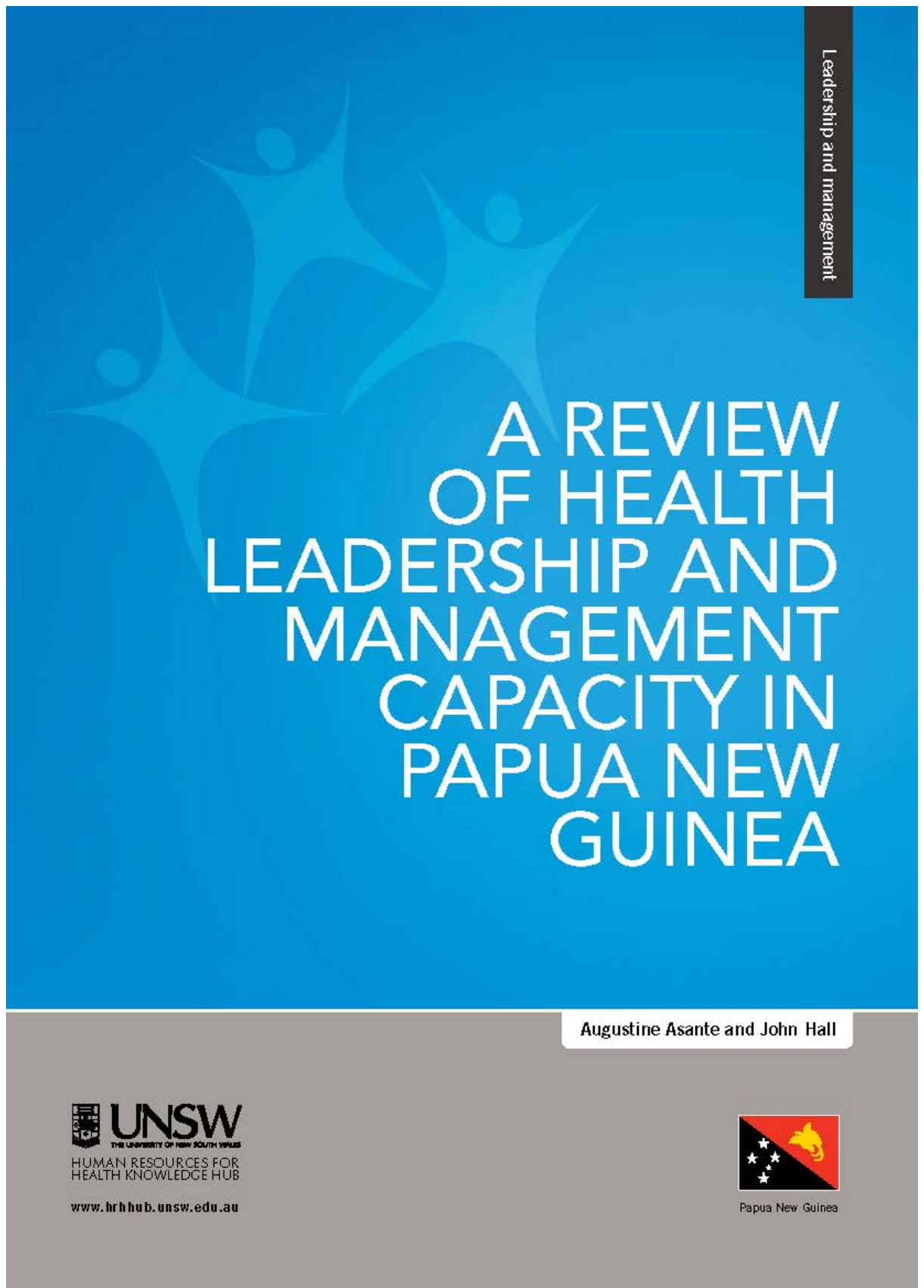
All data will be stored at the University of Sydney for 7 years, in accordance with international research regulations. Following which, it will be destroyed. Any paper work will be stored in locked cabinets and computer files will be password protected.

PARTICIPANT INFORMATION SHEET – Page 1 of 1

**TB DOTS Policy – an analysis and critique of its development and the process of its transfer to low income countries, taking PNG as a case study.**

Contact: John Hall. Mobile: +61 (0) 407 787 257. Email: johnh@health.usyd.edu.au

4. Monograph - Asante, A and Hall, J 2011, A review of health leadership and management capacity in Papua New Guinea, Human Resources for Health Knowledge Hub, University of New South Wales, Sydney



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# ACRONYMS

<b>AIDS</b>	acquired immune deficiency syndrome
<b>AusAID</b>	Australian Agency for International Development
<b>GDP</b>	gross domestic product
<b>GHExp</b>	government health expenditure
<b>HEO</b>	health extension officer
<b>HIV</b>	human resources for health
<b>IMRG</b>	Independent Monitoring Review Group
<b>Lao PDR</b>	Lao People's Democratic Republic
<b>MAKER</b>	Managers taking Action based on Knowledge and Effective use of Resources
<b>MDG</b>	Millennium Development Goal
<b>NDoH</b>	National Department of Health, Papua New Guinea
<b>PNG</b>	Papua New Guinea
<b>PPP</b>	purchasing power parity
<b>UN</b>	United Nations
<b>UNDP</b>	United Nations Development Programme
<b>UNFPA</b>	United Nations Fund for Population Activities
<b>UNICEF</b>	United Nations Children's Fund
<b>US</b>	United States
<b>USD\$</b>	United States dollars
<b>WHO</b>	World Health Organization
<b>WPRO</b>	Western Pacific Regional Office

*A note about the use of acronyms in this publication*

Acronyms are used in both the singular and the plural, e.g. MDG (singular) and MDGs (plural).

Acronyms are also used throughout the references and citations to shorten some organisations with long names.

## EXECUTIVE SUMMARY

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Papua New Guinea has some of the worst health indicators in the Asia-Pacific region. **Maternal mortality ratio has nearly doubled from 370 in 1996 to 733 per 100,000 live births in 2006.**

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This review describes the state of health leadership and management capacity in Papua New Guinea (PNG). The country has a population of about 6.4 million, over 30% of whom are under the age of 15 and about 80% live in rural areas. The country has enjoyed rapid economic growth and a relatively stable political environment in recent years.

According to the Asia Development Bank, PNG achieved an unprecedented eight consecutive years of economic growth in 2009 and sustained private investment despite the global financial crisis.

The rapid growth of the economy has not, however, reflected on the health status of the population. PNG has some of the worst health indicators in the Asia-Pacific region; maternal mortality ratio has nearly doubled from 370 in 1996 to 733 per 100,000 live births in 2006; only about 39% of births are attended by skilled health personnel; HIV remains a generalised epidemic with an estimated 34,100 people living with the virus in 2009 and access to quality health care is limited for many Papua New Guineans. Unless health delivery is drastically scaled up, PNG will miss several of its Millennium Development Goal (MDG) targets.

Under-investment in the health sector by government is believed to have contributed significantly to the poor state of health in PNG. Although as a proportion of gross domestic product (GDP) PNG spends over 3% of its revenue on health (which is relatively higher than the proportion of GDP spent on health in many Asia-Pacific countries), overall health spending has been on the decline in recent years, reflecting in reduction of funding to the National Department of Health (NDoH) in 2009.

Aside from the under-investment by government, weak management and leadership capacity coupled with an inadequate number of health personnel plays a crucial role in the poor performance of the health system. While the actual number of health personnel in PNG remains unclear due to a weak information management system,

some 11,142 personnel of different categories reportedly worked in the health system in 2009. This was made up of 333 medical officers, 2,844 nurses and midwives, 3,883 community health workers, 718 allied health workers, 409 health extension officers, 1,821 support staff and 1,134 other cadres of health workers. Approximately 600 nurses, 600 community health workers and 100 midwives are reportedly required to fill the existing gaps.

The health management and leadership capacity in PNG has been a source of concern for many years and several initiatives have been taken to improve it but with little success. In general, the competence of health managers, especially at the local level, remains weak. Health extension officers (HEOs) who are largely involved in managing the district health service do not seem to have sufficient managerial skills for the task they are expected to perform. Although the majority of HEOs have adequate formal education with a four-year bachelor degree, questions have been raised as to whether there is sufficient management focus in their training to enable them to become good local managers.

Apart from deficient managerial skills, the effectiveness of health managers in the PNG is hampered by the country's weak administrative and management structures. The decentralisation of the health system has created 'management disconnect' especially at the district level.

District managers are responsible for coordinating and implementing national and provincial health plans and standards but they have no control over staff; under the country's Organic Law on Provincial and Local Governments, district health staff report to the district administrator – a political appointee. Similarly, provincial authorities enjoy considerable autonomy and are not compelled to follow national directives, particularly in the allocation of provincial resources. This has resulted in instances where provinces have failed to allocate sufficient funding for health care.

The health management working environment also presents additional challenges to district managers in PNG. One such challenge is lack of supportive supervision. District managers need to be supported by senior managers at provincial and central levels so that they in turn are able to supervise and support sub-district managers.

In PNG, there is evidence that provincial health offices do not provide the necessary supportive supervision to district managers and districts in turn do not sufficiently supervise and support sub-district managers. Other issues found to affect management effectiveness in PNG relate to the poor



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The health management and leadership capacity in PNG has been a source of concern for many years and **several initiatives have been taken to improve it but with little success.**

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functioning of key management support systems such as procurement and supply and health information. Socio-cultural factors associated with PNG's ethnic diversity also affect the effectiveness of local managers.

In summary, the health management and leadership challenges faced by PNG are not unique but mirror the challenges faced by many low-income countries.

The issues affecting the performance of health managers, especially at the district level, are both individual and system related. In seeking to strengthen management and leadership capacity, PNG must not focus only on building the competence of individual managers but also adopting an holistic approach that pays equal attention to systemic and structural issues affecting management performance.

# SNAPSHOT: PAPUA NEW GUINEA

BASIC DEMOGRAPHIC AND SOCIO-ECONOMIC DATA

Population in 2007

**6.4 million**

GDP per capita  
(PPP USD\$) in 2007

**\$2,084**

Life expectancy  
at birth in 2007

**60.7 years**

Under age 5 mortality in 2007

**65 per 1,000 live births**

Maternal mortality in 2005

**733 per 100,000  
live births**

Nursing and midwifery  
density from 2000 to 2007

**5 per 10,000  
people**

Doctor density  
from 2000 to 2007

**1 per 10,000  
people**

## Key to acronyms

GDP gross domestic product  
PPP purchasing power parity  
US\$ United States dollars

*(Adapted from Mola 2009, UNDP 2009, WHO 2009b)*

# INTRODUCTION

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Since 2003, HIV/AIDS has been declared a generalised epidemic. It is estimated that there are about **23,000 to 91,000 HIV-positive individuals in the sexually active population of 15–49 years of age.**

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Papua New Guinea has a population of about 6.4 million, over 30% of whom are under the age of 15 and about 80% live in rural areas. PNG has enjoyed rapid economic growth and a relatively stable political environment in recent years. According to the Asia Development Bank, the country achieved an unprecedented eight consecutive years of economic growth in 2009 and sustained private investment despite the global financial crisis.

The rapid growth of the economy has not, however, reflected on the health status of the population. PNG has some of the worst health indicators in the Asia-Pacific region; maternal mortality is around 733 per 100,000 live births with only about 39% of births attended by skilled health personnel (Mola 2009, UNDP 2010).

The PNG health system remains one of the most under-performing health systems in the region. Reports from an Independent Monitoring Review Group (IMRG) indicate that very little progress has occurred on the health front in the last five to ten years (Hasfeldt et al. 2005, 2006, 2007; IMRG 2008a).

Health care in PNG is provided by the government and a host of non-state, largely church-based providers. The church health services provide and manage almost half of the country's health services (AusAID 2009). Private health care is available through a small private sector and through employment-related health care programs established by overseas-based companies, predominantly in the mining sector. Unregulated traditional healers provide an undocumented amount of health services (Government of Papua New Guinea 2000).

Communicable diseases remain the major causes of morbidity and mortality in all age groups with malaria being the leading cause of all outpatient visits. Since 2003, HIV/AIDS has been declared a generalised epidemic; it is estimated that there are about 23,000 to 91,000 HIV-positive individuals in the sexually active population of 15–49 years (WHO WPRO

2008). However, HIV prevalence seems to have reduced in recent years with the most current fact sheet from the PNG National AIDS Council estimating a new national prevalence of 0.9% in 2009.

Overall about 34,100 people were estimated to be living with HIV in 2009 (PNG National AIDS Council 2010). As in many developing countries, incidence of non-communicable diseases is rising in PNG; creating a double burden of disease.

A key feature of the health system is decentralisation of management and service provision responsibilities to provincial and district levels. The National Department of Health (NDoH) is responsible for setting policy and standards, procuring medical supplies, maintaining surveillance and monitoring systems, managing public hospitals and regulating church-operated programs. Provincial and local governments are individually responsible for the implementation of directives from the NDoH and for financing their own programs.

## PURPOSE AND APPROACH

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The Sixth National Socio-Economic Development Plan 2006–2010 recognises that **the health sector and health care services delivery do not fully meet the requirements of the population, either in quantitative or qualitative terms.**

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The purpose of this review was to describe the current situation of health management and leadership capacity and analyse issues that affect the performance of district health managers. It was intended to inform the development of policy recommendations for improving management and leadership performance in six AusAID priority countries – Cambodia, Fiji, Lao PDR, Papua New Guinea, Solomon Islands and Timor-Leste.

The review was conducted through desk review of both published and grey literature and discussions with key individuals. The first six sections provide a brief description of key aspects of the health system of PNG and the final five sections attempt to assess management and leadership capacity using a modified version of the WHO MAKER<sup>1</sup> framework (WHO 2007).

Key components of the framework used include numbers and distribution of managers, managerial competency, the management working environment, management support systems and socio-cultural context in which managers operate.

A summary of key points about management and leadership in PNG has been provided at the end of this report. Detailed analysis and discussion of the issues identified will be available in a separate paper that brings together all the issues identified from the six countries. This synthesis will be available in 2011 from [www.hrhub.unsw.edu.au](http://www.hrhub.unsw.edu.au)

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<sup>1</sup> Managers taking Action based on Knowledge and Effective use of Resources.

## ACCESS TO HEALTH CARE

Health services in PNG are provided free of charge by government and church-operated providers. Yet many Papua New Guineans have limited access to health care. Access to reproductive health care, in particular, is considerably limited, which partly explains the country's high maternal death rate (Hasfeldt et al. 2006).

Key issues affecting access to health care include geography, finance, human resources and poor quality of care. PNG has a harsh terrain which makes it very costly for health and other services to be delivered to and accessed by the population.

The geographical isolation coupled with the closure of some rural aid posts means many patients from remote districts need to travel significant distances in poor road conditions to access health care. In 2007, for example, it was estimated that 827 or nearly one-third of all aid posts were closed. In provinces such as Eastern Highlands and Enga less than 50% of their aid posts were believed to be functional (Foster et al. 2009, NDoH 2009).

The dearth of health care workers in rural and remote areas affects equitable access to quality care. While some progress has been made in strengthening the medical workforce, notably in the paediatric and surgical sub-specialties (AusAID 2009), the overall human resources for health numbers in PNG remain lower than required for the country's population.

In principle, primary health care services in PNG are provided free of charge to the population. However, in practice, all levels of health care reportedly charge user fees for all services except essential public health services, such as childhood immunisation (AusAID 2009). Some church health facilities also charge user fees similar to facilities in the government sector. Part of the revenue from these fees is used to improve services and to keep local facilities functional.

The level of fee for rural health services is set locally by the provincial authorities as there is no national legislation that deals with establishment of fees for rural health services. The national legislation on fees is applicable only to hospital services provided under the Hospital Act 1994. In government health facilities, the fees and fee exemptions are said to be unregulated and unaudited (McKay and Lepani 2010). In general, the user fees and related expenses coupled with the long distance to facilities are significant barriers to health care access, especially for the poor. There is currently no system of private health insurance but there are proposals to introduce a compulsory scheme for those employed in the formal sector (WHO WPRO 2008).

# FINANCING THE HEALTH SYSTEM

Government health spending represents about 83% of total health expenditure in PNG (AusAID 2009). Under-investment by government is perceived to be a major contributor to the poor performance of the health system. As a proportion of GDP the PNG government spends about 3.5% on average of its revenue on health. Compared to health expenditure as a proportion of GDP in other low income countries this appears relatively high. For example, countries such as Cambodia, Laos and Fiji, on the average spend around 2–3% or less of their GDP on health.

Despite the relatively high proportion of GDP spent on health, total health spending in PNG has been on the decline in recent times, especially when compared with the rise in the country's GDP per capita. Health spending, for example, declined from 3.8% of GDP in 2002 to 3.0% in 2003 and 2004. During the same period, however, GDP per capita (in purchasing power parity terms) rose by about 15% (Figure 1). More recently in the 2009 budget, the health sector emerged as one of the 'biggest losers'. Although the government injected some 46 million Kina of recurrent funds into hospital management services, this was offset by a reduction of 17% of total funding

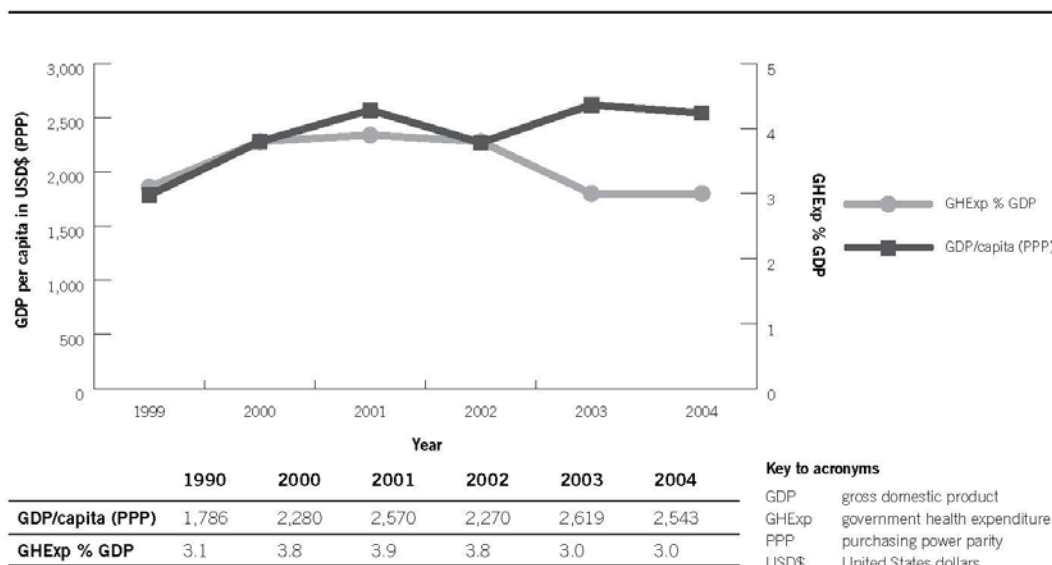
(amounting to 131 million Kina) for the National Department of Health. Additionally, domestic funding for HIV and AIDS was cut from 17 million Kina in 2008 to 5 million Kina in 2009 (Batten 2008).

A significant amount of the health budget in PNG goes into payment of salaries; according to WHO over 80% of recurrent provincial health budgets were allocated to salaries in 2006 (WHO WPRO 2010). Like many developing countries, PNG is reliant on external donor assistance to finance public spending. In 2001, it received overseas development assistance worth 7.2% of the gross national product (USD\$203 million).

In 2004, overseas development assistance accounted for 24% of the health budget (WHO WPRO 2008). External assistance from bilateral partners is provided in the form of both direct budgetary support and targeted project financing to both public and non-profit operators. Other assistance is targeted to specific diseases; beginning in 2005, the Global Fund to fight AIDS, tuberculosis and malaria has provided multi-year grants worth USD\$91 million (WHO WPRO 2008).

**FIGURE 1. GDP PER CAPITA AND GOVERNMENT HEALTH EXPENDITURE AS A PROPORTION OF GDP IN PAPUA NEW GUINEA, 1990 AND 2000-2004**

(Adapted from UNDP 2000, 2002, 2003, 2004, 2005, 2006, 2008)



# HUMAN RESOURCES FOR HEALTH

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With over 80% of the population living in rural areas, **the thrust of the PNG health system is primary health care.**

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The actual number of health workers in PNG remains unclear due to a weak health information management system, particularly at the national level. However, it is estimated that some 11,142 personnel of different categories worked in the health system in 2009. This was made up of 333 medical officers, 2,844 nurses and midwives, 3,883 community health workers, 718 allied health workers, 409 health extension officers (HEO)<sup>2</sup>, 1,821 support staff and 1,134 other cadres of health workers (see Figure 2); (Yambilafuan 2009).

Geographical disparities exist in the distribution of health workers, with a significant bias in favour of urban areas, particularly the capital, Port Moresby. Nationwide, there is a shortage of health workers, in particular a large number of vacant positions in rural and remote areas are reportedly unfilled. Approximately 600 nurses, 600 community health workers and 100 midwives are reportedly required to fill the existing gaps (Yambilafuan 2009).

With over 80% of the population living in rural areas, the thrust of the PNG health system is primary health care (Government of Papua New Guinea 2000). Three levels of health workers are in charge of delivering primary health care services – nursing officers, HEOs and community health workers.

The HEO is an intermediate level health worker who, with minimum supervision, is responsible for a complex mixture of clinical, community health and administrative duties in a health centre area serving a population of 5,000 to 20,000 (In-country reviewer 2011). The HEO cadre of health workforce is unique to PNG and was borne out of necessity to respond to the health needs and demands of the rural people. Its origin dates back to the colonial era in the 1950s when the Australian Colonial Administration introduced the Medical Assistant personnel to provide health services to rural people of PNG (Crouch 1982). In essence, HEOs bridge the gap between doctors and nurses and often operate in senior and middle management positions (Davy 2007).

The supply of new health workers from training institutions in PNG is believed to be insufficient to meet current and future demand (WHO WPRO 2008). From its inception in

1968 to 2004, the University of Papua New Guinea Medical School has trained about 700 doctors, including 100 Pacific Islanders and 50 expatriates (Watters and Scott 2004). Even if all the 700 doctors were alive and working in PNG, and with a population of 5.5 million at that time, there would have been one doctor to every 7,857 people. Based on NDoH health workforce figures for 2009, PNG has about 1.3 health workers<sup>3</sup> per 1,000 population; significantly lower than the WHO standard of 2.3 per 1,000 (WHO 2006).

Aside from the low numbers of trained personnel there are issues with the quality of health worker training in PNG. Midwifery training, in particular, appears to be of low quality with all four training schools in the country producing graduates in the last decade that could not be registered (IMRG 2008b).

This may partly explain why some 'trained' nurses are reportedly without work. In general, health workforce training in PNG is organised at the national level with linkages to training institutions but with insufficient links to Central Agencies, such as the Ministry of Finance and the Department of Personnel Management, which decide budget ceilings and workforce numbers for the public sector (IMRG 2008b). Training is also not adequately linked to provincial needs for health workers although the provinces have the autonomy under the Organic Law to determine the number health workers they can afford to hire (IMRG 2008b).

Another pressing human resource issue is the limited information and knowledge about health personnel costs in PNG. The Human Resource Directorate at the NDoH needs to know this in order to plan within budgeted employee expenditure. However, no detailed employee cost analysis appears to have been undertaken. In the past years, severe fiscal constraints have resulted in the imposition of a moratorium by the Public Service Commission on hiring of new staff across the public sector, including the NDoH. Unlike other countries, migration of health workers does not appear to be a major issue in PNG, however, there is evidence of attrition of health workers from the public sector (Duke et al. 2004), which, coupled with the ageing of the workforce (Yambilafuan 2009), poses a challenge to meeting the current supply shortfalls.

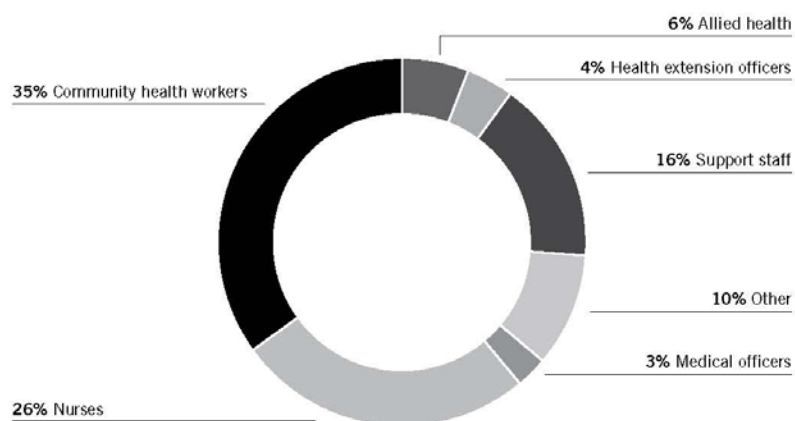
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<sup>2</sup> Estimates from the HEO Association and PNG Medical Board suggest about there are about 672 HEOs in PNG (HEO Association and PNG Medical Board 2009).

<sup>3</sup> Health workers include medical officers (333), nurses and midwives (2,844), community health workers (3,883), allied health workers (718) and health extension officers (409).

**FIGURE 2. DISTRIBUTION OF HEALTH WORKFORCE BY PROPORTION OF CADRES IN PAPUA NEW GUINEA, 2009**

*(Adapted from Yambilafuan 2009)*



# HEALTH MANAGEMENT STRUCTURE

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One of the unintended outcomes of the earlier decentralisation efforts was the **fragmentation of organisational and administrative health structures of the provinces.**

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The structure of health and human resource management in PNG can be understood within the context of decentralisation. Prior to independence, government health services were managed centrally by the National Department of Public Health in Port Moresby through its regional and provincial health offices (Izard and Dugue 2003). However, following the introduction of the Organic Law on Provincial and Local Governments in 1977 and subsequent revisions in 1995, the structure of health management changed significantly with management functions devolved along with funding and service delivery responsibilities to provincial and local governments.

Under the Organic Law, district and local governments currently have the responsibility for managing and supporting their health services with each having different powers and functions in relation to health (WHO WPRO 2008). The National Health Plan 2001–2010 outlines the management responsibilities for each administrative level – national, provincial and local.

Besides developing and implementing overall human resources for health policy, the national level is responsible for developing guidelines and providing support for improving the capacity of provinces to prepare strategic human resource plans. It also monitors the implementation of minimum staffing standards and develops guidelines for improving staff management (Government of Papua New Guinea 2000).

Within the public sector hospital management is divorced from management of other health services (health centres and sub-centres, rural hospitals and aid posts, known collectively in PNG as 'rural health services'). The National Department of Health manages the 19 provincial hospitals while provincial and local governments are responsible for all other services.

The provincial government provides staff and funding for rural health services. Provincial health authorities plan and conduct training for district health managers in addition to developing

strategic and annual human resource plans. They also monitor staff composition and provide updated reports on staff. The provincial health adviser reports to the provincial administrator. Thus, the Provincial Health Office comes under the provincial administration and district-level health facilities under the district administration while the aid posts are the responsibility of the local government (Izard and Dugue 2003).

Given the nature of the decentralisation in PNG, a significant proportion of all health management activities is supposed to occur at the district level, where implementation of minimum staffing standards is expected to take place.

District health managers are required to maintain a staff inventory, provide regular reports on staffing, supervise staff, conduct in-service training and undertake community awareness and education activities. In practice, very little of these appear to occur, as district management still seem to be answerable to provincial managers. The district health managers report technical matters to provincial health authorities but they and staff of health centres, sub-centres and aid-posts also report to the district administrator.

Another key feature of the health and human resource management structure in PNG is the creation of Parallel Health Boards and diffusion of human resource management responsibilities. One of the unintended outcomes of the earlier decentralisation efforts was the fragmentation of organisational and administrative health structures of the provinces. The revised Organic Law of 1995 identified the need to standardise provincial and district health administrative structures (Table 1).

The National Health Administration Act 1997 consequently came into force leading to the establishment of health boards to advise the various levels of government. The National Health Board advises the Health Minister on health policy matters, sets national health standards and approves provincial implementation plans. It also liaises with provincial health boards and monitors their performance.

The provincial health boards advise the provincial governments and coordinate implementation of the national health plan, national health standards, and provincial implementation plans. At the district level, the National Health Administration Act 1997 provides for establishment of district health management committees to be responsible for coordinating the implementation of the national health plan, national health standards and provincial implementation plans (Izard and Dugue 2003).



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The district health managers **report technical matters to provincial health authorities**, but they and staff of health centres, sub-centres and aid-posts also report to the district administrator.

---

Human resource management in the public health sector in PNG is a shared responsibility between a number of government agencies: the National Department of Health, Department of Personnel Management, the various national training institutes and local level health managers (Bolger et al. 2005).

The Department of Personnel Management was established as a central government agency under the Public Service Management Act, 1995, and has a primary responsibility for public sector management, specifically as it relates to performance, human resources and organisation management ([www.dpm.gov.pg](http://www.dpm.gov.pg)). Since its inception the department has controlled most staff management practices in the health sector including recruitment and selection, discipline and performance management.

The National Department of Health and Department of Personnel Management are supposed to work collaboratively in managing the public sector health workers but collaboration between the two departments has reportedly been ineffective (Hasfeldt et al. 2005).

**TABLE 1. GOVERNANCE ARRANGEMENTS IN PAPUA NEW GUINEA**

*(Adapted from Bolger et al. 2005)*

	<b>Political structures</b>	<b>Administrative structures</b>
<b>NATIONAL LEVEL</b>	<ul style="list-style-type: none"> <li>▪ National Parliament</li> <li>▪ National Executive Council</li> <li>▪ Ministries</li> </ul>	<ul style="list-style-type: none"> <li>▪ National Parliament</li> <li>▪ Statutory bodies</li> <li>▪ National Department of Health</li> <li>▪ National Health Board</li> </ul>
<b>PROVINCIAL LEVEL</b> 20 provinces, including the National Capital District.	<ul style="list-style-type: none"> <li>▪ Provincial Assembly</li> <li>▪ Provincial Executive Council</li> <li>▪ Provincial Committees</li> <li>▪ Joint Provincial Planning and Budget Priorities Committee</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provincial Administration</li> <li>▪ Provincial Treasury</li> <li>▪ Provincial Audit Service</li> <li>▪ Provincial Health Advisor</li> <li>▪ Provincial Health Board</li> </ul>
<b>DISTRICT LEVEL</b> Each province is divided into districts. There are 89 districts in total.	<ul style="list-style-type: none"> <li>▪ Joint District Planning and Budget Priorities Committee</li> </ul>	<ul style="list-style-type: none"> <li>▪ District Administration</li> <li>▪ District Treasury</li> <li>▪ District Health Manager</li> <li>▪ District Health Management Committee</li> </ul>
<b>LOCAL LEVEL</b> Each district is divided into local-level governments. There are 284 local-level governments.		
<b>WARD LEVEL</b> Each local-level government has many wards. There are 5,747 wards in total.		
<b>COMMUNITIES AND VILLAGES</b> Each ward is made of many hamlets, villages and non-traditional village areas.		

## NUMBER AND DISTRIBUTION OF MANAGERS

As in other countries, there are different categories of health managers at different levels of the PNG health system. They include senior managers at the national and provincial levels, hospital administrators and managers of specific units in hospitals, health centres and sub-centres.

This section of the report attempts to capture the number and distribution of managers at the district level, specifically, designated district health managers who run the district public and primary health care services and members of the district health management committee or team.

It does not seek to capture district hospital and facility managers, unless the same person manages both the hospital and primary health care services or is part of the district health management team.

PNG is divided into 20 provinces and 89 districts (Table 2)<sup>4</sup>. Each of the 89 districts reportedly has a designated health manager or someone acting in that role (Personal Communications 2009). Thus, there are currently about 89 district health managers in PNG supported by a number of District Health Management Committee members. The district health managers in PNG are predominantly HEOs, although there are some with different educational and professional backgrounds.

There is a lack of information regarding the composition of the District Health Management Committee. Not all districts appear to have functional committees due to personnel shortages, particularly in rural and remote areas. In the East Sepik province, for example, Hasfeldt et al. (2006) observed a district health office which is run by only two people – a district coordinator and a clerk – due to lack of personnel. The gender distribution of district managers could not be established by the review although a list of HEO distribution by province obtained from the NDoH indicates a substantial number of women (HEO Association and PNG Medical Board 2009).

<sup>4</sup> Table 2 excludes the National Capital District, hence, the 19 provinces and 86 districts.

## COMPETENCE OF DISTRICT HEALTH MANAGERS

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The low performance of district managers appears to reflect the overall weakness in public sector management. Public sector management in PNG is generally seen as being **ineffective by political leadership, public servants and the public as a whole**.

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Managerial competence may be acquired through a combination of training, experience and coaching (WHO 2009a). The plethora of management problems confronting the PNG health system has raised concerns about the nature of management education and training that health managers in general, and middle-level managers in particular, receive.

While the majority of the current cohort of district health managers are HEOs, in general, health managers in PNG have different levels of training and backgrounds. Some have Diploma in Applied Health Science, Health Extension, Community Health or Public Administration but others have a Bachelor in Health Management or Health Sciences and various nursing qualifications (In-country reviewer 2011).

The Divine Word University in Madang, for example, runs a four-year Bachelor of Health Sciences in Rural Health program which focuses on training HEOs for district health centres in rural areas (Hasfeldt et al. 2005). It also runs a four-year degree program in Health Management designed to graduate managers or supervisors working in administrative or clinical positions at provincial, district, hospital and other facility levels in the health system (Divine Word University 2009).

The School of Medicine and Health Sciences at the University of PNG in Port Moresby has introduced a Master in Rural Medicine, which aims to provide essential clinical, management and public health skills for doctors seeking postings at the provincial and district level (Foster et al. 2009). The PNG Institute of Public Administration, runs a Diploma in Public Administration which some health managers have undertaken.

Obtaining any of the qualifications mentioned above does not automatically make someone a district health manager. In general, health managers work for some time in the health system (two to five years according to an in-country reviewer) before being appointed as health manager. In principle, appointments follow a Public Service General Order of merit-

## MANAGEMENT WORKING ENVIRONMENT

based appointments where positions are advertised and candidates openly selected based on merit. An in-country reviewer made the following comments:

“ Becoming a health manager depends on the Public Service General Order as it is a senior position. Someone with a four-year degree does not automatically become a district health manager. He or she needs to get some years of work experience”  
*(In-country reviewer 2011).*

Despite what appears to be an adequate educational and professional preparation of district health managers in PNG, management capacity and performance remains weak at that level. Health managers reportedly lack financial management and other skills necessary to function efficiently (AusAID 2009).

The low performance of district managers appears to reflect the overall weakness in public sector management. Public sector management in PNG is generally seen as being ineffective by political leadership, public servants and the public as a whole (Central Agencies Coordinating Committee 2000). A complex array of factors – political, social, economic and cultural – affect managerial competency and performance (for discussion of broad issues affecting management in the public sector see May 2009).

Efforts are being made in PNG to strengthen health management competency. For example, the PNG Institute of Public Administration with the support of development partners recently conducted a Certificate Course in Middle Management, which was reportedly well received<sup>5</sup>. For such capacity building programs to succeed, however, there is the need for them to be country-driven and owned and based on a concrete national training plan.

The NDoH reportedly has no comprehensive training plan that outlines the training needs of the health sector and how such needs would be met. Some have argued that the people usually selected for in-training are not necessarily those who would be most able to apply the skills they gain from the training (Hasfeldt et al. 2005).

<sup>5</sup> Specific information on the number of district health managers participating in the program could not be obtained.

Several issues relating to the work environment in PNG affect management and leadership capacity and performance. Lack of supportive supervision in the government health system is one of such issues.

To be effective, district managers should be supported so that they in turn are able to provide support to sub-district personnel. In PNG, there is substantial evidence that provincial health offices do not undertake supervisory visits to districts and districts in turn, do not provide support and supervision to sub-districts.

Less than half of provincial health facilities received a provincial health officer visit between 2002 and 2007 (Burnet Institute 2007, Foster et al. 2009). Davy (2007) reported that some community health workers had not been visited by a district team for years.

A complex set of factors may constrain the ability of health managers to fulfil their basic responsibilities such as supervision. The decentralisation of the health system has provided provinces with autonomy but it has created a ‘management disconnect’. Provincial authorities are not compelled to follow national directives, the result of which is a failure to allocate sufficient funding and resources to health provision.

The low operating budget of districts makes it difficult for supervisory activities to be undertaken. The country’s forbidding geography also plays a role; the poor physical access making direct supervision of staff difficult. High frequency radios have been identified by the NDoH and development partners as providing an alternative, less costly and less time-consuming means of staff supervision.

In 2006, high frequency radio network coverage in PNG was estimated to be about 85%. The national health radio network has reportedly expanded from two to all provinces, connecting health facilities at district level and below to their provincial health offices (Foster et al. 2009). With such easy radio network access one would expect frequent interaction between health managers but this does not appear to be the case. A failure to adequately incentivise staff to work in rural and underserved areas has created chronic shortages in staffing levels, especially in front-line staff (Hasfeldt et al. 2007). In 2007, these shortages partly led to the closure of an estimated 827 aid posts (Foster et al. 2009).

**TABLE 2. DISTRIBUTION OF HEALTH PERSONNEL AND FACILITIES BY PROVINCE IN PAPUA NEW GUINEA, 2009**

*(Adapted from Yambilafuan 2009)*

PROVINCE	DISTRICTS	POPULATION	HEALTH FACILITIES*	HEALTH PERSONNEL <sup>^</sup>	HEALTH WORKER PER POPULATION
Western	3	205,332	123	91	1:2,256
Gulf	2	134,678	86	60	1:2,245
Central	4	225,766	76	63	1:3,584
Milne Bay	4	262,776	146	121	1:2,172
Northern (Oro)	2	169,121	115	70	1:2,416
Southern Highlands	8	791,066	223	164	1:4,824
Egna	5	381,598	160	72	1:5,300
Western Highlands	7	549,531	110	83	1:6,621
Simbu	6	307,641	72	55	1:5,593
Eastern Highlands	8	526,645	177	85	1:6,196
Morobe	9	691,596	237	140	1:4,940
Madang	6	467,155	213	176	1:2,654
East Sepik	6	417,427	243	184	1:2,269
West Sepik	4	229,937	131	83	1:2,770
Manus	1	54,662	69	54	1:1,012
New Ireland	2	153,076	59	36	1:4,252
East New Britain	4	274,916	97	85	1:3,234
West New Britain	2	253,661	126	102	1:2,487
North Solomons	3	200,276	180	131	1:1,529
<b>Total</b>	<b>86</b>	<b>6,296,860</b>	<b>2,643</b>	<b>1,855</b>	<b>1:3,395</b>

**Key to accompany table**

\* Comprised only of aid posts

<sup>^</sup> Includes only aid-post staff

## FUNCTIONING OF MANAGEMENT SUPPORT SYSTEMS

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The performance of health managers in PNG may be influenced by **ineffective payroll systems which sometimes pay health workers irregularly**, maintain 'ghost workers' and do not exclude health workers who fail to report for duty.

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The financing channels and reporting and management systems at provincial level and below are not standardised. The different sources of funding for the health system are not well coordinated. Requests for funds channelled through the Health Sector Improvement Program go to the NDoH and funds are deposited and accessed through provincial Health Sector Improvement Program trust accounts. Local budgets (functional grants and provincial internal revenue) from provincial governments are accessed by district health managers through normal government funding mechanisms.

Support from the Global Fund is channelled through the HSIP. There are many other channels for accessing support from other funding bodies including those in the HIV/AIDS sector. The multiple mechanisms for requesting and accessing funds and the cumbersome annual auditing process, sometimes requiring the on-site reconciliation of original documentation, put considerable strain on district health managers (Burnet Institute 2007, Foster et al. 2009). In addition to the above, the performance of health managers in PNG may be influenced by ineffective payroll systems which sometimes pay health workers irregularly, maintain 'ghost workers' and do not exclude health workers who fail to report for duty.

The current health information management system provides little support to managers at all levels of the health system. The NDoH administers the nation's performance monitoring system. Reporting is high with 90% of health facilities returning information about health outputs, expenditure, financial management and management outcomes. However, reports of significant gaps in the data include disaggregation of indicators by gender, lack of information on aid posts and hospital in-patients and a lack of comprehensive management indicators relevant to human resource management (Foster et al. 2009, Hasfeldt et al. 2005).

The procurement and supply management system is ineffective and leads to frequent stock-outs of essential pharmaceuticals and medical supplies at all levels of health

service provision (Davy 2007, Hasfeldt et al. 2006).

Considerable efforts have been made by development partners to improve the procurement and supply management but such attempts have not been sustainable. For example, an AusAID-financed initiative providing 'drug kits' was designed to temporarily relieve the situation. The program was somewhat successful at reducing 'backlogs', but it was ultimately unsustainable as it created a parallel procurement and supply management system.

A Ministerial Task Force was established in 2007 to investigate the drug and supply issues. In the short term it is expected that the 'drug kit' system will be reinstated (Foster et al. 2009). Investment from UNICEF and WHO in cold-chain management and vaccine distribution has improved stock availability and quality control, but there is still a lot of work to be done in order to strengthen the procurement system (Foster et al. 2009).

## SOCIO-CULTURAL CONTEXT

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Analysing the interplay between politics and business in PNG, Kavanamur (2001) observes that the collapse of quality state enterprise management is **attributable to political intervention and wantokism**.

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Health managers in PNG operate in a complex socio-cultural environment characterised by extreme linguistic and ethnic diversity. Over 750 indigenous languages are spoken, each a defining characteristic of a clan (Nita 2006).

Associated with this diversity is the country's wantok system – a strong system of allegiance and a high sense of obligation to one's clan and extended family. In the public service, this clan-based allegiance frequently supercedes the responsibilities of a specific administrative function and inadvertently leads to conflict of interest and nepotism (Izard and Dugue 2003).

Analysing the interplay between politics and business in PNG, Kavanamur (2001) observes that the collapse of quality state enterprise management is attributable to political intervention and wantokism. There are perceptions of favouritism based on wantok in the management of the district health services but also in appointments and discipline of staff.

Another key socio-cultural issue that may affect leadership and management capacity in the health sector is gender-based discrimination. A highly masculine society, discrimination against women is reportedly widespread in PNG (Nita 2006, UNDP 2007).

Women are significantly under-represented in high-level decision-making. For example, only one of the 109 Members of Parliament is a female. Women play a relatively small role in commerce, either as entrepreneurs and traders or in small-scale businesses (UNDP 2007).

Although no specific evidence of gender bias with regards to provincial or district health management was found, the generally high gender-based discrimination at the national level in PNG may not encourage women to seek or take up management or leadership positions at the provincial and district health service levels.

# SUMMARY

## Access to health care

- Papua New Guinea reportedly has one of the most under-performing health systems in the Asia-Pacific region. Reports from the Independent Monitoring Review Group indicate that very little progress has occurred in the health sector in the last five to 10 years.
- Approximately 80% of the population lives in rural areas, with geography and transport presenting significant barriers to access.

## Financing the health system

- Government health spending represents about 83% of total health expenditure in PNG. In recent times, government spending on health has been on the decline; in 2009 the government reportedly injected some 46 million Kina of recurrent funds into hospital management services but this was offset by a reduction of about 17% of total funding for the NDoH.

## Human resources for health

- It is estimated that about 11,142 health personnel worked in the country's health system in 2009. These were made up of 333 medical officers, 2,844 nurses and midwives, 3,883 community health workers, 718 allied health workers, 409 health extension officers, 1,821 support staff and 1,134 other cadres of health workers.
- Approximately estimated 600 nurses, 600 community health workers and 100 midwives are reportedly required to fill the existing gaps. Provincial governments provide staff for rural health services. The national level develops and implements overall human resources for health policy for the country.
- Management of health personnel is a shared responsibility between several government agencies including the Department of Personnel Management and the NDoH.

## Health management structure

- The structure of health and human resource management in PNG can be understood within the context of decentralisation. Under the Organic Law, management functions have been devolved along with funding and service delivery responsibilities to provincial and local governments.
- The NDoH manages provincial hospitals while provincial and local governments are responsible for managing rural health services. The decentralisation of the health

system has provided provinces with significant autonomy which has created a 'management disconnect'. Provincial authorities are not compelled to follow national directives, the result of which is a failure to allocate sufficient funding and resources to health provision.

## Number and distribution of district health managers

- PNG has 89 districts and each reportedly has a designated health manager or someone acting in that role, so there are at least 89 district health managers who together with members of their respective district health management committees, manage the primary health care system.

## Competence of district health managers

- District managers in PNG come to the job with a varying level of educational and professional qualifications and experience. In general, health managers work for about two to five years in the health system before being appointed a health manager.
- The current cohort of district health managers in PNG are predominantly HEOs. These officers bridge the gap between doctors and nurses and often operate in senior and middle management positions.

## Management working environment

- A complex array of political, social, economic and cultural factors influence the effectiveness of managers in PNG including: weak administrative and management structures, inadequate supportive supervision, ineffective procurement and supply, and weak health information systems.

## Socio-cultural factors

- Performance of managers at the district level in PNG appears to be affected by socio-cultural factors particularly the wantok system.
- Information from consultations with key individuals suggests, for example, that preferential treatment based on wantok is common in the selection of people to attend in-service training by provincial health officers.



## REFERENCES

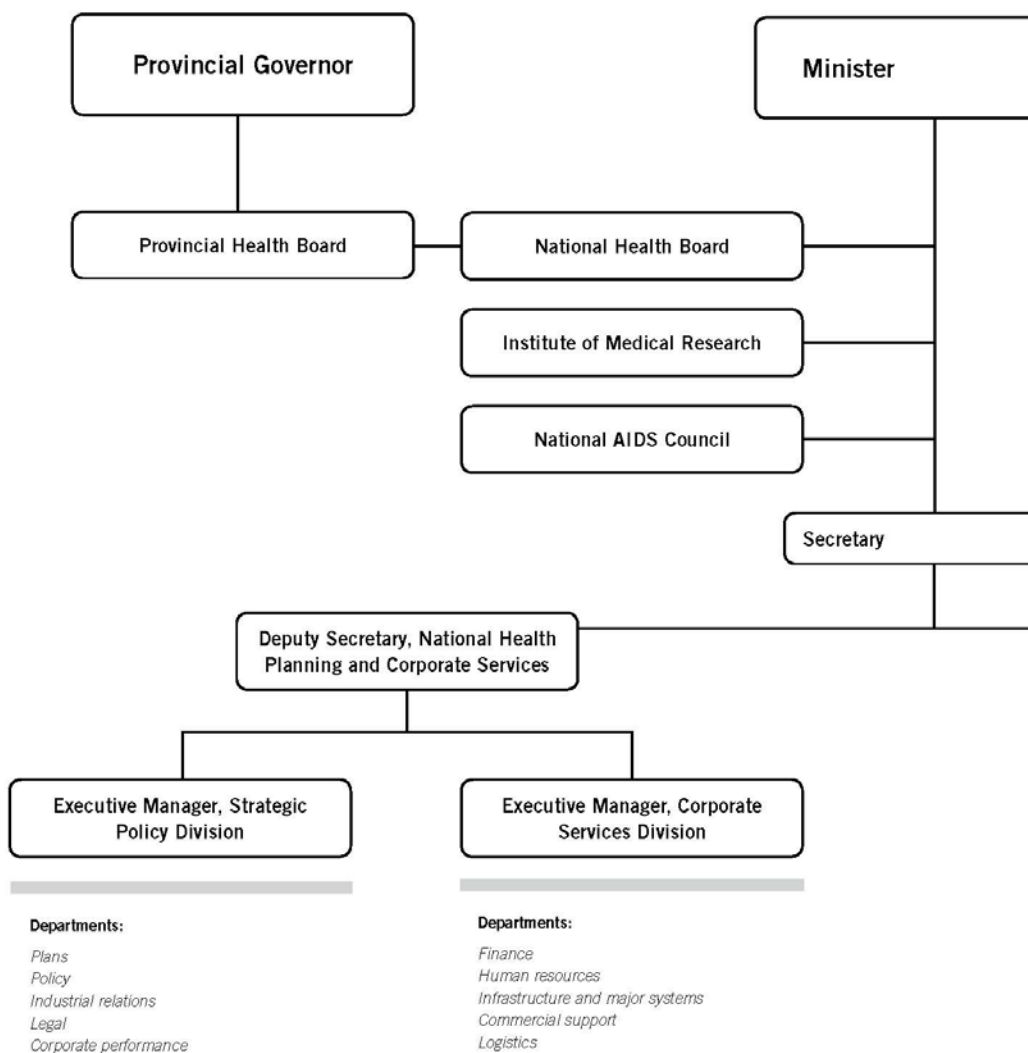
- AusAID 2009, *Australian Aid to health service delivery in Papua New Guinea, Solomon Islands and Vanuatu: Evaluation Report*, Australian Agency for International Development, Office of Development Effectiveness, Canberra.
- Batten, A 2008, 'Hey big spender: PNG's 2009 budget', *East Asia Forum*, accessed 1 September 2010, <<http://www.eastasiaforum.org/2008/12/04/hey-big-spender-pngs-2009-budget/>>.
- Bolger, J, Mandie-Filer, A and Hauck, V 2005, *Papua New Guinea's health sector: A review of capacity, change and performance issues*, European Centre for Development Policy Management, Maastricht.
- Burnet Institute 2007, 'Local health managers in difficult environments: lessons learned; unusual successes; and a way forward', in *Melbourne*, pp. 1–53.
- Central Agencies Coordinating Committee 2000, *Making the public sector work – A medium term plan of action for public sector reform in Papua New Guinea 2000–2003*, Public Sector Reform Management Unit, Port Moresby.
- Crouch, PR 1982, 'The changing role of the Health Extension Officer in Papua New Guinea', *Papua New Guinea Medical Journal*, vol. 25, no. 2, pp. 77–8.
- Davy, C 2007, 'Contributing to the wellbeing of primary health care workers in PNG', *Journal of Health Organization and Management*, vol. 21, no. 3, pp. 229–45.
- Department of Personnel Management PNG 2010, *Department of Personnel Management PNG: Building the nation through human resource development*, accessed 15 December 2010 <<http://www.dpm.gov.pg/>>.
- Duke, T, Tefuarani, Na and Baravilala, W 2004, 'Getting the most out of health education in Papua New Guinea: Report from the 40th Annual Papua New Guinea Medical Symposium', *Medical Journal of Australia*, vol. 181, no. 11/12, pp. 606–7.
- Divine Word University 2009, *Department of Health Management*, Divine Word University, accessed 2 November 2010, <[http://www.dwu.ac.pg/faculties/fhs/dep\\_healthmanagement.html](http://www.dwu.ac.pg/faculties/fhs/dep_healthmanagement.html)>.
- Foster, M, Condon, R, Henderson, S, Janovsky, K, Roche, C and Slatyer, B 2009, *Working Paper 1: Papua New Guinea Country Report*, Australian Agency for International Development, Office of Development Effectiveness, Canberra.
- Government of Papua New Guinea 2000, *Health Vision 2010: National Health Plan 2001–2010*, Government of Papua New Guinea: National Department of Health, Port Moresby.
- Hasfeldt, J, Braithwaite, JA, Miller, M, Pawa, F and Séguy, N 2005, *Papua New Guinea Independent Health Sector Review: October 2002 – September 2005 (Draft)*, Papua New Guinea Independent Monitoring Review Group (Health), Port Moresby.
- Hasfeldt, J, Braithwaite, JA, Hall, J, Miller, M, Pawa, F, Roedde, G and Séguy, N 2006, *Report No. 1: Planning Issues for 2007*, Papua New Guinea Independent Monitoring Review Group (Health), Port Moresby.
- Hasfeldt, J, Roedde, G, Braithwaite, JA, Hall, J, Miller, M, Sairere, J, Schurmann, M and Shuey, D 2007, *Report No. 2: Issues at the Provincial Level and Below, Papua New Guinea Independent Monitoring Review Group (Health)*, Port Moresby.
- HEO Association and PNG Medical Board 2009, *Health Extension Officers by Province in PNG – 2009*, National Department of Health, Port Moresby.
- IMRG 2008a, *Aide-Memoire*, Papua New Guinea Health Sector Improvement Programme Independent Monitoring and Review Group, Port Moresby.
- IMRG 2008b, *Prioritizing IMRG recommendations and drafting terms of reference for IMRG 2009 with improved focus and broader representation*, PNG Independent Monitoring and Review Group (Health), Report No. 5, Port Moresby.
- In-country reviewer 2011, Reviewed draft of current report, *A Review of health leadership and management capacity in Papua New Guinea*, in February 2011, Sydney.
- Izard, J and Dugue, M 2003, *Moving Toward a Sector-Wide Approach: Papua New Guinea – The Health Sector Development Program Experience*, Asian Development Bank, Manila.
- Kavanamur, D 2001, *The Interplay between Politics and Business in Papua New Guinea*, University of Western Sydney and University of Papua New Guinea.
- May, RJ 2009, *Policy Making and Implementation: Studies from Papua New Guinea, State, Society and Governance in Melanesia Program*, ANU, in association with the National Research Institute, Papua New Guinea, Canberra.

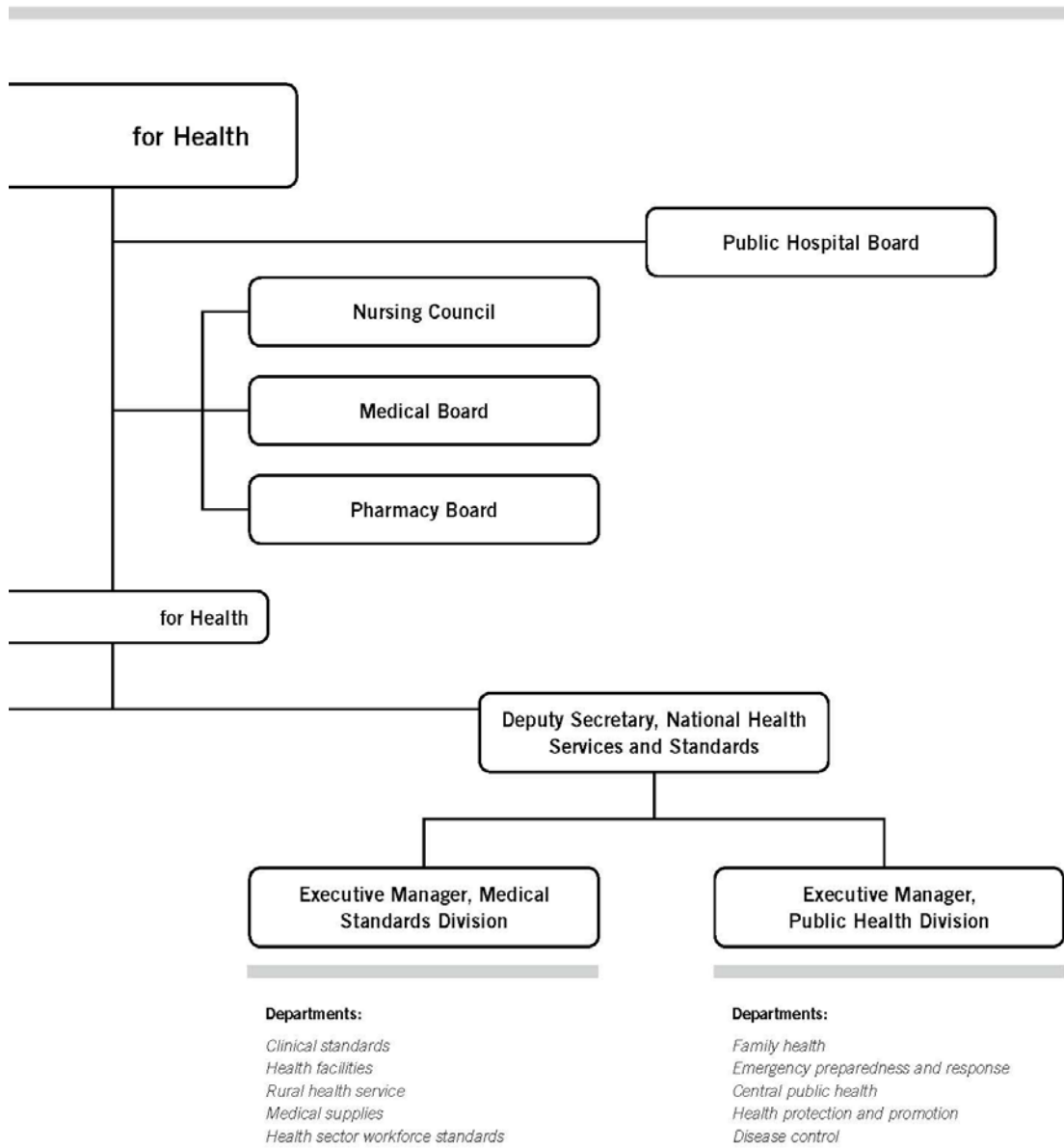
- McKay, J and Lepani, K 2010, *Health System Strengthening in Papua New Guinea: Exploring the Role of Demand-responsive Mechanisms*, Lowy Institute for International Policy, Sydney.
- McLeod, A 2007, *Literature Review of Leadership Models in the Pacific*, Australian National University: Research School of Pacific and Asian Studies.
- Mola, G 2009, 'Maternal mortality in Papua New Guinea', *OandG Magazine*, vol. 11, no. 1, Autumn 2009, pp. 34–6.
- NDoH 2009, *National Child Health Plan 2008–2015*, National Department of Health, Port Moresby.
- Nita, A 2006, *Papua New Guinea: National Assessment Report*, New York.
- Personal Communications 2009, *Consultations with former PNG District Health Manager*, Port Moresby, September 2009.
- PNG National AIDS Council 2010, *Papua New Guinea HIV prevalence: 2009 estimates*, National AIDS Council, Port Moresby.
- UNDP 2000, *Human Development Report 2000*, United Nations Development Programme, New York.
- UNDP 2002, *Human Development Report 2002*, United Nations Development Programme., New York.
- UNDP 2003, *Human Development Report 2003*, United Nations Development Programme, New York.
- UNDP 2004, *Human Development Report 2004*, United Nations Development Programme, New York.
- UNDP 2005, *Human Development Report 2005 – International Cooperation at a Crossroads: Aid, Trade and Security in an Unequal World*, United Nations Development Programme, Geneva.
- UNDP 2006, *Human Development Report 2006 United Nations Development Programme*, New York.
- UNDP 2007, *UNDP Country Programme Document – Papua New Guinea (2008-2012)*, United Nations Development Program, New York.
- UNDP 2008, *Human Development Report 2007/2008 United Nations Development Programme*, New York.
- UNDP 2009, *Human Development Report 2009 – Overcoming Barriers: Human Mobility and Development*, United Nations Development Programme, New York.
- UNDP 2010, *Human Development Report 2010 – The Real Wealth of Nations: Pathways to Human Development*, United Nations Development Programme, Geneva.
- UNSW HRH Hub 2009, *Mapping Human Resources for Health Profiles from 15 Pacific Island Countries: Report to the Pacific Human Resources for Health Alliance from the Human Resources for Health Knowledge Hub*, University of New South Wales: School of Public Health and Community Medicine, Human Resources for Health Hub, Sydney.
- Watters, DK and Scott, DF 2004, 'Doctors in the Pacific', *Medical Journal of Australia*, vol. 181, pp. 567–601.
- WHO 2006, *The World Health Report 2006: Working Together for Health*, World Health Organization, Geneva.
- WHO 2007, *Towards Better Leadership and Management in Health: Report on an International Consultation on Strengthening Leadership and Management in Low-Income Countries*, World Health Organization, WHO/HSS/healthsystems/2007.3.
- WHO 2009a, *Who are the managers? Case studies from three african countries*, World Health Organization, Geneva.
- WHO 2009b, *World Health Statistics*, World Health Organization, Geneva.
- WHO WPRO 2008, 'Papua New Guinea', in *Country Health Information Profiles*, World Health Organization: Regional Office for the Western Pacific, Manila, pp. 321–30.
- WHO WPRO 2010, *Country Health Information Profiles: Papua New Guinea*, World Health Organization: Regional Office for the Western Pacific, Manila.
- Yambilafuan, F 2009, 'Workforce Status in the Country', in *HR Training Forum*, Port Moresby.

# APPENDIX

## STRUCTURE OF THE MINISTRY OF HEALTH

(Adapted from WHO WPRO 2010)





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ORIGINAL PAPER

## Implementing Tuberculosis Control in Papua New Guinea: A Clash of Culture and Science?

Kindin Ongugo · John Hall · John Attia

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**Abstract** Tuberculosis (TB) remains a major health problem in Papua New Guinea (PNG) and the Directly Observed Treatment Short course (DOTS) strategy has been adopted as a framework for controlling the disease. We review here the local and cultural factors in PNG that act as barriers to implementing each component of the DOTS program. Political Will is needed to tackle the underlying conditions that lead to squatter settlements, e.g. poverty and unemployment, and to build infrastructure for access to rural populations. Better case detection may be obtained by addressing the cultural beliefs that delay presentation to health facilities, as well as providing ongoing training for laboratory technicians, introducing better sputum microscopy techniques and regular service of radiology equipment. Direct observation of therapy may need to be done using the traditional clan structure, e.g. clan chiefs and extended family system in rural areas. Effective drug supply is provided by the World Health Organisation (WHO) Global Drug Facility (GDF). Monitoring and Evaluation will require innovative approaches; perhaps through financial incentives on completion of the program or texting through the mobile text messaging for reminders. There are unique cultural and local issues that need to be addressed when implementing DOTS strategy in PNG.

**Keywords** Tuberculosis · Sorcery · Witchdoctor · Squatter settlements · Rural

### Introduction

*Mycobacterium tuberculosis* infects 2 billion people and causes disease in 9 million, of which 1.8–2 million die worldwide annually [1, 2]. In PNG TB is the fourth major cause of death in hospital admissions (Table 1) and the leading cause of death in HIV/AIDS patients [3]. It has a higher mortality rate than malaria and HIV [4]. With documented Multi-Drug Resistant-TB (MDR-TB) [5], PNG faces the challenge of controlling TB in a generalised HIV epidemic with HIV prevalence of 1.2–1.5% [4, 6]. The emergence of extensive-drug resistant TB (XDR-TB) [7], whilst not currently documented, is a real future challenge for TB control in PNG while it is struggling to address its existing chronic health and social problems. The current directly observed treatment short-course (DOTS) strategy in its early version [8] was adopted as the official approach to TB control in PNG in 1997 [3]. Implementation has been slow with 40% coverage in 2006 [9] and 14% in 2007 (Table 2) [10], the quality of DOTS program is also questionable. In 2006 the Global Fund to fight TB, malaria and HIV/AIDS announced a \$20 million (US) grant to PNG to roll out DOTS to all 20 provinces over a 5-year period [11].

It is in this context that this paper discusses the challenges of providing a TB service in PNG. Using experience gained from growing up and practising medicine in PNG, combined with expert reviews and reports, this paper identifies problems or barriers affecting the delivery of TB control services and offers potential solutions. The paper

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**Table 1** Ten leading causes of deaths, based on hospital discharge reports (2000)

	Ten leading causes of mortality	Number of reported deaths	Rate per 100,000 population
1	Pneumonia	957	18
2	Perinatal conditions	834	17
3	Malaria	629	12
4	Tuberculosis	502	10
5	Meningitis	401	8
6	Heart diseases	302	6
7	Diseases of the digestive system	239	5
8	Septicaemia	192	4
9	Anaemia	180	3
10	Diarrhoea	179	3

Source: Reference [3] (PNG Health Department 2006)

examines the five components of the current PNG DOTS programme:

1. Political Will
2. TB Case Detection
3. Direct Observed Therapy
4. Effective Drug Supply
5. Monitoring

Each component is critiqued within the current social, economic and political setting in PNG to identify challenges and offer suggestions for solutions. These challenges need to be overcome if TB control is to be achieved in PNG

### Political Will

#### Problems

The success of a TB control program depends on the priority accorded to it by the government. Although the WHO declared the TB epidemic a global emergency in 1993 and described the situation in the Western Pacific as a crisis in 1999 [12], the PNG government has not given TB the priority it deserves. PNG has the third highest prevalence of TB in the Western Pacific Region at 430 per 100,000 behind the Philippines (500/100,000) and Cambodia (664/100,000) [10]. The lack of prioritisation by the government was obvious when TB failed to feature in Medium Term Development Strategy (MDTS) for 2005–2010 [13]. The funding for TB control over 5 years was only \$US 4.17 million with a gap of \$US 20.87 million [3]. In comparison, HIV/AIDS has had unparalleled government support with the creation of National AIDS Council Secretariat, a Parliamentary HIV Committee Chairman and the Ministry of Health and HIV [14]. DOTS is based on evidence from other countries without consideration for the local environment where research data is lacking. This could partly explain the appalling results in TB control despite having DOTS for over 10 years.

There are couple of areas where government will/action is needed: the squatter settlements and rural settings [3].

#### Burden of TB in Squatter Settlements

Squatter settlements accompanying urbanisation in PNG are an increasing problem. The rate of urban population growth is 1.9% annually [15] and in many locations e.g. the National Capital District (NCD) this occurs predominantly in the squatter settlements [16].

Rural–urban migration is the main factor responsible for squatter settlements; a shortage of affordable accommodation in cities and towns which pushes workers in public and private sectors to seek shelters with squatters [17], often in poorly constructed homes built close together due to lack of land. With no formal education, lack of family planning services, and long held traditional values of having big families, the end result is large family sizes. Combining this with the cultural obligation of accommodating visiting clansmen leads to overcrowding, creating an environment conducive to the outbreak and spread of diseases. The cities of Port Moresby and Lae, both with very large squatter settlements comprising 7% of the country's population accounted for a third of sputum positive TB in 2004 [3].

#### Burden of TB in Rural Areas

TB is increasingly being diagnosed in rural areas where it was known to be rare. Although overcrowding is not an issue in rural areas, behaviour of people, largely from lack of knowledge contributes to spread of diseases. Unhealthy behaviour, such as not covering the mouth when coughing or spitting sputum indiscriminately, helps spread of TB.

The major problem in rural areas is isolation. Over 80% of the population live in rural areas with only 35% living within 10 km of the main road network. Difficult geography is a major constraint for 17% of the population who have no links with any road infrastructure; in fact, as many

as 20% of the population have never had a ride in a motor vehicle. Even if they can access a road, only 30% of the national and 12% of the district roads are in good condition [18]. The only means of long distance travel is often by light aircraft for many isolated inland communities and outboard motor-powered dinghies for people on small islands. For example, in West New Britain Province (WNBPN), no government trawlers are currently in working conditions to service most of the islands and the south coast. There is no official road linking the south coast to Kimbe, the location of the Provincial Hospital which has the only radiology service for the province. There is limited air service to the interior and the south coast of WNBPN. From personal experience, transporting emergencies such as difficult labour or serious trauma from the interior, south coast and the islands of Bali and Vitu often take 24 h to organise and the patient commonly succumbs while en-route.

Public servants working in rural areas are just as isolated as the people they serve. The government's failure to address poor working conditions of primary health care workers, both in terms of ongoing training and in financial remuneration, affects their performance, contributing to poor health outcomes.

#### Solutions

Political leadership is paramount and is therefore the first component of a national TB DOTS Program. At the national level TB must get the same political priority as HIV/AIDS. TB should be amalgated with HIV/AIDS and be made one entity, 'TB/HIV/AIDS' as suggested by WHO in 'Global Plan to Stop TB 2006–2015' [8]. The two diseases are intrinsically related [19] and therefore should be overseen by one Parliamentary Committee headed by a politician as the chairperson. Adequate funding is vital to drive any TB service program; from diagnosis and treatment to prevention strategies.

#### Squatter Settlement

The conditions that lead to the squatter settlements i.e. lack of affordable housing, presence of poverty, and high unemployment need to be tackled and require a whole of government approach. Encouraging large employers to provide housing for a lot of their semi-skilled and non-skilled workers would be a step in the right direction. Uncertainty around land ownership, which leads to settlement expansion, should be strictly controlled; helping traditional land owners regaining control of their land may also help reduce the rate of expansion. Partnering with many of the NGOs working in squatter areas will allow co-ordination of efforts.

#### Rural Areas

The impact of isolation on rural communities requires long-term solutions. Accessible roads with affordable transport are necessary ingredients to link rural communities to main centres. Incentives to rural transport providers including subsidies [20] such as exemption on tax for the purchase of vehicle, fuel and spare parts and lower interest rate on loans need exploring. The Community Water Transport Project undertaken by the National Government will hopefully provide regular and safe sea transport for island communities [21]. Linking isolated communities to main centres opens up access to services and increases economic activity with the potential to reduce poverty [22] and reduce rural–urban migration. The current practice of involving volunteers from the communities or NGOs and churches are helpful but the government must fulfil its responsibility by providing bulk of the primary health care workers. Incentives to increase performance and retention in rural areas of primary health care workers cannot be taken lightly [23].

#### Case Detection

##### Problems

PNG has the lowest case detection rate in the WHO Western Pacific Region (Table 2) [10]. The reasons for late presentation are mainly two-fold: related to cultural beliefs, and related to diagnostic capacity after presentation to a health care facility.

##### Cultural Beliefs

Deep-rooted cultural beliefs about causations of ill-health such as sorcery, witchcraft, evil spirits, and spirits of dead relatives [24, 25] are widely held across many socio-economic strata in PNG. These beliefs lead many people to seek non-conventional treatments first, such as using traditional healers or witchdoctors, traditional herbal medicine, or prayer. A survey in six provinces of PNG showed that TB cases are likely to present late due partly to these beliefs and also to lack of knowledge and awareness about early symptoms of TB [26]. On average delays in presentation can take between 60 and 120 days [27].

##### Inadequate Health Facilities

Some of the health care factors that contributing to late presentation include poor delivery of health care

such as inadequately trained staff, a non-functioning health service, poor control of medication dispensing, as well as isolation and long travel distances for rural dwellers.

Identification of infectious cases has to be prompt in order to stop ongoing transmission in the community. At the present time this is possible through sputum microscopy using Zeihl-Neelsen carbolfusin stain and light microscopy which has inferior sensitivity which is available in the provincial hospitals and some health centres. Culture for AFB is the gold standard [28] with better sensitivity but this can take up to 6 weeks which is not ideal when diagnosis is required promptly; in addition the only culture facility in all of PNG is non-functioning. There is lack of adequately qualified microscopists in most hospitals in PNG. The rural laboratory assistants (RLA) who perform microscopy in health centres are helping but the practice of sending only positive smears to central provincial laboratory for confirmation may not be the correct practice as a significant number of infectious cases can still be missed. Basic radiology equipment for x-rays is provided but lack of regular service program leads to frequent breakdowns and from personal experience, can often take months to repair.

Contact screening of infectious cases is not done actively under DOTS. This is based on the mathematical modelling by Styblo and Bumgarner [29] (Styblo's Rule) and later by Dye [30] that if at least 70% of infectious cases are detected and at least 85% are cured, it would result in incidence rate declining at about 5–10% per year and declining death rate and prevalence annually. Styblo's Law may not be valid in the present PNG environment [31] as WHO's vision to intensify case detection in the Global Plan to Stop TB 2006–2015 has not materialised in PNG.

## Solutions

Control of TB hinges on a case detection rate exceeding 70% [32] and so the National TB Program must have a firm policy of intensifying case detection activities.

Most of the factors believed to determine health seeking behaviour need to be answered through local research. These areas include educating people, addressing their beliefs (regarding traditional healers and prayers), and working with the traditional healers of subjects who believe in a supernatural cause of their illness. Community health promotion activities must include regular radio and television programs and health education in school. In rural areas engaging clan chiefs through the formal system of government would increase awareness of the illness.

Improving the ability of the health worker to diagnose early TB should be a priority. Regular in-service training would increase awareness about TB amongst primary health workers. Having a protocol to detect TB based on common symptoms as cough for the lowest cadres of health worker in rural areas would help minimise delays in diagnosis.

Correct identification of infectious cases is crucial. This is dependent on improved sensitivity of sputum microscopy and technique; there must be regular training workshops, ongoing assessment of proficiency and quality control of medical laboratory technologists and RLA. Using a pathway for rural health facilities to categorise sputum as high probability for TB based on symptoms would help identify false negative sputum for re-examination by a more experienced microscopist. Improving sputum microscopy techniques is also important. Adopting better staining techniques than the traditional Zeihl-Neelsen carbolfusin stain commonly used in resource-poor countries would improve sensitivity. Simple measures such as concentrating the sputum by centrifugation after liquefaction with sodium

**Table 2** Case detection rates of smear-positive case in countries with high burden of TB in the Western Pacific Region, 2006–2007

Country	DOTS cover-age in 2007 (%)	Case detection rates (%)					
		DOTS area			DOTS + non-DOTS area <sup>a</sup>		
		2006	2007	% change	2006	2007	% change
Cambodia	100	62	61	-2	-	-	-
China	100	80	80	0	-	-	-
Lao People's Democratic Republic	100	77	78	1	-	-	-
Mongolia	100	88	76	-14	-	-	-
Papua New Guinea	14	22	15	-32	28	31	11
Philippines	100	75	75	0	-	-	-
Viet Nam	100	86	82	-5	-	-	-
Western Pacific Region	99.6	77	77	0	-	-	-

<sup>a</sup> Countries and areas with 100%DOTS coverage have no non-DOTS by definition the figures are the same in the left column

Source: Reference [10] (WHO WPR 2009)

hypochlorite increases sensitivity [33]. Auramine O or auramine-rhodamine fluorochrome stain based microscopy using novel light emitting diodes (LEDs) fluorescent microscopy could be tried as it is more sensitive [34, 35]. Utilising simple techniques such as induced sputum (hardly used) produce good quality sputum similar to specimens obtained by bronchoscopy and therefore should be used more often in cases where obtaining sputum is difficult.

Identifying contacts with disease and instituting treatment early would break the vicious circle of transmission and re-infection which could be as high as 50% in TB endemic areas [36] as the risk of acquiring a new infection by old TB is four times higher than people who have never had TB [37]. Active case finding saves more lives than DOTS alone [38]. Up to 5 times the number of TB disease cases can be diagnosed through a program involving both active and passive contact screening [39]. In PNG contact screening was worthwhile where screening contacts of children with TB resulted in identifying adults with TB [40]. Providing practical assistance such as transport for contacts screening should be a component for the program although data is lacking.

### Directly Observed Therapy

#### Problems

Unfortunately adequate treatment for TB means a minimum of 6 months of uninterrupted dosing with multiple medications which requires a strong partnership between the patients and healthcare providers or interested parties under DOTS. The encouraging results in early DOTS trials in Lae and the National Capital District (NCD) have not translated to rapid rollout of DOTS. In non-DOTS districts patients are managed with self-administered TB program.

The reasons for poor compliance can range from patient factors such as lack of understanding about the illness [41], poverty, isolation and medication side-effects; health care provider factors including complicated medication regime, pill burden and lack of supporting facilities and infrastructure, lack of commitment and unfriendly attitudes of health worker [42] and combination of both which is likely to be the main factor in PNG.

#### Urban Areas/Squatter Settlement

It is reasonable to assume that most people in urban centres in PNG would have relatively easy access to health care as compared to rural dwellers. This was thought to be the reason for early good results with DOTS in Lae and NCD [3]. Nevertheless there are some barriers to DOTS in urban centres. Health workers and NGO volunteers have fallen victim to crime, and health facilities are sometime

vandalised, affecting supervised dosing. Poor work attitude by health worker in this difficult environment have contributed to patients missing doses. Squatter residents are more likely to have social and drug problems and they can be difficult to locate and work with.

#### Rural Areas

Isolation, distance, poor road conditions, unreliable transport service and poverty are the main issues for rural people [18]. Declining numbers of aid posts [43] in rural areas of PNG are exacerbating the problem. Traditional beliefs about diseases and easy access to traditional healers could also be contributing to the problem. Family members, in most instances are just as naïve as the patient through lack of knowledge. There is also limited numbers of NGO personnel as compared to urban areas. Expecting villagers to become volunteers as DOTS promoters may be unreasonable unless incentives are provided.

#### Solutions

Even well coordinated and well-funded DOTS programs struggle to show benefits over self-administered therapy [44]. Many factors contribute to this and vary around the world. Measures to improve adherence have included reminders posted to patients, help given to patients by lay workers, incentives to patients, and education and intensive supervision of staff in TB clinics [45, 46]. The current practice of DOTS supporters from NGOs and churches are helpful but there are not enough of them especially in rural areas. Encouraging community participation in taking care of health workers/volunteers and facilities should be a priority. The use of family members [47, 48] as DOTS supporters in a slightly modified DOTS program might suit PNG especially in rural areas where the extended family network is strong and clan leaders are more involved.

Clan chiefs with backing from the government are likely to have more influence with individuals than the current system of local level governments; partnering with these chiefs to help supervise therapy may help boost compliance. In the interest of public health, legislation to incarcerate noncompliant patients in health institution as a last resort [49, 50] and compulsory screening of contacts of infectious TB cases [51] as seen elsewhere in the world, may be necessary.

### Effective Drug Supply

#### Problems

The supply chain of TB drugs from source to treatment centre is a long and fragile one. Some of the factors that

contribute to lack of medications at treatment points are: national poverty, poor communication, poor planning, and lack of skilled personnel, long distance and isolation. One of the key figures responsible for ensuring provinces are stocked well is the Provincial TB Coordinator. Unfortunately, many of the provinces do not have qualified people occupying these positions on a regular basis. DOTS program have been devolved to the provinces without proper TB coordinators and the potential and the potential for these programs to fail is very real.

The quality of drugs reaching treatment point sometime deteriorate because of handling problems along the supply chain, which reflect a bigger problem in the management system [52].

#### Solutions

The WHO is assisting the PNG government in this regard; essential TB drugs are now obtained through the Global Drug Facility (GDF) as part of implementing the DOTS strategy. This has brought the introduction of fixed dose combination (FDC) anti-TB drugs which will reduce pill burden and hopefully improve adherence. With expansion of DOTS, FDC would replace single drug preparation. An essential component to ensure effective implementation of DOTS strategy is having properly trained TB coordinators who will utilise the management principle set under GDF and continue to produce results with appropriate data for ongoing qualification of GDF grants. The government should continue with its responsibility by ensuring a regular budgetary monetary allocation for TB program activities.

## Monitoring and Evaluation

### Problems

The health system in PNG suffers from poor Health Information System documentation generally which reflects systematic management problems. There is no proper standardised documentation system in health facilities. Recording keeping responsibility is transferred to patients, who are expected to keep small treatment books which are often lost. With fewer than 50 General Practitioners around the country they cannot be relied up on to keep medical records for 6.5 million people.

The problem of monitoring TB patients after completion of treatment is a challenging one for resource-rich settings, let alone resource-poor PNG. Once cured, most people just do not see the logic of continuing time-consuming and possibly expensive trips to a clinic. This makes it difficult to monitor and document success of treatment programs.

### Solution

Standardising record systems across hospitals and clinics should be a priority. Training of clinic staff would help in this regard. DOTS strategy should improve this situation once rolled out to all the districts as it addresses management issues.

There is lack of supporting evidence for incentives to former patients to return for regular review once told that they have completed treatment. More innovative approaches could be tried to improve this component of DOTS, such as incentives for those who come for regular check-ups, or using mobile phone messages for tracking or reminders (given the high uptake of mobile phones, even by rural populations).

**Table 3** Summary table

DOTS	Issue	Solution
Political will	Squatter settlements	End poverty and unemployment, increase affordable housing
	Rural isolation	Build infrastructure for access
Case detection	Cultural beliefs that delay presentation	Educating and partnering with traditional healers
	Inadequate health facilities	Training of laboratory technicians, improved and better microscopy techniques
Directly observed therapy	Squatter settlements	Regular service program for radiology equipment
	Rural isolation	Protecting facilities and safety of health workers/volunteers
Effective drug supply	Poor supply chain	Partner with clan chiefs/families
		Use WHO drug facility
Monitoring and Evaluation	Poor health records	Train Provincial TB co-ordinators
	Poor clinic reviews	Use identity card
		Financial incentives for completion of treatment, use mobile phone text message

The World TB Day (March 24th) should be a significant date on the health calendar. Celebrations with public acknowledgements and appreciations of both health worker and former patients would make the effort more worthwhile. Issuing patients with ID cards in the hope of improving communications between patients and different health care facilities should be considered.

In rural settings, the significance of utilising clan leaders as resource people cannot be underestimated.

### Summary

The DOTS strategy has been accepted as the official policy to tackle TB in PNG and has many advantages. However, the DOTS strategy cannot be implemented in the same way in every country. There are unique cultural and local issues that need to be addressed when implementing this TB control strategy in PNG. More research is needed to identify and overcome these local PNG factors before DOTS can be successfully implemented in PNG. International organisations, NGOs, and the PNG government need to work hand-in-hand to overcome these obstacles and develop sustainable and locally appropriate solutions to achieve the global aim of eradicating TB by 2050 (Table 3).

### References

- 2009 Update tuberculosis facts. World Health Organisation. Stop TB Partnership.
- Lonroth, K., Castro, K. G., Chakaya, J. M., Chauhan, L. S., Floyd, K., Glaziou, P., et al. (2010). Tuberculosis control and elimination 2010–2050: Cure, care, and social development. *Lancet*, 375, 1814–1829.
- Country Status Report National TB Program. Papua New Guinea 1997–2005. National TB Program Unit, Disease Control Branch, National Department of Health, Papua New Guinea 2006.
- The Global Fund To Fight AIDS, Tuberculosis and Malaria 2010.
- Gilpin, C. M., Simpson, G., Vincent, S., O'Brien, T. P., Knight, T. A., Globan, M., Coulter, C., & Konstantinos, A. (2008). Evidence of primary transmission of multi-drug resistant tuberculosis in the Western Province of Papua New Guinea. *Medical Journal of Australia*, 188(3), 148–152.
- PNG National AIDS Council Secretariat. UNGASS 2008 Country Progress Report. Papua New Guinea.
- Gandhi, N. R., Nunn, P., Dheda, K., Schaaf, H. S., Zignol, M., van Soolingen, D., et al. (2010). Multi-drug resistant and extensive drug-resistant tuberculosis: A treat to global control of tuberculosis. *Lancet*, 375, 1830–1843.
- Global Plan To Stop TB, 2006–2015/Stop TB Partnership. World Health Organisation 2006.
- Tuberculosis Report in the Western Pacific Region: 2008 Report. World Health Organisation 2008.
- Tuberculosis Control in the Western Pacific Region, 2009 Report. WHO Western Pacific Region.
- Global Fund to Fight AIDS, Tuberculosis and Malaria 2006.
- Resolution WPR/RC 51.R4. Tuberculosis prevention and control. Report from the fifty-first session of the Regional Committee for the Western Pacific Region, Manila, 2000, September 18–22. Manila: WHO Regional Office for the Western Pacific; 2000.
- Medium Term Development Goals 2005–2010, PNG Government 2004.
- National Department of Health Corporate Plan 2009–2013. Reference manual. National Government of Papua New Guinea 2008.
- Data by Geography Papua New Guinea Summary. Population Reference Bureau 2010.
- JICA Integrated Community Development Project in the settlement Areas in the National Capital District. 1995–2008 JICA.
- Payani, H. H. (2000). Selected problems in the Papua New Guinea Public Service. *Asian Journal of Public Administration*, 22(2), 135–160.
- Lee, J. (2004). Papua New Guinea transport sector review note: With an emphasis on the Road sector. Government of Papua New Guinea/The World Bank.
- Harries, A. D., Zachariah, R., Corbett, E. L., Lawn, S. D., Santos-Filho, E., Chimzizi, R., Harrington, M., Maher, D., Williams, B. G., & De Cock, K. M. (2010). The HIV-associated tuberculosis epidemic-when will we act? *The Lancet*. doi:10.1016/S0140-6736(10)60409-6.
- ADB Technical Assistance Consultant's Report. 2007 July TA 4806-PRC. People's Republic of China: Sustainable Rural Transport Services.
- ADB Loan. (2008). Community water transport project: Papua New Guinea. Asian Development Bank 2008.
- Warr, P. (2005). 'Road development and poverty reduction: The case of Lao PDR.' ADB Discussion Paper No 25.
- Henderson, L., & Tulloch, J. (2008). Incentives for retaining and motivating health workers in Pacific and Asian Countries. *Human Resource for Health*, 6, 18. doi:10.1186/1478-4491-6-18.
- Sharp, P. T. (1982). Ghosts, witches, sickness and death: The traditional interpretation of injury and disease rural area of Papua New Guinea. *Papua and New Guinea Medical Journal*, 25(2), 108–115.
- Lepowsky, M. (1990). Sorcery and penicillin: Treating illness on a Papua New Guinea island. *Social Science and Medicine*, 30(10), 1049–1063.
- Department of Health. Rapid Formative Research to Inform Health Promotion for Tuberculosis Program in Papua New Guinea. National Department of Health December 2000.
- Storla, D. G., Yimer, S., & Bjune, G. A. (2008). A systemic review of delay in the diagnosis and treatment of tuberculosis and coccidia. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 102(6), 520–521.
- Marais, B. J., Brittle, W., Pajnczyk, K., Hesselning, A. C., Beyers, N., Wasserman, E., et al. (2008). Use of light-emitting diode fluorescence microscopy to detect acid-fast bacilli in sputum. *Clinical Infectious Diseases*, 47(2), 203–207.
- Styblo, K., & Bumgarner, J. R. (1991). Tuberculosis can be controlled with existing technologies: Evidence. Tuberculosis Surveillance Research Unit, Progress Report 1991, pp. 60–72.
- Dye, C., Gamett, G. P., Sleeman, K., & Williams, B. G. (1998). Prospect for worldwide tuberculosis under WHO DOTS strategy. Directly observed short-course therapy. *Lancet*, 352(9144), 1886–1891.
- Dye, C. (2008). Breaking a law. Tuberculosis disobeys Styblo's rule. *Bulletin of WHO*, 86, 4. doi:10.2471/BLT.07.049510 PMID: 18235879.
- Dowdy, W. D., & Chaisson, R. E. (2009). The persistence of tuberculosis in the age of DOTS: Reassessing the effect of case detection. *Bulletin of the WHO*, 87, 296–304.
- Bruchfeld, J., Aderaye, G., Palme, I. B., Bjorvatn, B., Kallenius, G., & Lindquist, L. (2000). Sputum concentration improve

- diagnosis of tuberculosis in a setting with a high prevalence of HIV. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 94(6), 677–680.
34. Hanscheid, T. (2008). The future looks bright: Low-cost fluorescent microscopes for detection of Mycobacterium tuberculosis and Coccidia. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 102(6), 520–521.
  35. Mizuno, K., Chikamatsu Kaono, A., Azuma, Y., Yamada, Y., & Mitarai, S. (2009). Clinical evaluation of acid-fast smear examination with light emitting diode fluorescent microscopy. *Kekkaku*, 84(9), 627–629.
  36. Wang, J. Y., Lee, L. N., Lai, H. C., Liaw, Y. S., Hsueh, P. R., & Yang, P. C. (2007). Prediction of the tuberculosis reinfection proportion from the local incidence. *Journal of Infectious Diseases*, 196(2), 281–288.
  37. Verver, S., Warren, R. M., Beyers, N., Richardson, M., van der Spuy, G. D., Borgdorff, M. W., et al. (2005). Rate of reinfection tuberculosis after successful treatment is higher than rate of new tuberculosis. *American Journal of Respiratory and Critical Care Medicine*, 171(12), 1430–1435.
  38. Heller, R. F., Gemmell, I., Edwards, R., Buchan, I., Awasthi, S., & Volmink, J. (2006). Prioritising between direct observation of therapy and case-finding intervention for tuberculosis: Use of population impact measures. *BMC Medicine*, 4, 35.
  39. Becerra, M. C., Pachao-Torreblanca, I. F., Bayona, J., Celi, R., Shin, S. S., Kim, J. Y., et al. (2005). Expanding tuberculosis case detection by screening household contacts. *Public Health Reports*, 120(3), 271–277.
  40. Fuimaono, A., & Vince, J. (1997). Screening contacts of children with tuberculosis: An important and worthwhile part of case management. *Papua and New Guinea Medical Journal*, 40(2), 69–73.
  41. Okanurak, K., Kitayaporn, D., & Akarasewi, P. (2008). Factors contributing to treatment success among tuberculosis patients: A prospective cohort study in Bangkok. *The International Journal of Tuberculosis and Lung Disease*, 12(10), 1160–1165.
  42. Okeibunor, J. C., Onyeneho, N. G., Chukwu, J. N., & Post, E. (2006–2007). Barriers to care seeking in directly observed therapy short-course (DOTS) clinics and tuberculosis control in southern Nigeria: A qualitative analysis. *International Quarterly of Community Health Education*, 27(1), 23–37.
  43. Bolger, J., Mandie-Filer, A., & Hauck, V. (2005). Papua New Guinea's health sector. A review of capacity, change and performance issues. Discussion Paper No 57F. European Centre for Development Policy Management.
  44. Volmink, J., & Garner, P. (2007). Directly observed therapy for treating tuberculosis. *Cochrane Database of Systemic Reviews* 2007. Issue 4. Art. No.:CD003343. doi:10.1002/14651858.CD003343.pub3.
  45. Volmink, J., & Garner, P. (1997). Systematic review of randomised controlled trials of strategies to promote adherence to tuberculosis treatment. *BMJ*, 315(7120), 1403–1406.
  46. Davidson, H., Schluger, N. W., Feldman, P. H., Valentine, D. P., Telzak, E. E., & Laufer, F. N. (2000). The effects of increasing incentives on adherence to tuberculosis directly observed therapy. *The International Journal of Tuberculosis and Lung Disease*, 4(9), 860–865.
  47. Newell, J. N., Baral, S. C., Pande, S. B., Bam, D. S., & Malla, P. (2006). Family-member DOTS and community DOTS for tuberculosis control in Nepal: Cluster-randomised controlled trial. *Lancet*, 367(9514), 903–909.
  48. Egwage, S., Mkopi, A., Range, N., Haag-Arbenz, V., Baraka, A., Grewal, P., et al. (2009). Patient-centred tuberculosis treatment delivery under programmatic conditions in Tanzania: A cohort study. *BMC Medicine*, 7, 80.
  49. Oscherwitz, T., Tulsy, J. P., Roger, S., Sciortino, S., Alpers, A., Royce, S., et al. (1997). Detention of persistently nonadherent patient with tuberculosis. *JAMA*, 278(10), 843–846.
  50. Burman, W. J., Cohn, D. L., Rietmeijer, C. A., Judson, F. N., Sbarbaro, J. A., & Reves, R. R. (1997). Short-term incarceration for the management of noncompliance with tuberculosis treatment. *Chest*, 112(1), 57–62.
  51. Mori, T. (2004). Reform of Japan's NTP and its technical perspectives. *Kekkaku*, 79(10), 587–604.
  52. Rookkapan, K., Chongsuvivatwong, V., Kasiwong, S., Pariyawatee, S., Kasetcharoen, Y., & Punggrassami, P. (2005). Deteriorated tuberculosis drugs, management system problems in lower southern Thailand. *The International Journal of Tuberculosis and Lung Disease*, 9(6), 654–660.

6. Journal article: Hall J, Gillespie J, Rosewell A, Mapria P. The Papua New Guinea Cholera Outbreak: Implications for PNG, Australia and the Torres Strait. Medical Journal of Australia. 2013. 199(9): 576-577

Perspectives

## The Papua New Guinea cholera outbreak: implications for PNG, Australia and the Torres Strait

Australian assistance is needed to control outbreaks in the short term and to develop infrastructure and health systems in the longer term

The world is currently in the midst of the seventh documented cholera pandemic, which commenced in 1960. Since 2000, there has been a global increase in the incidence of cholera with 7543 deaths globally in 2010. This pandemic is significantly different to the previous six pandemics. The fifth and sixth pandemics had been caused by the "classic" biotype and lasted from 7 to 24 years. This seventh pandemic has been caused by a new biotype of *Vibrio cholerae* serogroup O1 called El Tor and has persisted for over 50 years. It has become endemic in countries in which cholera had not been reported for many years.<sup>1</sup>

The longevity and geographical spread of the current pandemic has been linked to more mobile populations, increased maritime trade and increased sea water temperatures associated with global warming, creating ideal conditions for the transmission of *V. cholerae*. It is within this global context that the cholera outbreak in Papua New Guinea must be viewed.

The outbreak of cholera in PNG was first reported in August 2009 in Morobe Province on the north coast.<sup>2,3</sup> By early 2011 cholera had spread further along the north coast and then south to cover about half of PNG's provinces with a total 15 414 cases reported, including 493 deaths, and a case fatality rate (CFR) of 3.2%.<sup>3</sup> Cholera was first reported in Daru in Western Province in November 2010. Daru is only 50 kilometres from the Australian border. The outbreak in Western Province was associated with the highest number of cases, 3945, and with the highest CFR, 8.8%.<sup>3</sup> Cholera risk factors in the PNG outbreak included defecating in the open or river, and knowing someone who had travelled to a cholera-affected area, while protective factors included having soap for handwashing in the home.<sup>4</sup> The Torres Strait Treaty signed between PNG and Australia at the time of independence ensures that PNG nationals from 13 specified villages in Western Province are permitted to cross into Australian territory for traditional activities such as marriage, trade and fishing, with an estimated 2000 crossings annually. There has been concern about the health impact in northern Australia of these border crossings.<sup>5,6</sup> The Australian media has posed the transmission of cholera across the Torres Strait as a real risk.<sup>7</sup>

### Cholera — prevention and control

Reduced CFRs in a cholera outbreak are associated with early treatment with either oral rehydration solution, for mild or moderate dehydration, or intravenous fluids, for

severe dehydration, and mobilising health services to deliver these interventions immediately. Other essential tasks in the initial phase are identification of the source of the outbreak and securing safe drinking water sources. Antibiotics have been shown to limit gastrointestinal shedding of the vibrios but resistance is now a major issue in their use.<sup>1</sup> Long-term control is still dependent on improved (safe) water supply and (safe) sanitation with the promotion of personal hygiene.<sup>1</sup> Two oral cholera vaccines with killed whole cells of *V. cholerae* been endorsed by the World Health Organization and may provide a future control intervention in acute epidemic outbreaks.<sup>1</sup>

### The Papua New Guinea context

PNG is a case study of the impact of rapid demographic, social and economic change on population health. From 2014, a multibillion-dollar liquefied natural gas project to pipe natural gas from the Highlands and Gulf Province to Port Moresby for export to Asian markets is expected to more than double the gross domestic product of PNG, becoming the main source of government revenue.<sup>8</sup> Extractive industries (mining, gas, timber) have led to population displacement and resettlement, which has placed PNG at greater risk of spread of disease, especially in growing peri-urban settlements where cholera transmission has been most intense.<sup>4</sup> Internally displaced people were among the most vulnerable to excess mortality.<sup>4</sup>

At the same time, the more than 7 million people living in PNG remain among the poorest in the Asia-Pacific region. In 2012, PNG ranked 156th (out of 187 countries) on the Human Development Index. It has some of the worst health indicators in the region compared with its Pacific neighbours, making slow progress in achieving the Millennium Development Goals.<sup>9</sup> Health services in PNG are weak, with significant challenges in providing services in rugged terrain, compounded by inadequate government investment and strategic planning, corruption, poor law and order, with chronic shortages (or complete absence) of essential medicines, lack of skilled health workers in rural health centres, a continuing high burden of disease from malaria, tuberculosis (TB) and HIV, acute or chronic undernutrition in children and low immunisation rates.<sup>9,10</sup> In 2010 only 41% of the PNG population had access to improved water sources, and only 45% had access to improved sanitation.<sup>10</sup> The result is a population with a poor general health status, especially among the young, malnourished and immunocompromised, who are the most vulnerable in a cholera outbreak.<sup>9</sup>

It is within this context that the PNG Department of Health was confronted with the cholera outbreak in August 2009. National, provincial and some district cholera task forces were established to develop cholera

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preparedness and response plans for the relevant jurisdictions.<sup>3</sup> While cholera treatment centres were established within the grounds of provincial hospitals, the difficulties of access to rural communities put massive obstacles in the way of the provision of timely treatment, referral and accurate surveillance for much of the population.

Cholera control measures in Western Province and at the Torres Strait border, based on PNG national cholera control strategies<sup>3</sup> and international evidence, aimed to:

1. train clinical and public health staff in outbreak identification, verification, reporting, assessment and response;
2. improve access to safe water and sanitation in the settlements of Daru, the treaty villages and more broadly;
3. strengthen national laboratory capacity;
4. ensure adequate rehydration supplies and zinc supplements for the clinical management of the disease across the country; and
5. improve planning for emerging diseases nationally.

Implementing these procedures was faced with almost insuperable challenges. Western Province has almost no road network and is characterised by a large system of rivers and mangroves, with villages usually located along rivers with limited communication and resources for disease surveillance. The vast majority of the population live traditional lifestyles in remote villages, and drink untreated river water. Latrines remain uncommon, in part due to the high water tables. Further factors contributing to the spread of cholera in Western Province included the mass gatherings associated with royalty payments from extractive industries, where thousands of villagers travel to and stay in the cholera-affected settlements of an already challenged provincial capital, Daru, for weeks before returning to their villages. High cholera mortality associated with a disease previously unknown to the locals triggered desertion of villages and relocation through and to non-affected areas, thus further driving transmission. These constraints in the delivery of cholera control measures resulted in the high incidence and CFR in Western Province, as mentioned above.

### Implications for the Torres Strait Islands and Australia's development assistance

Despite media alarmism, the cholera problem has remained non-existent on the Australian side of the Torres Strait, thanks to excellent infrastructure, 100% of the population having access to improved water supply and sanitation, and a well nourished population with low rates of the diseases that cause immunosuppression.<sup>10</sup> The health system functions well, with the capacity and resources for a rapid and effective public health response to outbreaks. Higher literacy rates and media coverage mean health promotion messages can be transmitted and taken up at an early stage.

In response to the cholera reports in the Western Province of PNG, Queensland Health issued media alerts

“Extractive industries... have led to population displacement and resettlement, which has placed PNG at greater risk of spread of disease”

outlining education messages as well as strategies to strengthen the cholera control activities in the Torres Strait should they be needed.<sup>11</sup> Queensland Chief Health Officer Jeannette Young noted that “The fact that hygiene and food preparation practices in the Torres Strait are good, there is ready access to safe drinking water, and there is safe disposal of human wastes, means the risk of a local outbreak is low”.<sup>11</sup> Queensland communicable diseases surveillance reports for the weeks after the Western Province outbreak confirmed that cholera had not spread across the Torres Strait.<sup>12</sup>

An Australian response needs to focus on PNG. Australia has been the largest bilateral donor to PNG since independence in 1975, with health as a priority sector. The current PNG–Australia Partnership for Development program is targeting several key areas, mainly in HIV and AIDS, TB and malaria through the PNG health sector-wide approach.<sup>13</sup> The cholera crisis highlights the need for more intelligent use of internal and external investment in health services to build local capabilities. A shift in aid towards developing better infrastructure, particularly in the area of water, sanitation and hygiene, along with building locally appropriate and responsive health systems, will establish a framework to encourage future PNG governments to invest the likely bounty of the energy and minerals boom in sustainable national public health programs.

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- 1 Harris JB, LaRocque RC, Qadri F, et al. Cholera. *Lancet* 2012; 379: 2466–2476.
- 2 Rosewell A, Dagina R, Murhekar M, et al. *Vibrio cholerae* O1 in 2 coastal villages, Papua New Guinea [letter]. *Emerg Infect Dis* 2011; 17: 154–156.
- 3 Papua New Guinea Department of Health. National situational report on cholera in Papua New Guinea as of 28th April 2011. Port Moresby: PNG Department of Health, 2011.
- 4 Rosewell A, Addy B, Komnapi L, et al. Cholera risk factors, Papua New Guinea, 2010. *BMC Infect Dis* 2012; 12: 267.
- 5 Brolan CE, Upham SJ, Hill PS, et al. Borderline health: complexities of the Torres Strait treaty. *Med J Aust* 2011; 195: 503–506.
- 6 Kirby T. Extensively drug-resistant tuberculosis hovers threateningly at Australia's door. *Med J Aust* 2013; 198: 355.
- 7 AAP. PNG cholera outbreak reaches Torres Strait. *Herald Sun* 2010; 9 Nov. <http://www.heraldsun.com.au/news/breaking-news/png-cholera-outbreak-reaches-torres-strait/story-e6frf7px-1225950043300> (accessed May 2013).
- 8 Batten A. Aid and oil in Papua New Guinea: Implications for the financing of service delivery. Canberra: Development Policy Centre, Australian National University, 2011. [http://devpolicy.anu.edu.au/pdf/papers/DP\\_4\\_-\\_Aid\\_and\\_oil\\_in\\_Papua\\_New\\_Guinea\\_implications\\_for\\_the\\_financing\\_of\\_service\\_delivery.pdf](http://devpolicy.anu.edu.au/pdf/papers/DP_4_-_Aid_and_oil_in_Papua_New_Guinea_implications_for_the_financing_of_service_delivery.pdf) (accessed May 2013).
- 9 Bolger J, Mandie-Filer A, Hauck V. Papua New Guinea's health sector: a review of capacity, change and performance issues. ECDPM discussion paper 57F. Maastricht: European Centre for Development Policy Management, 2005. [http://www.ausaid.gov.au/Publications/Pages/5667\\_4407\\_5665\\_6927\\_4021.aspx](http://www.ausaid.gov.au/Publications/Pages/5667_4407_5665_6927_4021.aspx) (accessed May 2013).
- 10 World Health Organization. World health statistics 2010. Geneva: WHO, 2011. <http://www.who.int/whosis/whostat/2010/en> (accessed Sep 2013).
- 11 Queensland Health. Cholera risk still low to Torres Strait residents [media release]. 19 Nov 2010. [http://www.health.qld.gov.au/news/media\\_releases/torres\\_cholera2\\_1119.pdf](http://www.health.qld.gov.au/news/media_releases/torres_cholera2_1119.pdf) (accessed May 2013).
- 12 Queensland Health. Statewide weekly communicable diseases surveillance report. 6 Dec 2010. Brisbane: Queensland Government, 2010. [http://www.health.qld.gov.au/ph/documents/cdb/weeklyrpt\\_101206.pdf](http://www.health.qld.gov.au/ph/documents/cdb/weeklyrpt_101206.pdf) (accessed May 2013).
- 13 Foster M, Condon R, Henderson S, et al. Papua New Guinea country report. Evaluation of Australian aid to health service delivery in Papua New Guinea, Solomon Islands and Vanuatu. Working paper 1. Canberra: AusAID, 2009. <http://www.ode.ausaid.gov.au/publications/documents/working-paper-health-service-delivery-png.pdf> (accessed May 2013).

