

addressed through non-structured interviews with nine hospital-based pharmacists in Phase 3. Results from the different phases were converged during the interpretation phase. Phase 1 survey results were compared to themes identified from observations (Phase 2) and interviews (Phase 3) to confirm actual PTC structure and activities. Ethical clearance was obtained from Medunsa Campus Research and Ethics Committee and permission granted by provincial authorities. **Findings:** The results showed that most professionals were represented in the PTCs, with variations according to hospital level of care. Membership of all PTCs included a pharmacist, who in the majority of cases fulfilled the secretariat position. Most of the PTCs conducted meetings at least once/month. Main PTC activities included dissemination of decisions (100%) and formulary management (89.5%). Reporting of adverse drug reactions (ADRs) and medication errors PTC function was poor at all levels. Lack of expertise in pharmacoeconomics and evidence-based decision-making was identified as one of the challenges in formulary management. Survey results and interviews with pharmacists revealed that insufficient staff and poor attendance of meetings hindered PTC activities.

Interpretation: Lack of expertise on the application of pharmacoeconomic analysis and evidence-based decision-making in formulary management, and limited ADR reporting in attaining rational medicines use at all levels, were identified as the main challenges in the activities of the PTCs. Future programmes should strengthen PTCs in specialised aspects of formulary management, and further training in the principles of pharmacovigilance is required to enhance ADR reporting, as well as to ensure compliance with both WHO and provincial guidelines. Strong institutional support of PTCs should be encouraged in order to ensure better participation of staff in PTC activities to guarantee rational medicines use in public sector hospitals in Gauteng Province.

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Abstract #: 02GMHE005

Selecting essential medicines: How economic data are used throughout the WHO decision making process

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Background: For the past decade, the World Health Organization has strengthened its evidence-based process to make decisions about which products are added to the global Essential Medicines List (EML). The EML identifies high-quality and reasonable-cost medicines that address priority health needs, and over 155 countries have adapted this list for their own national EMLs. The EML is an important tool for global governance, and decisions about additions have a major impact on global and national decisions, with significant budgetary, ethical and health implications. The objective of this study is to analyze the quality of publicly available economic evidence in applications for and decisions about addition to the EML.

Methods: The paper analyzes price data and economic evaluation data presented in applications, the assessment of this information by reviewers of the application and how these two sources of information were used in making EML decisions. The sample includes 134 applications for additions to the WHO adult EML, from 2002 to 2013 (available on the WHO website) and 177 reviews of applications. The key variables of interest included provision of price and/or cost-effectiveness information within the application; discussion of these economic data by expert reviewers; and the WHO Committee's decision about whether to add each medicine to the list.

Findings: This analysis found significant deficiencies in the provision of required economic data in new applications to the EML: only 6% of 134 applications included complete price data and economic evaluation data, and many omitted or misinterpreted the economic evaluation section entirely (57.5% and 17.9%, respectively). Similarly, only 36% of reviewers mentioned price information and 22% mentioned economic evaluation. Despite the high degree of data incompleteness in the studied applications, all were reviewed by the Committee; and there was no statistical association between completeness of information and likelihood of addition to the EML. Qualitative analysis indicates that the WHO tries to address information gaps in applications by conducting its own review and analysis.

Interpretation: This is the first comprehensive analysis of the use of economic data in the EML decision process; it examines applications, recommendations and decisions across all medicine types and over a period of 12 years. The results suggest that improvements could be made to increase the transparency and efficiency of the EML application process; applicants should be encouraged, and perhaps required, to submit high-quality and complete applications, which includes economic data (or explicit mention of a lack thereof). Additionally, WHO should provide explicit rules and methods for how economic data are used in decision making for the EML and the consequences of not including required data.

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Abstract #: 02GMHE006

Routine immunization consultants (RICON) review in Nigeria: A country driven management approach for health systems strengthening in routine immunization

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Background: Since 2006 the Nigerian government has deployed Routine Immunization (RI) Consultants to all 36 states and the Federal Capital Territory to serve as technical assistance (TA) for RI. To date, there has been no systematic evaluation of the consultant program. Here we review this country driven management approach to TA in order to provide recommendations to inform future strategies.

Methods: We conducted a retrospective programmatic review from Jun-Sept 2014 using qualitative and quantitative methods. In total, 84 qualitative interviews with 101 participants were recorded. Recorded data was complete and high quality for 70 of these interviews, thus qualitative data analysis was conducted on 70 in-depth interviews and focus group discussions with a total of 82 individuals from 7 States and the FCT in Nigeria. Respondents were purposively drawn from national, state, and local government levels. Additionally, an online survey was sent to 89 respondents across all states. All qualitative interviews were audio-recorded, transcribed verbatim, hand-coded and analyzed using Atlas.ti software. This study was approved by the JHSPH IRB and the NHREC of Nigeria.

Findings: The majority of respondents were male (66%, n=67) with an average age of 50 ± 5.6yrs (range 33-67yrs). According to their TORs, RI consultants are required to play a role in advocacy, technical assistance, supportive supervision, M&E, and capacity building. Overall, RI Consultants were inconsistently deployed across states. Currently only 23 of 36 States and the FCT have an active RI Consultant. State level respondents considered advocacy and supportive supervision as the consultant's most important roles. RI Consultants activities were generally well aligned with their TORs although gaps were found in their ability to monitor state use of RI funds. In three of seven states, Consultants were well integrated as members of the State RI teams. Those not integrated

within the team tended to serve more in an advisory rather than participatory role. Key challenges in program implementation were related to inadequate and inconsistent inputs (salaries, transport, dedicated office space) and gaps in management. Specific factors that undermined consultant's effectiveness included lack of formal orientation at inception, no clear job performance targets, no performance feedback or monitoring of Consultants, weak supervision, and no co-management between the National and State levels on Consultants activities.

Interpretation: While Consultant's TORs are fairly well observed, weaknesses in managerial and material inputs affect performance. This study provides evidence that could inform efforts to improve the management and implementation of the RI consultant program. Our finding may help to understand operational challenges to implementing TA interventions more broadly, and can act as a tool for leadership in the design and management of these programs.

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Abstract #: 02GMHE007

Lessons for public-private partnerships from ACHAP's contributions to the fight against HIV/AIDS in Botswana

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Program/Project Purpose: In 2000, Botswana was a country in crisis. The HIV/AIDS epidemic was ravaging the country, with an adult prevalence rate over 28 percent. Projections from the World Health Organization (WHO) at the time indicated that 85 percent of 15 year-olds in the country would eventually die of AIDS. In 2013, FSG conducted a strategic review of the African Comprehensive HIV/AIDS Partnerships (ACHAP), focusing on the successes, challenges, impact, and lessons learned by the partnership over its 14 year history. ACHAP is a public-private partnership (PPP) formed by Merck, the Bill & Melinda Gates Foundation, and the Government of Botswana that contributed significantly to the dramatic scale-up of the antiretroviral therapy (ART) program which today reaches an estimated 85 percent of those in need.

Structure/Method/Design: Over the course of 12 months, FSG conducted over 75 interviews with key informants, three site visits to Botswana, a review of hundreds of documents pertaining to ACHAP's strategy and operations, and a review of external literature assessing ACHAP, HIV in Botswana, key interventions, and other PPPs.

Outcomes & Evaluation: FSG found that ACHAP's story is one of adaptation. Lessons from this partnership have clear implications for PPPs today working to solve health issues in complex and often broken healthcare systems. PPPs need to develop the capacity to adapt to ever changing political, epidemiological, and social contexts. By studying ACHAP's successes and failures, FSG identified critical and timely recommendations for the field.

Going Forward: FSG has put forward six key lessons that PPPs today can and should integrate into their work: Emphasize nimble execution and leverage flexible funding upfront to design the right interventions and role for the PPP. Set clear milestones upfront and be intentional about strategic shifts to ensure the organization has the skill and capacity to support the shifts. Ensure the management and governance structure supports the PPP design and goals. Plan for the sustainability of the organization and its impact and revisit the plans on an ongoing basis to ensure the success of the partnership. Set up the PPP to be a learning body that both informs the field and regularly test the strategic direction of the partnership. Design the appropriate collaboration mechanisms to allow for alignment with the government to ensure success of the partnership. ACHAP formed at a time when many other PPPs on health issues were emerging putting it in a position to serve as

one of the few examples that show the challenge of remaining relevant and effective over time.

Funding: FSG, a nonprofit consulting and research firm, received funding from the Merck Foundation to conduct the research.

Abstract #: 02GMHE008

A comparative cost-benefit analysis of medical equipment sterilization methods in a rural Nicaraguan clinic

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Program/Project Purpose: The rural clinic in El Tololar, Nicaragua routinely turns away dental and women's health patients because of a lack of sterile medical equipment. Clinic staff, including the director and dentist, identified this as a problem that could be ameliorated by having on-site equipment sterilization, but lacked evidence to rigorously determine the optimum method for sterilization.

Structure/Method/Design: Therefore, from January-February 2014, I performed a comparative cost-benefit analysis of three methods of medical equipment sterilization in their clinic: the status quo of shipping medical equipment back to the main hospital about one hour away, chemical sterilization, or purchasing an autoclave for on-site use. I visited the closest medical supply store, priced out goods, and calculated the net present value (NPV) and internal rate of return (IRR) for each sterilization method. I found that the autoclave would maximize NPV, while chemical sterilization maximized IRR. In addition, I calculated annualized return on investment (ROI) and time to ROI, which was shortest for chemical sterilization.

Outcomes & Evaluation: With the main criterion of maximizing NPV, I concluded that obtaining an autoclave would be the optimal solution to the clinic's problem. I have presented my findings to a US-based business, and hope to convince them to make a relatively small investment by US standards to improve the financial outlook and health of this rural community. The clinic has agreed to take responsibility for ongoing maintenance and upkeep of the autoclave. **Going Forward:** This project demonstrates a powerful financial tool that can be used in the global health setting to decide between projects from a fiscal perspective.

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Abstract #: 02GMHE009

The economic and social impact of patient care attendants at Mulago national referral hospital, Kampala, Uganda

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Program/Project Purpose: Uganda has one doctor per 15,000 patients and one nurse per 11,000 patients. Critically or terminally ill patients are commonly referred to Mulago Hospital in Kampala. Even at Mulago, the number of nursing staff is insufficient to meet the significant needs of all patients. Thus, it is common for inpatients to be accompanied by an attendant to aid in their care. However, little is known about the lives and experiences of patient care attendants. **Aim:** The primary goal of this study was to learn about the lives, impact and economic challenges of attendants at Mulago Hospital.