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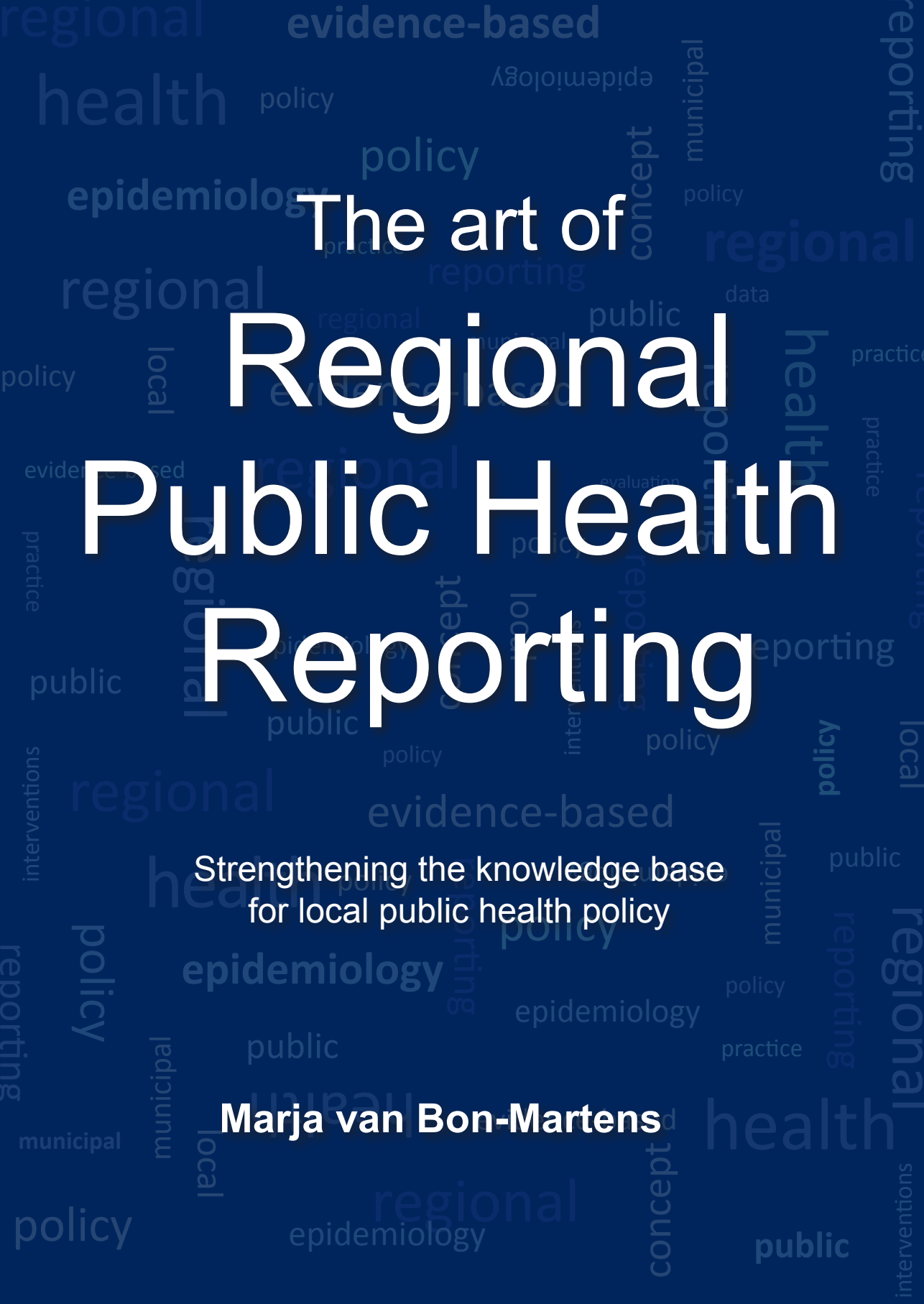
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The art of Regional Public Health Reporting

Strengthening the knowledge base
for local public health policy

Marja van Bon-Martens

**THE ART OF REGIONAL
PUBLIC HEALTH REPORTING**

**STRENGTHENING
THE KNOWLEDGE BASE FOR
LOCAL PUBLIC HEALTH POLICY**

Marja van Bon-Martens

The research for this thesis was performed at the Academic Collaborative Centre for Public Health Brabant: the Department of Tranzo, Tilburg School of Social and Behavioral Sciences, Tilburg University, Tilburg, the Regional Health Service (GGD) Hart voor Brabant, 's-Hertogenbosch, the Regional Health Service (GGD) West-Brabant, Breda, and the National Institute for Public Health and the Environment (RIVM), Bilthoven, the Netherlands.

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Proefschrift

ter verkrijging van de graad van doctor aan de Universiteit van Tilburg,
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Chapter **1**

General introduction

1.1 Evidence-based public health policy

Policy-making is a political process. This implicates that policy decisions in public health are always influenced by factors other than evidence, including institutional constraints, interests, ideas, values, and external factors, such as crises, hot issues, and concerns of organised interest groups.¹⁻³ Decision-making about what was effective has shifted from ‘opinion-based’ (based on opinion) to based on values, resources and needs (values-based), though decisions about populations tend to be based on a combination of three factors: evidence, values, and resources and needs.² To do more good than harm at reasonable costs, evidence derived from research is needed.² On this Chalmers stated: “Policy makers who intervene in other people’s lives should acknowledge that, although they act with the best intentions, they may sometimes do more harm than good”.⁴ Therefore, evidence-based public health policy is needed to achieve significant health gains and a better use of scarce resources.¹ Decisions will have to be made explicitly and openly, a process that is accelerated by demand for openness and accountability, even in cases for which the evidence is difficult to find or poor in quality.²

Evidence-based, as described by Sackett, means the “conscious, explicit and judicious use of the best evidence available in decision-making”. Doctors practising evidence-based medicine will identify and apply the most efficacious interventions to maximise the quality and quantity of life for individual patients.⁵ Similarly, Jenicek defined evidence-based public health as “...the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of communities and populations in the domain of health protection, health maintenance and improvement (health promotion)”.⁶ Analogously, evidence-based public health policy will identify and apply the most efficacious interventions to maximise the quality and quantity of life for the community’s health. Key components of evidence-based public health include, amongst others, using data and information systematically, engaging the community in decision making, conducting sound evaluation, and disseminating what is learned.³

The concept of ‘evidence-based’ is often misconceived as purely ‘science-based’.^{1, 7} However, typical and essential for evidence-based medicine and, analogously, for evidence-based health policy, is a professional judgment of both contextual and scientific (global) evidence in decision-making. As Sackett already stated: “Without clinical expertise, practice risks becoming tyrannised by evidence, for even excellent external evidence may be inapplicable to or inappropriate for an individual patient. Without current best evidence, practice risks becoming rapidly out of date, to the detriment of patients.”⁵

An evidence-based approach acknowledges that policy makers may be informed by imperfect information. If policies do not work as expected, political risk is reduced because this approach implies that policy makers may alter course.¹ Also, because evidence is usually imperfect, the “absence of excellent evidence does not make evidence-based decision making impossible; what is required is the best evidence available not the best evidence possible”.^{2,3}

In addition, policy makers should not only take into account what is known, but also what is expected to do the most good while considering ethical and social considerations.⁸ Furthermore, they have to take into account other interests than those of public health, such as economic interests. Besides, other factors than evidence are also of influence on policy-making, for example coincidence, timing, power, and competition.^{1,9-12} Therefore, to stress the role of evidence and the ambition to improve the extent to which policy decisions are informed by research evidence, the term ‘evidence-informed’ can be used interchangeably with ‘evidence-based’.^{1,13} In this thesis, evidence-based is defined in this way.

1.2 Evidence-based public health in the Netherlands

Since 1997, the National Institute for Public Health and the Environment (RIVM) has had the legal obligation to support national public health policy and to report periodically on public health status.¹⁴ This is carried out through the publication of a national Public Health Status and Forecasts report (PHSF) every four years.¹⁵⁻¹⁹ These PHSFs are acknowledged as one of the best practice-based models for public health reports on the national level in Europe.^{20,21} Moreover, they have been successful in contributing to national evidence-based public health policy-making in the Netherlands.²²

However, as in other European countries, regions and Local Authorities in the Netherlands are becoming an increasingly important and administrative level in public health policy-making. For example, the European Union comprises 27 Member States with 271 regions, among which the economic and social disparities are substantial.²³ In this context, regional investments in health are being supported through structural funds with a view to contributing to reduce health inequalities between and within Member states and thus to foster social and economic cohesion across Europe.²⁴

Because of the Dutch PHSF’s primarily *national* character, they had only limited potential for evidence-based *regional* and *local* public health policy. For example, these PHSFs do analyse health differences between regions, but they do not assess municipal health status, nor do they assess health differences between municipalities. However,

according to Oxman et al., local evidence (from the specific setting in which decisions and actions will be taken) is needed to inform judgements about local problems, local options for addressing problems, and local implementation strategies.¹

During a few years in the late eighties, the Dutch government stimulated the Municipal or Regional Health Services (RHSs) financially to appoint epidemiologists who could contribute to evidence-based health policy by monitoring the regional health status and by evaluating interventions and programmes.²⁵ In 1990, the Dutch government introduced the Public Health (Preventive Measures) Act.²⁶ This law has obliged Local Authorities to base their local public health policy on an epidemiological analysis of municipal health. Due to an amendment in 2000, this law also has obliged the Local Authorities to draw up a local public health memorandum every four years. An amendment in 2003 regulated that this memorandum should be preceded by a national comparable collection and analysis of epidemiological municipal health information. These epidemiological municipal health assessments have been carried out by the Local Authorities' RHSs, dedicated to the monitoring, protection, and promotion of public health. The underlying intention of the Local Authorities' legal obligation to assess municipal health prior to the development of public health memoranda is to stimulate evidence-based local health policy, under the assumption that this would contribute to the local implementation of efficient and effective measures and interventions and to a justified distribution of scarce resources.

1.3 The development of regional public health reporting

Since the introduction of the RHSs' epidemiological task in the Netherlands, regional public health reporting by the RHSs has evolved significantly. First, the RHSs mainly conducted occasional regional surveys, particularly in the adult population, and analysed existing registrations, like mortality figures, on a regional level. Second, after the introduction of the Public Health (Preventive Measures) Act in 1990 and its amendment in 2003, the RHSs performed surveys and analysed registrations more and more on the municipal level. Third, these assessments were structurally implemented in a four year cycle instead of being performed occasionally. Fourth, more age groups than adults were involved: children (0-11 years), youth (12-18 years) and the elderly (65 years or older). Fifth, the development of Dutch national standards for local survey questions led to more comparable local health indicators.²⁷

However, despite this evolution of regional public health reporting by the RHSs, the epidemiological information had not been greatly used in the development of local public health policies yet.^{11, 28-32} Differences between the assessments, for example in data collection, data analysis, topic selection, use of existing data-sources, and

reporting format, led to less comparability of municipal figures with national figures and with figures from other municipalities. Besides that, many RHSs' assessment reports lacked an integral assessment of the main health problems in the total population (model-driven). A model-driven report requires a conceptual approach, in which an underlying concept serves as a framework for all health issues that are covered in the report. This underlying concept (model) contains different topics such as demographic factors, health determinants, and health policy and interrelates these with health indicators and data for health services, care and costs.²⁰ The opposite to a conceptual approach is the collection of data which then serves as starting point for the description of those aspects of health where data are available (data-driven).²⁰ Indeed, RHS reports on diverse target groups (children, adolescents, adults, and the elderly) have been published separately (data-driven), making prioritising difficult if not impossible for policy makers.

The RHSs therefore still face the challenge of how to make their epidemiological information more useful for local public health policy-making. From this perspective, two main issues arise. First, there is no scientific guidance on how to make RHS public health reporting more useful for local public health policy-making. Second, little is known about the extent to which epidemiological information is used in local and regional health policy-making, and which factors, such as the characteristics of public health reports, may influence the actual use of such information.³³ This thesis addresses these two issues.

1.4 Purpose of this study

The general purpose of this study is to strengthen regional public health reporting as the knowledge base for evidence-based local public health policy. This was done by developing an empirical model for regional public health reporting in two RHS regions, building on the model and experience of the Dutch PHSFs. For the benefit of other RHS regions, the empirical model was to be made transferable in the form of guidelines for planning and execution, a framework for the analyses and reports, and a number of proven tools for a regional PHSF. Consequently, a theoretical framework was developed as a sound basis for improving the quality and quality assessment of regional public health reporting in the Netherlands. This framework should identify context-independent characteristics with impact on local public health, to be used by the producers of regional public health reports as a checklist to improve their reports' quality. As a result, the Local Authorities would benefit from more usable and better tailored regional public health reports, ultimately leading to greater policy impact.

Four questions were derived from this general purpose:

1. Can a regional variant of the national PHSFs be developed and, if so, which of its characteristics could then serve as building blocks for an empirical model for regional public health reporting?
2. What are the main quality criteria of regional public health reporting in the Netherlands?
3. How can the regional variant of the national PHSF further be improved, to enlarge policy impact?
4. What is the use and usefulness of regional epidemiological information in local policy and in scientific research?

The study was divided into three parts. In the first part of the study, regional PHSFs for the Local Authorities were developed in two pilot RHS regions on the basis of the model and experience of the national PHSF as well as on relevant theories and research literature. Based on this developed empirical model and relevant research literature, a theoretical framework for the quality of regional public health reporting in the Netherlands was developed, using the method of concept mapping with experts.

In the second part of the study, the developed regional PHSFs in the two pilot regions were evaluated with regard to familiarity, use, usefulness, and necessary conditions. The success factors and recommendations resulting from this evaluation study will be used for the further development of the next regional PHSF in both regions, as well as for the further development of an empirical model for a regional PHSF. Consecutively, a feasibility study assessed the relevance and possibilities for aligning the regional PHSF in one pilot region with the Dutch Supply and Demand Analysis Monitor (VAAM), for the development of a cohesive information provision for policy and planning in public health and health care at the local and regional level.

In the third and final part of the thesis several possibilities of how to use and value regional epidemiologic information were explored. Based on a theoretical framework for research utilisation, the actual *local policy use* of the Dutch RHSs' epidemiologic reports by municipal health officials as well as its associated factors were quantified. The *scientific research use* of regional epidemiological information was illustrated by two studies: the first answering a research question concerning personality and health inequalities, and the second study answering a research question concerning the relation between domestic violence, loneliness, and personality.

1.5 Outline of the thesis

Part I. Developing an empirical and theoretical model for regional public health reporting

Chapter 2 describes the results of the pilot study in which regional Public Health Status and Forecasts reports (PHSFs) were developed in two Dutch pilot regions from November 2005-June 2007, based on the model and experience of the Dutch Public Health Status and Forecasts (PHSF). The two RHSs involved were the RHS 'Hart voor Brabant', at the time of the study serving 29 Local Authorities (1,009,000 total inhabitants), and the RHS 'West-Brabant', then serving 18 Local Authorities (676,000 total inhabitants). Three starting points for this pilot were determined in a preparatory feasibility study: the products to be developed, the project organisation of the pilot study, and a regional elaboration of the conceptual model of the national PHSF. This pilot development of a regional PHSF resulted in an empirical model for regional public health reporting characterised by its 1) products, 2) content and design, and 3) underlying process and organisation.

The developed regional PHSFs consisted of three products: 1) a Regional Report with key messages for the RHS region, 2) a Municipal Report per municipality with key messages for local health policy, and 3) a website with up-to-date information for public health policy-making on the most relevant public health themes. **Chapter 3** describes in more detail the development and principles of the regional PHSF website: the Regional Health Compass (www.regionaalkompas.nl). This website was specifically designed to support policy makers with the translation of local health problems into concrete plans of action and it provides information about the effectiveness of interventions and local policy measures, which is needed when translating strategic policy into policies for implementation.

Chapter 4 describes the study that was set up to develop a theoretical framework for the quality of regional public health reporting in the Netherlands. Using concept mapping as a standardised research method for conceptualisation, 35 relevant Dutch reporting experts formulated specific quality criteria of regional public health reports. After structuring and statistical processing, the results were represented graphically, discussed and interpreted in a small working group, leading to the final concept map. This concept map can be used as a theoretical framework for understanding quality of regional public health reporting as a concept, indicating relevant domains and criteria.

Part II. Improving the empirical model for regional public health reporting

The familiarity, use, usefulness and conditions of the regional Public Health Status and Forecasts Reports in the two Dutch pilot regions were evaluated, among staff concerned and (intended) users, by means of questionnaires, (group) interviews and document analysis. This evaluation study and its results are elaborated on in **Chapter 5**. Success factors and recommendations arisen from this evaluation study will be used in the further development of the next regional PHSF in both regions. Moreover, they are used as input for the development of a theoretical model for regional public health reporting.

Chapter 6 describes the feasibility study that was set up to assess the relevance of and possibilities for aligning the regional PHSF in one pilot region with the Dutch Supply and Demand Analysis Monitor (VAAM). This study was supported by the Dutch Ministry of Health, Welfare and Sport with the aim of developing a cohesive information provision for policy and planning in public health and primary health care at the local and regional level. General idea was that such a cohesive information provision would also lead to a better alignment of public health policy and health care policy at the local level, ultimately resulting in an integrated public health (care) policy.

Part III. Using regional epidemiological information in policy and research

Chapter 7 gives insight into what extent the RHS's epidemiological reports are used during the development of local health memoranda and of the factors that influence this use. A survey was developed and set out among local health officials, as they had been found to have the best insight in policy processes. For instrumental, conceptual and symbolic use, the nature and extent of research utilisation were measured specifically for the Dutch context.³⁴

Chapter 8 describes a more classical epidemiological study, to illustrate the usefulness of the RHSs' epidemiological data for scientific research that might be relevant for local public health policy. This study was designed to expand our understanding of the role of Type D personality as a possible explanation of health inequalities, aiming to quantify Type D personality's contribution to the associations between socioeconomic status (SES) and different lifestyle-related risk factors and health. Data from two cross-sectional Dutch surveys among the general population (aged between 19 and 64 years) were used (response 55.3%, n=8,693). Though the cross-sectional design hinders any etiological inferences to be made, the study lead to interesting insights, with a potential public health policy impact.

Chapter 9 also illustrates the usefulness of the RHSs' epidemiological data for scientific research and describes a study that was set up to investigate whether differences in loneliness scores between individuals with a Type D (distressed) personality type and subjects without such a personality varied by domestic violence victimization. Data from a cross-sectional Dutch survey among the general population (aged between 19 and 64 years) was used (response 47.2%, n=660). The results of this study suggest that personality is related to loneliness in case of domestic victimization, implying that victim support agencies should be more aware of the victim's personality as a prognostic factor for adverse health outcomes as well as a factor that is relevant for the intervention offered.

General discussion

Chapter 10 summarizes and integrates the main findings of the study. The methodological limitations and strengths of the study are then reflected on. Finally, implications for the practice of regional public health reporting and for future research and development in this area will be discussed.

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Part I

DEVELOPING AN EMPIRICAL AND THEORETICAL MODEL FOR REGIONAL PUBLIC HEALTH REPORTING



Chapter 2

The development of an empirical model for regional public health reporting

A descriptive study in two Dutch pilot regions

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PW Achterberg, JAM van Oers

Currently under review at a public health journal

Abstract

Aim. To develop and describe an empirical model for regional public health reporting, based on the model and experience of the Dutch national Public Health Status and Forecasts (PHSF) as well as on relevant theories and literature.

Methods. Three basic requirements were chosen in a preparatory feasibility study: the products to be developed, the project organisation of the pilot study, and a regional elaboration of the conceptual model of the national PHSF. Subsequently, from November 2005-June 2007, a regional PHSF was developed in a two Dutch pilot regions, to serve as a base for the empirical model for regional public health reporting.

Results. The developed empirical regional PHSF model consists of different products for different purposes and target groups. Regional and Municipal Reports aim to underpin strategic regional and local public health policy. Websites contain up-to-date information, aiming to underpin tactical regional and local public health policy by providing building blocks for translating strategic policy priorities into concrete plans of action. Numerous stakeholders are involved in the development of a regional PHSF. The developed empirical process model for a regional PHSF connects to the theoretical framework in which interaction between researchers and policy makers is an important condition for the use of research data in public health policy.

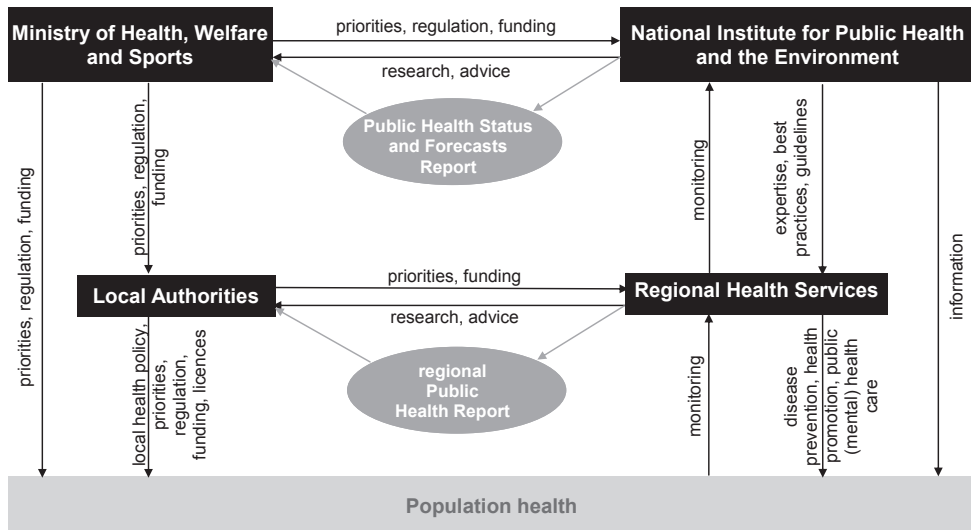
Conclusion. The empirical model for a regional PHSF can be characterised by its 1) products, 2) content and design, and 3) underlying process and organisation. This empirical model can be seen as first step in the direction of a generic model for regional public health reporting.

2.1 Background

2.1.1 Introduction to the problem

In the Netherlands, public health is defined as ‘the sector of health care and public administration that focuses on disease prevention and health protection and promotion of the general population or groups within that population’.¹ The state, represented by the Ministry of Health, Welfare and Sport, makes public health services available to the public. Under the Dutch Public Health Act, municipalities are assigned the tasks of protecting, monitoring and promoting the health of their citizens, for example youth health care, infectious disease control, vaccination, technical hygiene care, and health promotion programmes. Most municipalities share a Regional Health Service (RHS) which organises, implements or facilitates public health activities under the authority of the municipalities.¹ The Dutch public health system is presented schematically in Figure 2.1.

Figure 2.1. The Dutch public health system



Source: adapted from Boot & Van Oers, 2010.¹

Since 1997, the National Institute for Public Health and the Environment (RIVM) has the legal obligation to support national public health policy and to report periodically on public health status. This is carried out through the publication of a national Public Health Status and Forecasts report (PHSF) every four years (see Figure 2.1), which is based on existing (epidemiological) data and information.^{2,3} To stimulate evidence-based health policy-making at the local level the Dutch Public Health (Preventive Measures) Act (WCPV, WPG) obliges the Local Authorities since 2003 to assess municipal public health, based on national comparable collection and analysis of

epidemiological data. Assessments of municipal public health are carried out by 28 Regional Health Services (RHSs), serving all 418 Dutch municipalities and dedicated to the monitoring, protection, and promotion of public health (see Figure 2.1).

Since the introduction of the WCPV, the Dutch RHSs' epidemiological task has evolved from conducting occasional regional surveys particularly in the adult population and from analysing existing registrations like mortality figures on a regional level, to structural monitoring in a four year cycle at the local level for different target groups (children, adolescents, adults, and the elderly). Furthermore, development of Dutch national standards for local survey questions led gradually to more comparable local health indicators.⁴ However, the RHS's epidemiological information has not yet been widely used in the development of local public health policies.⁵ Moreover, differences between the assessments, for example in data collection, data analysis, topic selection, use of existing data-sources, and reporting format, led to less comparability of municipal figures with national figures and with figures from other municipalities. Besides that, many RHS assessment reports lack an integral assessment of the main health problems in the total population. Reports on diverse target groups (children, adolescents, adults, and the elderly) have been published separately, making prioritising difficult if not impossible for policy makers. Little is known about the extent to which epidemiological information has been used in local and regional public health policy-making in the Netherlands, and which factors may influence the actual use of such information.⁶ The RHSs therefore face the challenge of how to make their epidemiological information more useful for local public health policy-making.

2.1.2 Theoretical background

From information to policy

The gap between research and policy

In recent years, the gap between research and policy has been given a great deal of attention.⁶ One of the important causes of this gap is the difference in the definition of 'evidence'. In this respect, Jansen refers to 'scientific evidence' and 'policy-based evidence'.⁷ Evidence can be defined not only by its (scientific) quality, but also by its relevance and applicability to a specific context.⁸ In order to make more use of epidemiological information in local public health policy, there should be not only an improvement of the (scientific) quality of the information, but also of its relevance for local public health policy and its translation into relevance for the local context.

The interaction model is generally regarded as the main explanatory model for research utilisation in policy, indicating that interaction between different stakeholders in the research and policy processes is regarded as an important condition for the use of

research in policy development.^{6,9} This interaction is influenced by possible barriers with respect to expectations, transferral, acceptance, and interpretation.⁶

From data to wisdom: the DIKW-hierarchy

The data-information-knowledge-wisdom (DIKW) hierarchy is one of the most fundamental and widely recognised models in the information and knowledge literature.^{10,11} For wise policy decisions, policy makers need knowledge about public health, beyond ‘just’ information and data. However, the RHS assessment reports of municipal public health mainly addressed the information level of this hierarchy. Even international and national literature on public health reporting focuses mainly on data and information, for example the methods of data collection and monitoring health status, public health indicators, and city health profiles. Consequently, the literature gives hardly any clue as to how to integrate the RHSs’ epidemiological information into knowledge that is useful for local public health policy.

Public health reporting: previous experiences

European and American experience at national and regional levels

The issue of how to report on public health with impact on public health policy is also of interest internationally.¹²⁻¹⁷ However, international literature is mainly practice-based rather than science-based, in Europe as well as in the United States.

In Europe, two major EU-funded projects dealt with this issue. In the EVA-PHR project (EVALuation of Public Health Reporting), a framework was developed for the description and analysis of national and regional public health reports, mainly based on expert discussions. This framework consisted of an agreed list of 50 criteria, arranged under seven headings, such as comprehensiveness, structure, policy orientation, and data.^{13,15} The following PIA-PHR project (Policy Impact Assessment of Public Health Reporting), aimed at developing a methodology for PHR activities, provided recommendations to realise policy impact through PHR activities, such as working for a conceptual frame, adequate resources, optimising access to relevant information, providing ‘new’ knowledge to attract attention, interacting with policy entrepreneurs, and using a professional public relations strategy.¹²

In the United States, based on a review of a number of Community Health Assessments (CHAs) throughout the US plus subsequent discussions with experts, the RAND Corporation developed a list of 21 criteria to describe the usefulness of individual CHAs. These criteria fall into three categories relating to content, format, and impact.¹⁶ Based on these criteria, a web-based tool was developed to measure strengths and weaknesses of CHAs among (potential) users.¹⁷

Dutch national public health reporting as a best practice model

The four-yearly Dutch Public Health Status and Forecasts reports (PHSF) provide a practical elaboration of both theoretical perspectives: research utilisation and the DIKW-hierarchy. First, in the research process of the PHSF, the interaction between researchers, policy makers, and other stakeholders plays an important role, with attention on the possible barriers to interaction: expectations, transferral, acceptance, and interpretation. Second, through the integration and the subsequent interpretation of all available epidemiological information by experts, this information is transformed into knowledge, the basis for wise judgement by policy makers. The national PHSF acts as a consensus platform for scientific epidemiological knowledge, reducing the political discussion around the value of the figures, politicised observations, and the agenda.¹⁸

Besides providing for a practical elaboration of the theoretical perspectives of both research utilisation and the DIKW-hierarchy, the Dutch PHSFs seem to meet most practice-based criteria as well: they are acknowledged as one of the best practice-based models for public health reports on the national level in Europe.¹³

Indeed, on the national level, these Dutch PHSFs have been successful in contributing to evidence-based public health policy-making in the Netherlands. However, because of their primarily national character, they have only limited potential for evidence-based regional and local public health policy. Nevertheless, the underlying model can be seen as the best available model for a regional public health reporting.

2.1.3 Aims

Assuming that a regional variant of the national PHSF would have a greater impact on the local public health policy than the current RHSs' epidemiological information, this study aimed to develop an empirical model for regional public health reporting, based on the model and experience of the Dutch national Public Health Status and Forecasts (PHSF) as well as on relevant theories and literature. For this purpose, regional PHSFs were developed in two pilot regions to serve as a base for the empirical model for regional public health reporting. This article describes this development and the resulting empirical model.

2.2 Methods

The development of a regional PHSF in two pilot RHS regions was started in 2005. The two RHSs involved were the RHS 'Hart voor Brabant', at the time of the study serving 29 Local Authorities (1,009,000 total inhabitants), and the RHS 'West-Brabant', then serving 18 Local Authorities (676,000 total inhabitants). Both RHSs had been collecting data on the municipal population's health by using questionnaires

for different target groups and registrations in a four year cycle, using national standards for health indicators whenever available, and had reported these data for each study separately by publishing reports and tables, and through oral presentations on demand. In these reporting activities, local figures were usually compared with the regional figures.

For the development of the regional PHSF, a delegation of the RHS staff (epidemiologists and health policy advisors), the RIVM staff (researchers) and the local public health officials in these two pilot regions had chosen three basic requirements in a preparatory feasibility study: 1) the products to be developed, 2) the project organisation of the pilot study, and 3) the regional elaboration of the conceptual model of the national PHSF based on existing epidemiological data and information.¹⁹

2.2.1 Products

The regional PHSF should consist of three parts: 1) a Regional Report per region with key messages for the RHS region, 2) a Municipal Report per municipality with key messages for local health policy, and 3) a website with up-to-date information for public health policy-making on the most relevant public health themes. Table 2.1 shows the relationship between the regional PHSF products and those of the national PHSF.¹⁹

Table 2.1. National and regional PHSF products

NATIONAL	REGIONAL
National Report for the Netherlands	Regional Report for each region
National key messages (National Report Chapter 1)	Regional key messages (Regional Report Chapter 1) Municipal Reports for each municipality
Website: National Health Compass (www.nationaalkompas.nl)	Website: Regional Health Compass
Website: National Atlas of Public Health (www.zorgatlas.nl)	-
Thematic policy reports	-

2.2.2 Project organisation

Essential conditions for drawing up a regional PHSF were considered to be the commitment of the users and executive bodies, as well as sufficient capacity of researchers and policy advisors, and a clear and practical project structure with agreement on responsibilities and tasks.¹⁹ In one project organisation, acting for both pilot regions simultaneously, these responsibilities were spread over three levels, all with participants from the co-operating partners.

A *steering committee* was responsible for strategic decisions on the development of the regional PHSF and consisted of mandated representatives of the management of co-operating partners. The *project group*, responsible for the content, development and execution of the regional PHSF, consisted of researchers, supplemented by policy advisors, health professionals, and middle management. The end products were made by *product teams*, which could call upon partners' staff for data, analysis, and writing and commentary on texts. In addition there was a policy advisory committee, consisting of representatives of public health officials from both RHS regions, which advised on the utility of the regional PHSF for local policy development during the entire process.

2.2.3 Regional elaboration of the conceptual national PHSF model

In the national PHSF model the health situation is interpreted as the outcome of a multi-causal process with various determinants. It places public health in the centre of four groups of determinants: 1) endogen or individual characteristics (genetic, biological), 2) lifestyle, 3) physical and social environment, and 4) health care (including prevention).² This model provides the structure for the information presented in the national PHSF as an adaptation of the model put forward by Lalonde.²⁰

In this study, this conceptual model was applied in the regional setting. Elements of the PHSF model were described with quantitative indicators on the basis of available data, composed at the regional and local level as far as possible, and in so far as relevant for local public health policy. These indicators were based on:

- the European Community Health Indicators (ECHI) shortlist;²¹
- the Netherlands Health Care Inspectorate's performance indicators for the supervision of the performance of RHSs (following the Public Health Act);²²
- the Dutch Health Care Performance Report's performance indicators;²³
- the health indicators of the RHSs' health monitors.

2.3 Results

The development of the regional PHSF in the pilot regions gave two kinds of results. First the characteristics of the developed regional PHSFs in the two RHSs involved and second the characteristics of the empirical PHSF model that could be abstracted from this development. The characteristics of the developed regional PHSFs in both pilot regions are described below, followed by the description of the abstracted empirical PHSF model.

2.3.1 Development of the regional PHSFs in both pilot regions

Publications

From November 2005-June 2007 a regional PHSF was developed for two RHS regions 'Hart voor Brabant' and 'West-Brabant'. These regional PHSFs each consisted of three products: 1) Regional Reports for each RHS region, 2) Municipal Reports with key messages for local health policy for each Local Authority within these regions, and 3) a website called Regional Health Compass (see also Table 2.1).²⁴⁻²⁶ In Table 2.2 each product is described by how its development resulted in 1) insight into health conditions and the significance for policy, 2) knowledge of content and form, and 3) knowledge of project organisation and process.

Regional and local implementation

The regional PHSF was presented in a conference to a broad audience of national and regional health policy makers, researchers, and journalists in November 2006. From November 2006-June 2007, preceding the start of the local public health policy cycle, the Municipal Reports were formally handed over to each Local Authority, often in the presence of the local press. In 31 municipalities, the RHS was asked to present and elucidate the key messages in the city council, mostly as the kick-off for the production of the upcoming local public health memorandum.²⁷

In particular, the Municipal Reports with key messages for local health policy have been given attention in the media. In total, more than 40 articles were published in local and regional news papers, mainly focussing on local health problems and key messages. Moreover, local, regional, and national radio and television broadcast items were based on these publications.²⁷

National implementation

The Dutch Ministry of Public Health, Welfare and Sport as well as the Health Care Inspectorate have stated that the regional PSHF is an important tool for the quality of local public health memoranda.^{28, 29} Consequently, the Ministry financed the development and implementation of a regional PHSF toolkit by the RIVM, to be used by other RHSs.³⁰ To date, nine RHSs have produced their own regional PHSF, while one RHS is still working on one. In both pilot regions, the RHSs are working on the second edition, to be published in spring 2011.

2.3.2 Empirical regional PHSF model

This pilot development of a regional PHSF formed the basis for the composition of the empirical regional PHSF model. This empirical model can be characterised by three aspects: 1) products, 2) content and form, and 3) process and organisation.

Table 2.2. Summary of the main results per product

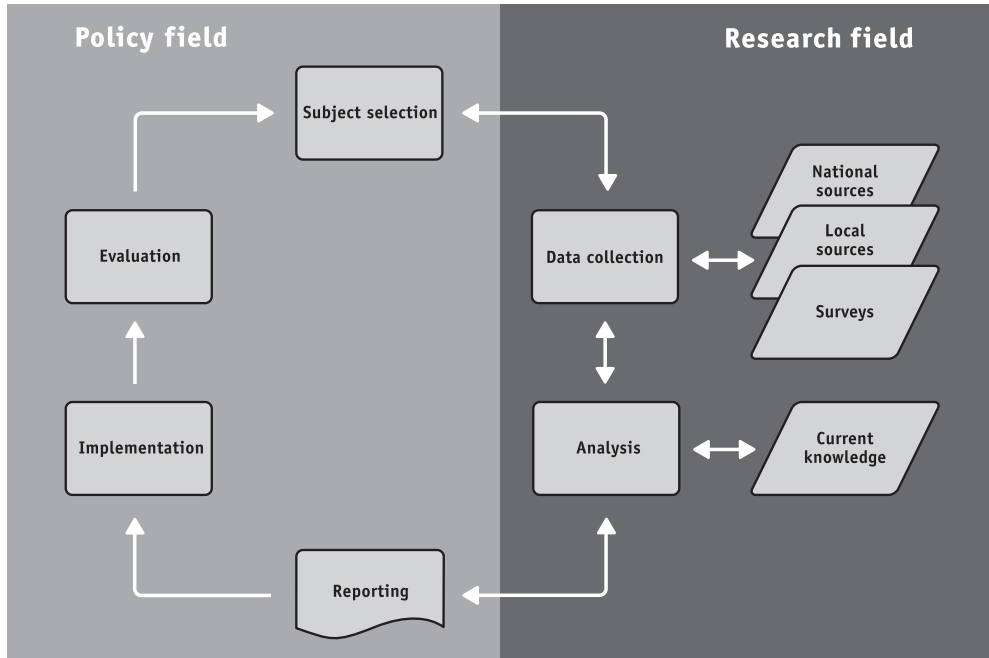
Product/ Result area	Regional Report	Municipal Report	Regional Health Compass
Insight into health and its significance for policy	<ul style="list-style-type: none"> • Description of regional public health • Based on an integral analysis of existing data sources at the local, regional, and national level • Regional key messages gave main conclusions significance for strategic regional and local health policy 	<ul style="list-style-type: none"> • Description of local public health • Based on an integral analysis of existing data sources at the local, regional, and national level • Local key messages gave main conclusions significance for strategic local health policy 	<ul style="list-style-type: none"> • An up-to-date overview per health theme of epidemiology, policy (options), and interventions, each at the national and regional level • Provides Local Authorities with building blocks for translating their strategic policy priorities into a concrete plan of action
Knowledge of content and form	<ul style="list-style-type: none"> • The national PHSF model is useful for a description of health, causes of ill health, and health forecasts • The national PHSF model is less useful for the description of policy, prevention, and care • Regional key messages are placed in a prominent position 	<ul style="list-style-type: none"> • First section with a further specification of the regional key messages according to local figures and findings • Second section with the significance for local public health policy • Appendix with a concise local health profile, comparing local figures with regional and national figures if possible 	<ul style="list-style-type: none"> • Linked to the RIVM's National Health Compass, using the same Content Management System • Linked to the national intervention-database (I-database) • Structured according to the National Health Compass
Knowledge of process and organisation	<ul style="list-style-type: none"> • The Regional Report starts with a detailed description of the report's structure and table of contents, derived from the national PHSF • Regional key messages were established following two routes: 1) starting with the experts' knowledge and experiences; 2) starting with a systematic analysis of existing information and data sources according to the conceptual PHSF model • Policy advisory committee gave input for the outline and the regional key messages 	<ul style="list-style-type: none"> • Development of common formats for the report and the local health profile • Policy advisory committee gave input for the common formats • Completion of the local health profiles by the RHS epidemiologists • Writing and editing of the reports in a number of steps under the responsibility of the RHS advisors for local health policy • Differences in consultation and involvement of experts and Local Authorities between the RHSS 	<ul style="list-style-type: none"> • Developed in co-operation with the Netherlands Institute for Health Promotion (NIGZ, until January 2008) and the RIVM • Municipal public health officials in the RHS's working area decide on the standard format and on the themes to be added or updated • Major regional health (care) institutions involved in updating the interventions • Documents with a regional-independent perspective can be shared with other RHSS

The empirical regional PHSF model consists of different products for different purposes and target groups. Regional Reports for the RHS and other regional organisations and Municipal Reports for each Local Authority, both with key messages, are produced every four years aiming to underpin *strategic* regional and local public health policy. Websites contain up-to-date information, aiming to underpin *tactical* regional and local public health policy by providing building blocks for translating strategic policy priorities into concrete plans of action.

The national PHSF's conceptual model was used for the content of the regional PSHF for the subjects' arrangement as well as the indicators' implementation. The national PHSF also served as a model for the key messages, regional as well as local, and for the style, such as language and text structure. The design of the products was chosen so as to mix the exterior house style of the RHS, presenting them as RHS products, with the interior house style of the RIVM, giving the products a professional and scientific appearance.

Responsibility for project organisation was spread over three levels of the RHS (strategic, tactical, and operational). The involvement of other concerned parties, in this case only municipal public health officials, was formalised at the tactical level by a policy advisory committee.

Figure 2.2 schematically presents a model of the process that was designed for the production of the regional PHSF in the form of a stepwise research cycle. In this process model production steps were divided into two fields. The research field (data collection and analysis) represented the 'exclusive' domain of the researchers. In these steps researchers had specific expertise and other stakeholders only played a part as knowledge suppliers, ensuring the scientific quality, validity, and reliability of the regional PHSF. In the policy field's steps however, the discussion and negotiation between researchers and other stakeholders (such as the RHSs' policy advisors and Local Authorities) played a prominent role. This interaction between researchers and other stakeholders was assumed to be necessary for the policy relevance of the regional PHSFs, increasing the utility of the epidemiological knowledge and facilitating evidence-based local health policy.

Figure 2.2. Process model for the development of a regional PHSF

2.4 Discussion

2.4.1 Comments on the content

The regional PHSF made use of a large volume of data obtained from a variety of regional and national sources, such as questionnaires, registrations, and screening programmes. However, in a number of areas the information supply appeared to be inadequate: comparison between regional and local data was not always possible, information about vulnerable groups was insufficient, and the appropriate indicators were unclear for prevention and care with respect to local public health policy where information is insufficient.²⁴

Due to the absence of regional data, a comparison between the region and the Netherlands as a whole could not be made for a number of important health indicators in the Regional Report, i.e. the incidence and prevalence of diseases on the basis of medical registers, and disease burden. In addition, in the Regional Report the state of prevention description was restricted to the five national priorities, mainly for practical reasons. Though this enhanced the main public health problems and the national priorities being put on the agenda, it also resulted in other, local priorities being excluded. However, those local priorities could be included in the Regional Health Compass.

For the key messages for local health policy, a number of important local health indicators had only limited availability or none at all, because of insufficient numbers or even lack of registrations at the local level. Thereby, only limited comparisons could be made between the health status at the local level and the regional or national health status.

The underlying principle of the Regional Health Compass is packaging research evidence for policy makers, similar to the relatively new approach of policy briefs.³¹ The national information for most themes could come directly from the National Health Compass (www.nationaalkompas.nl), ensuring the information's comparability. However, unambiguous information about municipal policy options and about recommended and/or effective interventions was difficult or impossible to find and the effectiveness of local policy and interventions was frequently unknown. Finally, information on the regional prevention programmes was scarce and dated in the beginning of the pilot study, leading to poor quality of information.

2.4.2 Comments on the process model

In the development of a regional PHSF, numerous policy makers and stakeholders were involved in various ways. This demanded a firm project organisation and an optimal process design. The local-national co-operation between the RHSs and the RIVM had the advantage of various types of expertise that could be called upon for content, design, process, and organisation.

The empirical process model can be seen as a tool to put the theoretical perspectives of the DIKW-hierarchy and of research utilisation into practice by guiding the design of the research process. This process should be designed in such a way that it optimises the interaction between researchers and other stakeholders, as well as the integration of the RHSs' epidemiological information into knowledge useful for local public health policy. The process model primarily offers the RHSs a new framework for thought in order to decide per research step which possibilities exist to bring about interaction with researchers, policy makers, and health professionals. The aims of this interaction are 1) the improvement of the quality of information in the regional PHSF through the contribution and integration of knowledge based on practice, research, and policy (knowledge synthesis), and 2) increasing the chances that epidemiological knowledge is used by working on the potential barriers to interaction.⁶ Moreover, the policy makers and health professionals involved in the process could champion the regional PHSF and its key messages within their own constituencies.⁹

The practical elaboration of the process model will be context-dependent: there will be differences among the RHSs herein, dependent on the relationship with the Local Authorities they serve, the view of their role in policy advice, the choice of relevant

data sources and stakeholders, and the value and significance given to epidemiological evidence. Moreover, there will be differences among RHSs in the ‘negotiation’ with the policy makers and other stakeholders in various stages of the research cycle. In these ‘negotiations’ the highest possible scientific quality should be sought in conjunction with the greatest political acceptance, within the institutional limits of the RHS and the Local Authority. Accordingly, the choices made in the process will have consequences for the content of the regional PHSF and its significance for policy. In this respect, one consideration is the comparability of the regional PHSF with other regional PHSFs as well as with the national.

Finally, the implementation step in the process model is mostly underexposed due to restricted resources. It refers to the efforts researchers make to ensure the uptake of the regional PHSF and its key messages. The presentation and elucidation of the regional PHSF in local kick-offs for the production of upcoming local public health memoranda, used a ‘window of opportunity’ for priority setting in local public health policy, while simultaneously giving common ground from which discussions about the issues could be launched in a policy dialogue.^{9, 32} Implementation efforts were also inserted into media coverage, thus contributing to setting priorities by creating ‘windows of opportunity’, although these windows can close equally fast because media attention tends to move on quickly.³²

2.4.3 Conclusions

A regional PHSF based on the national model could be realised in two Dutch pilot regions, thereby probably meeting most of the practice-based criteria and theories which are relevant to realise a policy impact with PHR activities. The empirical model for a regional PHSF can be characterised by its 1) products, 2) content and design, and 3) underlying process and organisation. This empirical regional PHSF model can be seen as a first step in the direction of a generic model for regional public health reporting, identifying context-independent characteristics with impact on local public health. As next steps, the familiarity with and the use, usefulness, and preconditions for the empirical regional PHSF model were assessed in both pilot regions whereas the actual impact of the regional PHSF in both pilot regions on local health policy was studied in three municipalities.^{27, 33}

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Chapter 3

The development and potential of the Regional Health Compass

Making the evidence-based choice
the easy choice for local public health policy

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Abstract

Municipal health policy should be based on an epidemiological assessment of the local health status (among other things). The purpose is to stimulate evidence-based health policy. However, the implementation of the evidence-based approach in public health care has proved difficult. Current epidemiological reports show where the problems and the likelihood of health benefit lie, but they do not provide sufficient starting points for concrete measures and action plans. For that, information about the effectiveness of interventions and of local policy measures is required. The Regional Health Service Hart voor Brabant wants to make it as easy as possible for its Local Authorities to make the best choice: in other words to 'make the evidence-based choice the easy choice'. This article describes the development of the Regional Health Compass (www.regionaalkompas.nl), a website specifically intended for this purpose. It concludes that it is possible to make a website with information that municipal policy makers find relevant when they are forming a concrete plan of approach to address health problems. Its subsequent implementation in the West-Brabant region shows that it is possible to share much of this website with other Regional Health Services. The discussion focuses on the quality and use of the website, and includes recommendations to improve these characteristics.

3.1 Introduction

Since 1986, Regional Health Services (RHSs, formerly known as Basic Health Services) have been conducting epidemiological research. The insight into the health status of the local population that this research yields is intended to be a basis for municipal health policy. Since the introduction of the Public Health (Preventive Measures) Act (WCPV) in 1990, and its amendment in 2003, Local Authorities have been obliged to draw up a local public health memorandum once every four years, in the light of the national memorandum on prevention. The local public health policy must be based on an epidemiological assessment of the local health status, among other inputs.¹ The goal of this legal obligation is to stimulate evidence-based health policy.

3.1.1 Applying the evidence-based approach in public health care

Evidence-based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions.² Implementing the evidence-based approach in public health care has been encountering difficulties. It has been said that there is a gap between research, policy and practice.³⁻⁶ Jansen points out the different meanings of 'evidence' as one of the reasons for this gap. In addition to '*scientific evidence*', Jansen also discusses '*policy-based evidence*' and '*practice-based evidence*'. Dobrow et al. suggest that in 'the shift from an individual-clinical to a population-policy level, the decision-making context becomes more uncertain, variable and complex'.⁷ They advocate '*context-based, evidence-based decision-making*', or basing decisions on the best evidence, giving full weight to the context. Evidence is defined not only by its (scientific) quality, but also by its relevance for and applicability to a specific context.⁷ Another term for this is 'evidence-informed' policy.⁸ What we know from scientific evidence provides us with sufficient direction and a framework, what we do not yet know is supplied, for the specific context, from other sources of knowledge and insight.^{8,9} In political decision-making, factors other than evidence also play a role: factors such as chance, timing, power and competition.¹⁰⁻¹³

Implementing the evidence-based approach in public health can be fostered by setting agendas for the most important public health issues and proposing the best interventions and measures for them. This requires the context-specific collation of information from science and from other sources of knowledge and insight, reducing the gap between research, policy and practice mentioned above. Evidence-based public health policy is defined in these terms in this article.

3.1.2 Evidence-based policy, from strategy to implementation: the role of regional Public Health Status and Forecasts report and the Regional Health Compass

The regional Public Health Status and Forecasts report (PHSF) contains a Regional Report for the RHS region as well as Municipal Reports for each municipality with 'Key messages for local policy.' In these reports, existing national, regional, and local information is analysed and integrated and its significance for local health policy is described.^{14, 15} These reports indicate where the problems and opportunities of health benefits lie (information for strategic policy and priority-setting), but they do not provide sufficient starting points for concrete measures and action plans (information for implementation policies). This problem is acknowledged by the public health officials of the municipalities in the area covered by the RHS Hart voor Brabant.¹⁶

Information about the effectiveness of interventions and local policy measures is needed when translating strategic policy into policies for implementation. A great deal of information is available, but it is fragmented and sometimes difficult to find, and the quality of the information is not always clear. For example, a Google search on 'smoking policy Netherlands' (using the Dutch words) yields 421,000 hits, 'smoking prevention' 1,510 hits and 'effectiveness (of) smoking prevention' 316 hits.¹⁷ The scientific literature on the effectiveness of interventions and policy measures is often not easy for local policy makers, RHS and similar professionals to access. The use of different sources and publications makes the information varied and inconsistent, and sometimes contradictory. Moreover the information is insufficiently correlated between the national and local levels.^{14, 17, 18}

In light of this, the RHS Hart voor Brabant wants to make best choices as easy as possible for Local Authorities in its area, as they implement *strategic health policy* in their *implementation policies*. Its slogan is 'making the evidence-based choice the easy choice'. To put this into practice, a website has been developed as a third component in the regional PHSF. The website links information about the most important health problems to information relevant for Local Authorities when drawing up a plan of approach for those problems. It contains all the essential information that the municipalities need for decision-making in a convenient format that Local Authorities can easily transfer to their own policy documents. In addition, this website is intended to be largely suitable for sharing with other RHSs, because a great deal of background information, such as information on national interventions, is nation-wide in scope and thus the same for all RHSs.

This article describes the results of developing such a website, the 'Regional Health Compass' (www.regionaalkompas.nl). It centres on the following questions: 1) is it

possible to develop a website with relevant information that helps Local Authority policy makers move from health problems to a concrete plan of approach? 2) Is this website transferable to other regions?

3.2 Development

The primary target group of the Regional Health Compass are the Local Authorities in the region of the RHS Hart voor Brabant. These are mainly local health officials engaged in policy-making. The secondary target group consists of the staff of the RHS Hart voor Brabant, particularly those responsible for client contact with the Local Authorities and those giving policy-making support to Local Authorities. In addition, the Regional Health Compass can be used by local and regional institutions for prevention, health care and welfare, by educational institutions, and other interested parties.

In 2003 the RHS Hart voor Brabant, together with its local health officials, developed the product 'policy maps'.¹⁶ These policy maps can be seen as forerunners of the website. For each issue in public health they provide a concise and dense summary from the perspective of the policy maker of the degree and seriousness of the health problem (at national and regional levels), of possible policy measures and interventions, and of the possibilities of drawing on the expertise of the RHS. In 2005, support from the NIGZ, the Netherlands Institute for Health Promotion, was used for the provision of texts and to identify the current regional supply of interventions via the Qui-databank. At the end of 2005, work started at the Academic Collaborative Centre for Public Health Brabant to develop a regional PHSF.^{14, 19} With the model of the National Institute for Public Health and the Environment's National Public Health Compass (www.nationaalkompas.nl) in mind, the desire grew to place the policy maps on a website. A number of important principles were formulated for this website:

- The perspective of the local health official should be central. This involves aligning with the existing concept of the policy maps, in terms of their goal, content, and process.
- Use existing information, providing it is of good quality.
- Where possible, make 'intelligent links' with national websites to avoid redundant data entry and to prevent inconsistency in the information.
- The website must have a management structure, so that it can be regularly updated and to guarantee the quality of the information. This requires clear procedures, tasks, and responsibilities.
- The website should be transferable to other RHSs, and the web documents must be suitable for sharing.

In July 2006, the work of entering the policy maps into the Content Management system (CMS) used by the National Public Health Compass began. The website, which has the domain name www.regionaalkompas.nl, is located on the central server of the National Institute for Public Health and the Environment. The CMS can be operated by the RHS via internet, with the National Institute for Public Health and the Environment providing technical support. On 9 November 2006, during the presentation of the regional PHSF, the RHS Hart voor Brabant's Regional Health Compass was also launched.²⁰

3.3 Results

The Regional Health Compass is an internet application with a universal structure, containing current national, regional, and local information for local policy-making. For each health issue, the information and knowledge originating from research, policy, and practice is integrated. By using an universal structure, it is possible for the same website to also be implemented by other RHSs, using the same Content Management System (CMS) on the same server, the same document structure and, to a large extent, the same web documents. Through intensive dialogue during the development process with a feedback group of local health officials [Footnote 1], the policy information has been specifically designed for use by Local Authority policy makers as they translate strategic policy priorities into a selection of measures. This means that the Regional Health Compass is more of a concrete handbook for local and other policy makers than is offered by the National Public Health Compass.

3.3.1 Design and working method

The website employs the house style of the RHS Hart voor Brabant, while the system used in the National Public Health Compass is followed to make the information accessible. For example, the topics are arranged in a theme tree comparable to that used in the National Public Health Compass. By using the same CMS, it is possible to share web documents with the National Public Health Compass. This happens now for web documents that provide concise, dense descriptions of the nature and size of the health problem at the national level. The interventions available in the region are presented via a direct link to the Qui-databank. By sharing these national sources of information, the information is kept up to date and consistent.

The content, final editing, and monitoring of releases is the responsibility of the RHS. At each release, the new documents and the changes in existing documents are published on the website. These releases are made two to three times per year.

Table 3.1. Theme tree of topics in the Regional Health Compass

Topic
Health and disease
Diabetes
Cancer
Lung diseases
Sexually Transmitted Diseases
Accidents
Oral hygiene problems
Psychiatric disorders
Anxiety disorders
Depression
Eating disorders
Loneliness
Psycho-social and psychiatric problems in youth
Determinants
Personal characteristics
Overweight
Life-style
Smoking
Alcohol
Drugs
Environment
Child-raising problems
Domestic violence
Fine dust
Population
Members of ethnic minorities
Socioeconomic health inequalities
Chronically ill
Volunteer aid
Care avoiders
Integrated policy

Source: www.regionaalkompas.nl/hart-voor-brabant

3.3.2 Content

In mid-2008, 24 topics were incorporated in the Regional Health Compass, including the key points from the Dutch Prevention Memorandum ‘Choose healthy living:’ smoking, harmful alcohol consumption, overweight, diabetes, and depression (see Table 3.1).²¹ An example of the contents for one topic (smoking) is presented in Table 3.2. For each topic, various web documents together provide a coherent overview of the most important national and regional figures, national policy and the policy options for municipalities, the effective and recommended interventions, and the current regional supply of interventions.¹⁴ The supply includes not only what is offered by the RHS, but also what can be provided by the regional health care institutions: Mental Health Care (GGZ), homecare, and Addiction Care. The Local Authorities can also see immediately which contact person can be consulted for more specific information.

Table 3.2. Example of the contents of the Regional Health Compass

Smoking
Definition, seriousness, and extent
- What are the effects of smoking and how many people in the Netherlands smoke?
- How many people smoke in the region?
What is the policy?
- National policy
- Opportunities for integrated policy
- Local policy
What can be done about it?
- Recommended interventions
- What is already underway in the region?
See also:
- Information and advice on the Tobacco Act
- Stivoro (The Institute for Public Health and Smoking) – for a smoke-free future
Sources

Source: www.regionaalkompas.nl/hart-voor-brabant

3.3.3 Maintenance

Every year the project group [Footnote 2] draws up a plan for new topics, topics to be updated, and the dates of the new releases. The local health officials' feedback group of the RHS advises on this plan and decides on the new topics. To promote a close connection between national and local prevention policies, the national key points are brought up to date at each release. The web documents are also updated as new information becomes available in the various sources (see Table 3.3). This new information is then published in the following release.

3.3.4 First evaluation

An evaluation of the regional PHSF was conducted in May and June of 2007, six months after its introduction.²² This showed that a third of the local health officials in the Hart voor Brabant region had consulted the website at least once. The officials who are familiar with the website also intend to use it, mainly as a general reference work, but also in drawing up the new policy document on public health and in implementing health policy. Two thirds of the respondents from among RHS users had consulted the website at least once. The existence of the Regional Health Compass was scarcely known at all among respondents from regional institutions.²²

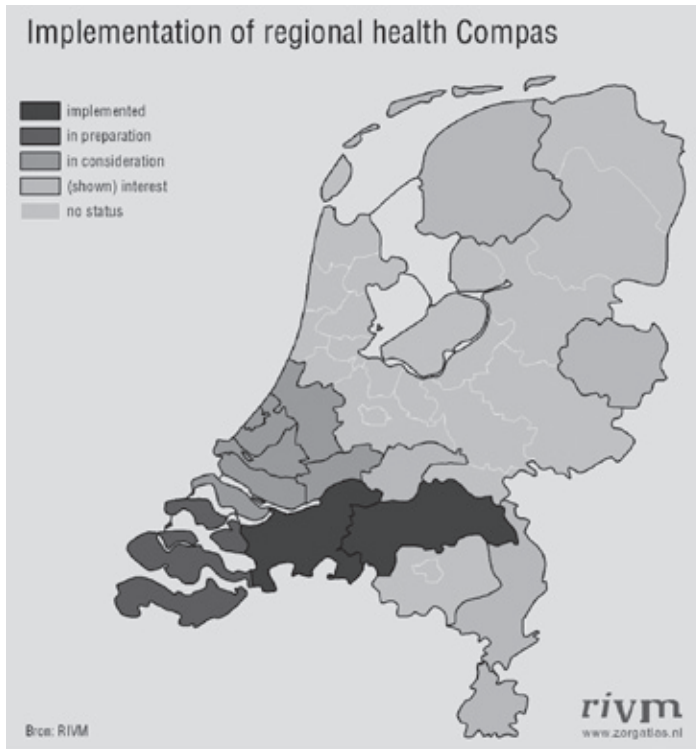
The number of page views for the Regional Health Compass increased from 1,300 per week to more than 2,000 per week in the course of 2007. This figure stabilised in 2008.

Table 3.3. Overview of the documents per topic, by source, author or compiler, and method of updating

Document	Main source	Author or compiler	Updated by
<i>Seriousness and extent of the problem</i>			
National	National Public Health Compass	Epidemiologist	Following the update to the National Public Health Compass, automatically if the document is shared
Regional	The RHS's Health Monitor	Epidemiologist	As new information becomes available
<i>Policy</i>			
National policy	Various sources incl. internet	NIGZ/ RHS specialist	As the project group decides
Local policy (options)	Various sources incl. internet	NIGZ/ RHS specialist	As the project group decides
<i>Interventions</i>			
Effective/recommended	Various sources incl. internet	NIGZ/ RHS specialist	As the project group decides
Regional supply	Qui-databank	NIGZ/ RHS specialist	Automatically, through the link to the Qui-databank. Regional preventive care institutions (including the RHS) are asked to update the Qui-databank for each release
<i>Sources</i>			

3.3.5 Transferability

In July 2007, the RHS West-Brabant launched its own Regional Health Compass (www.regionaalkompas.nl/west-brabant). It too has combined its own house style with the system used in the National Public Health Compass for accessing data. The local health officials in that region chose their own topics. For these topics, the RHS West-Brabant has written its own web documents with respect to the regional health status, based on the West-Brabant Health Monitor. Working with the regional health institutions, they have updated the Qui-databank for these topics. The other documents on these topics could be shared with the National Institute for Public Health and the Environment and the RHS Hart voor Brabant. As a result, the effort required for this RHS was less than for the prototype. Since then, more RHSs have shown an interest in developing their own Regional Health Compass. Figure 3.1 shows the further expansion among RHS in the Netherlands.

Figure 3.1. Stage of implementation of a Regional Health Compass

3.4 Conclusions and evaluation

The Regional Health Compass that was developed demonstrates that it is indeed possible to make a website with information that Local Authority policy makers will find relevant when drawing up a concrete plan of approach for identified health problems. Whether the website actually assists them in developing evidence-based local health policy depends on the quality of the information and its utilisation. In the case of the current Regional Health Compass, there is some room for criticism in this respect (see below). The implementation in the West-Brabant region shows that it is possible to largely share this website with other RHCs. The effort required for the website can then be limited to providing regional epidemiological information and information on the supply of interventions available in the region.

3.4.1 Information quality

There are *gaps in existing knowledge* on several points: with respect to 1) the options for local policy, 2) the effectiveness of interventions, and 3) the regional supply of interventions.

At the national level, for the key points identified in the national Prevention Memorandum, a start has been made to systematically describe the *options for local health policy* on each issue.²³⁻²⁶ But for other topics there is no good overview of the policy options available to Local Authorities.

There is a *lack of knowledge about the effectiveness of many interventions*. What there is, is often incomplete and fragmented. The Centre for Healthy Living is going to develop an objective system to systematically evaluate the effectiveness and quality of interventions and to share the outcomes with organisations in the field and with the Ministry of Health, Welfare and Sport.²⁷⁻²⁹

The *regional supply of interventions* in the Regional Health Compass is generated through a link with the Qui-databank. This makes the interventions that are available from national and regional health institutions visible to the Local Authorities when they are drawing up their policies. As a result, regional health institutions are now more motivated to register the interventions they can offer in the Qui-databank. The RHSs and most regional health institutions now systematically update their own offering, for the topics included in the Regional Health Compass, at each release of the Compass. However, there are many more institutions that provide interventions in the region, such as local welfare services, and more national institutions. The local welfare institutions generally have no knowledge of or access to the Qui-databank, so the interventions they can offer are not represented.

The *collection, selection, and evaluation of information* for the Regional Health Compass is not as well anchored as it is for the National Public Health Compass, especially with respect to information about local policies and effective and promising interventions. This is because the professionals who now write and critique the texts for the Regional Health Compass have only *limited expertise on the various topics*, and *limited access to the knowledge available* from experts, networks, and the literature (scientific literature, professional journals, and grey literature). Finally, there are *no guidelines* for the selection and the evaluation of the information, except in the case of web documents coming from the National Public Health Compass. The guidelines of the National Institute for Public Health and the Environment are applied to the latter. On the other hand, these professionals working in the local situation are in a good position to estimate the policy relevance of the information for Local Authorities. The interaction between national and local knowledge appears to be especially important.

Coherence between the Regional and National Health Compasses is in theory guaranteed by the sharing of web documents. However, in practice the document structure used in the National Public Health Compass does not always lend itself to

incorporation in the Regional Health Compass, so that the potential for document sharing is insufficiently realised. The National Institute for Public Health and the Environment is prepared to reconsider its document structure, to improve the fit between the two websites. From the evaluation of the regional PHSF it also appears that local health officials want to continue to influence the topics that are included in the Regional Health Compass.²² The absence of some locally relevant topics, such as child-rearing difficulties and loneliness, from the National Public Health Compass, has prompted the National Institute for Public Health and the Environment to incorporate these topics in the National Public Health Compass.

3.4.2 The use of the information

The usage of the Regional Health Compass is difficult to ascertain. At present we have data from the *website statistics* and from the evaluation of the regional PHSF.²² The website statistics only show the number of page views, by provider and by period. The name of the provider is not sufficient to show whether the user is a Local Authority, an institution, or some other type of user. Moreover the number of page views tells us nothing about the use and incorporation of the information, in Local Authority policy documents and decisions. However, on looking at the list of providers associated with page views, one is struck by the high number of educational institutions, including Technical Institutes and Universities. From this it appears that the Regional Health Compass is playing at least an indirect role in health promotion.

In the evaluation of the regional PHSF, local health officials were asked about their use of the Regional Health Compass. This showed that those who are familiar with the Regional Health Compass were intending to use the site in their policy documents, but had not yet done so.²² The timing of the evaluation in relation to the policy preparation and implementation may play a role here. The information in the Regional Health Compass is intended mainly to support the translation of strategic policy priorities into activity plans. At the time of the evaluation, most Local Authorities were not yet ready to make strategic policy choices. In the spring of 2007, the RHS started to work actively on the implementation of the regional PHSF.³⁰ During meetings about local health policies, the health officials had hands-on practice with the use of the Regional Health Compass. The responses were positive.

3.4.3 Recommendations

The Regional Health Compass has the potential to support Local Authority policy makers by making the 'evidence-based choice the easy choice.' For this purpose, a number of improvements are recommended.

The *scientific quality of the information* can be improved by having more of the national texts provided by the National Institute for Public Health and the Environment (through its Centre for Public Health Status and Forecasting), using the guidelines and the reference system of that body. There are already specific plans to do this. If the same expert network can be used for this, a ‘consensus’ of national experts about what is the best information will also be obtained. This would benefit not only the information quality, but also the coherence between the regional and the national Compasses and would make the Regional Health Compass a national effort. But this must not be at the expense of relevance to local policies. The guidelines and the reference system should therefore stipulate that the primary target group must continue to be closely involved in the Regional Health Compass and that it must still be possible to add regional and local information.

Finally, *the familiarity with and utilisation of the Regional Health Compass* could be improved. This should be based on an explicit implementation strategy and be conducted through implementation activities, based among other things on what is known about the Local Authorities’ information needs and how they search for that information.³¹ The implementation activities for the regional PHSF have already made an important step in this direction at the local and at the regional level.³⁰ It is mainly the RHS’s staff and other health professionals in the Local Authority network who can ensure that the Regional Health Compass becomes a real success.³¹ They can support the Local Authority by giving their expert opinions as to what the best approach is, based on information from the Regional Health Compass and taking the local context into account.

Footnotes

1. The health officials’ feedback group is an existing consultative forum in which a number of the public health officials in the Hart voor Brabant region participate in the thinking at an early stage. It advises concerning content on developments within the RHS.
2. The Regional Health Compass project group consists of staff of the RHS (epidemiologists, policy consultants, and the project leader for the regional PHSF), the National Institute for Public Health and the Environment (Centre for Public Health Status and Forecasting: RIVM-cVTV), and NIGZ, the Netherlands Institute for Health Promotion.
3. The Regional Health Compass has been developed by the RHS Hart voor Brabant and the RIVM (as part of the regional PHSF) and the NIGZ (as part of the covenant Local Health). The RHS West-Brabant joined this development by the end of 2006. In addition, regional health institutions participate in the Regional Health Compass. The authors thank all those contributing to this development.

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Chapter 4

Towards quality criteria for regional public health reporting

Concept mapping with Dutch experts

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Abstract

Background. In the Netherlands, municipal health assessments are carried out by 28 Regional Health Services, serving 418 municipalities. In the absence of guidelines, regional public health reports were developed in two pilot regions on the basis of the model and experience of national health reporting. Though they were well received and positively evaluated, it was not clear which specific characteristics determined ‘good public health reporting’. Therefore, this study was set up to develop a theoretical framework for the quality of regional public health reporting in the Netherlands.

Methods. Using concept mapping as a standardised tool for conceptualisation, 35 relevant reporting experts formulated short statements in two different brainstorming sessions, describing specific quality criteria of regional public health reports. After the removal of duplicates, the list was supplemented with international criteria, and the statements were sent to each participant for rating and sorting. The results were processed statistically and represented graphically. The output was discussed and interpreted, leading to the final concept map.

Results. The final concept map consisted of 97 criteria, grouped into 13 clusters, and plotted in two dimensions: a ‘product’ dimension, ranging from ‘production’ to ‘content’, and a ‘context’ dimension, ranging from ‘science’ to ‘policy’. The three most important clusters were 1) ‘solution orientation’, 2) ‘policy relevance’, and 3) ‘policy impact’.

Conclusion. This study provided a theoretical framework for the quality of regional public health reporting, indicating relevant domains and criteria. Further work should translate domains and criteria into operational indicators for evaluating regional public health reports.

4.1 Introduction

As in the European Union, regions and Local Authorities in the Netherlands are becoming an increasingly important and administrative level in public health policy-making. Since 2003, the Dutch Public Health (Preventive Measures) Act (WPG) has obliged Local Authorities to assess municipal public health on the basis of epidemiological analysis, once every four years.^{1,2} These assessments are carried out by 28 Regional Health Services (RHSs), serving 418 municipalities and dedicated to the monitoring, protection, and promotion of public health.³

Differences in these assessments between RHSs, for example in the selection of topics reported, methodological issues, and reporting format, make it difficult to compare the public health status of a particular municipality with the national public health status or that of other municipalities. Moreover, the RHSs face the problem of making their epidemiological knowledge more useful for both regional and local public health policy.⁴ From this perspective, two main issues arise. First, little is known about the extent to which epidemiological information is used in local and regional health policy-making, and which factors, such as the characteristics of public health reports, may influence the actual use of such information.⁵ Second, there is a lack of a systematic overview of the different RHSs' public health reports and the way in which they are produced, so that a comparison on relevant characteristics cannot be made.

In the absence of scientific guidance on how to make RHS public health reporting more useful for local public health policy-making, regional public health reports for the Local Authorities were developed in two pilot RHS regions. These were based on the model and on experience of the four-yearly national Public Health Status and Forecasts reports (PHSFs) of the Dutch National Institute for Public Health and the Environment (RIVM).⁶⁻¹³ These PHSFs have been successful in contributing to evidence-based public health policy-making in the Netherlands. They provide a practical elaboration of relevant theoretical perspectives for evidence-based policy-making and are acknowledged as one of the best practice-based models in Europe for national public health reporting.^{4, 9, 14}

This pilot study concluded that the empirical model for a regional PHSF could be characterised by: 1) its products, 2) its content and design, and 3) its underlying process and organisation.⁴ Furthermore, the regional PHSFs had become well known and widely used.¹⁵ However, the question arose of what specific characteristics of this empirical regional PHSF are factors in 'good public health reporting', so that they could be identified as quality criteria.

The issue of quality criteria for public health reports that have an impact on public health policy is also of interest internationally.¹⁶⁻²² Both in Europe and the United States, criteria have been developed for quality of public health reporting, mainly based on expert opinion and discussion.^{14, 21}

These international criteria, together with the characteristics of the empirical regional PHSF model referred to earlier, could be regarded as a practice base for the quality assessment of regional public health reporting in the Netherlands. However, a theoretical framework to serve as a sound basis for a quality assessment instrument was still lacking. Therefore, this study was set up to develop a theoretical framework for the quality of regional public health reporting in the Netherlands, using the method of concept mapping.²³

4.2 Methods

4.2.1 Concept mapping

Concept mapping is a standardised tool for developing a conceptual framework of a complex topic, for use as a guide to evaluation or planning. In concept mapping, thoughts and ideas are represented in the form of a picture or map, the content of which is entirely determined by a group of experts.²³ It combines an inductive group process with several multivariate deductive statistical analyses, and concludes with a group interpretation of the conceptual map that finally results.²⁴ Such a final concept map shows “a pictorial representation of the group’s thinking which displays all of the ideas of the group relative to the topic at hand, shows how these ideas are related to each other and, optionally, shows which ideas are more relevant, important, or appropriate”.²³ Concept mapping has been used in a variety of subjects, for example education, children and youth, health promotion, (mental) health and care, and the arts, as well as for a variety of purposes, for example planning, evaluation, survey design, theory building, translating research into practice, curriculum development, and (quality) management.²⁵⁻³³ In this study, the method described by Trochim was used, involving six steps: preparation, generation of statements, structuring of statements, representation of statements in the form of a concept map, interpretation, and utilisation.²³

4.2.2 Participants

Conceptualisation works best when the process involves a variety of people in some way engaged in and/or responsible for the topic at hand. Broad and heterogeneous participation helps to ensure that a wide variety of viewpoints are considered, and encourages a broader range of people to adopt the resulting conceptual framework. However, it is not necessary that all participants take part in every step of the process.

Although there is no strict limit to the number of people who can be involved in concept mapping, between ten and twenty people seems to be a workable number.²³ For the development of a theoretical framework for quality criteria for regional public health reporting, the following relevant groups were identified: the *producers* (staff of the RHSs: epidemiologists, policy advisors, and management), the *intended users* (municipal officials), and *national stakeholders* (such as the Ministry and the Inspectorate). In order to obtain heterogeneity of experiences and opinions, an effort was made to include producers and intended users from different regions in the Netherlands. Purposive sampling was used, leading to a list of 63 participants, of whom 35 (55.6%) eventually took part at some stage of the study (see Table 4.1). Reasons for non-participation were mainly of a practical nature, such as diary problems or illness.

Table 4.1. Participants in the concept mapping process

	Invited		Response		Total
	N	Brainstorming and structuring N	Brainstorming or structuring N	N	
Producers (RHSs*)					
Epidemiologists	17	8	3	11	64.7
Policy advisors	7	3	1	4	57.1
Management	10	2	3	5	50.0
Intended users	10	5	0	5	50.0
National stakeholders	19	9	1	10	52.6
Total	63	27	8	35	55.6

*Regional Health Service

4.2.3 Generation of statements

Statements were generated in two brainstorming sessions with different participants. For the second session alone, participants received information beforehand on the evaluation of the empirical model for a regional PHSF and on the practice-based criteria found in the international literature.^{14, 21} The aim and background of the sessions, the usual rules for brainstorming, and the focus of the concept mapping process, were introduced similarly in both sessions. The following working definition of a regional public health report was presented: 'A report aimed at creating knowledge and awareness of important regional public health problems and their determinants, among policy makers and others involved in organisations that can influence the health of the population'. This is a slight modification of the definition by Måns Rosén.³⁴ In particular, the phrase 'a comprehensive system of different

products and measures' was replaced by 'a report', to avoid steering the participants too much towards possible specific characteristics. The participants were then asked to formulate short statements or sentences that described a specific characteristic of a 'good' regional public health report that supports evidence-based local public health policy. During the sessions, statements were numbered uniquely, entered into a computer, and displayed on a large screen as they were generated, so that all the participants could see the set of statements as they evolved. Moreover, audio recordings of the sessions were made to enable confirmation of the statements and editing. At the end of the sessions, the further steps in the concept mapping process were explained to the participants, who were instructed on the structuring task for which they would be approached individually.

In the first session, 18 participants produced a list of 61 statements, and in the second session 16 participants listed 51 statements. We removed 25 more-or-less duplicate statements, and supplemented the list with ten criteria from international literature that were missing from the experts' list, but, in our judgement, were relevant for a 'good' regional public health report in the Netherlands.^{14, 21} The 97 statements in the resulting final list were then numbered randomly from 1 to 97.

4.2.4 Structuring of statements

Each of the 97 statements with its unique number was printed on a separate index card, and the complete set of cards was sent to each participant for individual structuring. This structuring involved two distinct tasks: rating and sorting.²³

For the rating task, each participant was asked to rate each statement on a 5-point Likert-type response scale by dividing the index cards into five equal piles of increasing importance for a good regional public health report.

For the sorting task, each participant was asked to group the index cards with the statements into piles based on their meaning or their content 'in a way that makes sense to you'. It was stressed that each participant could choose his or her own criterion for this division, which should be done as an associative process without too much thinking.

4.2.5 Analyses

The individual rating and sorting data of 29 participants was entered into the computer using the Ariadne software for concept mapping.³⁵ Ariadne computed a binary symmetric similarity matrix per respondent (the similarity between any two statements in the same pile being set at 1). The program then made an aggregated

(group) matrix by counting the individual matrices. A high value in this matrix indicates that many of the participants put that pair of statements together in a pile and implies that the statements are conceptually similar in some way.²³ This aggregated similarity matrix was then used as the input for a (nonmetric) principal component analysis (PCA), a technique for translating the distances (or in this case the correlations) between statements into coordinates in a multidimensional space. The first two dimensions of the PCA solution for each statement were plotted in a point map.

Ariadne further classified the statements by completing a cluster analysis with the coordinates of the statements, grouping statements that were similar in some sense into clusters. A working group of five participants chose the final number of clusters, by examining which statements were grouped together each time the cluster solution in Ariadne was moved from one to the next lower (e.g. from 18 to 17 clusters), deciding whether that grouping still made sense for the statements in the conceptualisation. This was done using a cluster tree as suggested by Trochim.²³ Based on the examination of this cluster tree, the working group chose the 13-cluster solution as the lowest in which all clusters still made sense conceptually, and they formulated the labels that would best cover the content of the final clusters.

Subsequently, the researchers refined the cluster labels, labelled the axes showing opposing issues, and identified and labelled 'regions' of clusters. The average rating for each statement and for each cluster was calculated using the information from the rating task. The results of these calculations were represented in the concept map as differences in height. The width of the line defining the 'cluster box' indicated the relative importance that participants attached to each cluster.³⁵

4.3 Results

All 97 statements and their mean rankings are presented in Table 4.2, grouped by the 13 clusters determined in the course of the analysis. The mean rankings varied from 1.62 to 4.79. The three most important statements were: 1) 'Gives administrators guidance for setting priorities in the field of public health', 2) 'Gives insight into the present state of health in the municipality', and 3) 'Contains knowledge that is useful for policy-making' (see Figure 4.1 for the top ten of statements). These three statements originated in three different clusters.

Table 4.2. Statements, grouped by region and cluster, and sorted by mean ranking

Region	Cluster	No	Statement	Mean ranking
Marketing				
	Marketing			
		74	Is presented in a manner that is accessible for the target group	3.62
		68	Contains a good summary	3.41
		21	Is easy for the reader to use	3.28
		2	Provides a clear objective that specifies both what is covered and what is not	3.00
		81	Is accompanied by a good communication plan	2.90
		7	Also has a website with background and up-to-date information	2.82
		55	Is published independently	2.69
		32	Is efficiently organised to enable fast response to situations that arise	2.64
		83	Is a high-quality publication	2.62
		88	Is sufficiently specific for the reader, both geographically and in terms of settings	2.62
		69	Is continuously propagated actively	2.55
		91	Is accessible both digitally and in hard copy form	2.54
		52	Has a good balance between figures / tables and text	2.45
		73	Is aimed at a clearly defined target group	2.41
		65	Is a convenient reference work for Local Authorities	2.38
		86	Is of limited size	2.17
		84	Has different products for different knowledge requirements	2.10
		59	Has different products for different target groups	2.07
		61	Requires a great deal of effort and resources	1.72
Process				
	Scientific foundation			
		87	Uses unambiguous, standardised indicators that have been measured and interpreted in the same way for several years	3.57
		76	Is based on scientific consensus, so that there is agreement on the data that are presented	2.90
		45	Is based on a conceptual model or framework	2.83
		20	Contains numerical information that has been checked by experts	2.64
		25	Provides a scientific foundation through the inclusion of source references	2.46
	Reliability			
		24	Is reliable	4.43
		12	In a smart way, makes information accessible that is already known nationally	2.45

Region	Cluster	No	Statement	Mean ranking
		42	Is a cyclic synthesis of knowledge	2.45
		8	Has satisfactory documentation of the procedure that has been followed and the methods used to prepare the report	1.93
	Broad utility			
		43	Is a-political	2.72
		16	Serves as a good source of information for writing project and research proposals	1.86
		78	Provides input for the National public health report	1.86
	Interaction			
		13	From the very beginning, has been realised in consultation with the Local Authorities	3.59
		72	Was produced in interaction with relevant people	3.34
		40	Is based on properly functioning cycles within the Regional Health Service relating to health promotion, epidemiology, and policy	2.97
		14	Evolves through evaluation of the report with the Local Authority	2.68
		63	Is also intended for local care providers	2.64
		23	Does not belong to the Regional Health Service, but is a co-production with Local Authorities, each retaining its own responsibility	2.57
		33	Is aimed not only at Local Authorities	2.41
		75	Can be used for other local reports	2.11
	Position policy cycle			
		80	Linked to the local government cycle, is published prior to the local health memorandum	4.10
		85	Helps the RHS to talk with Local Authorities about public health	3.55
		37	Forms a cyclic part of a transparent and sustainable policy process	3.07
		48	Linked to the local government cycle, appears before the municipal elections	2.64
		66	Can be used by administrators as social justification towards the citizens and the council	2.59
		49	Positions itself clearly as distinct from the policy document	2.55
	Giving significance			
	Data integration			
		11	Contains current information and recent data	4.00
		97	Integrates data with existing knowledge	3.61
		53	Makes use of reference data, both geographical (local – regional - national) and temporal	3.48
		51	Integrates data from different sources	3.41

Region	Cluster	No	Statement	Mean ranking
		79	Makes use of summary indicators, such as life expectancy, disease burden, and avoidable death	2.76
		50	Provides the possibility of various sorts of comparisons	2.38
		56	Contains information on all domains of the conceptual model	2.34
		94	Contains indicators that can have different cycles	1.62
		Interpretation		
		35	Based on present lifestyle, health determinants, and demographic data, gives insight into the health problems and demand for care that are to be expected	4.17
		4	Provides an interpretation of the data	4.07
		17	Takes account of health inequalities between target groups	3.76
		15	Gives information on trends	3.62
		18	Looks back, and also forward	3.38
		38	Where possible, states cause and effect	3.38
		46	Also looks beyond the perspective of the local municipality or region through geographical benchmarking (regional, national, and/or international)	3.25
		71	Contains the Health Care Inspectorate's indicators for public health care	3.21
		10	Also devotes attention to quality of life, limitations, functioning, etc.	3.14
		26	Analyses care as a determinant of public health	2.90
		34	Contains information on effectiveness and costs of interventions	2.66
		27	Specifies gaps in knowledge	2.28
		31	Gives insight into health care expenditure	1.93
		Problem analysis		
		58	Gives insight into the present state of health in the municipality	4.66
		36	Gives an integral picture at municipal level, covering the total population of the municipality and all topics	3.52
		44	Assigns weight to the problems	3.41
		30	Also contains indicators for the urgency of problems	3.21
		28	Contains information on the spearheads of Dutch Government policy	3.00
		29	Also contains analyses for the Social Support Act	2.93
		3	Summarises present policy and interventions	2.76
		77	Quantifies the potential health benefits	2.59
		67	Indicates how much health benefit has already been achieved in practice	2.45
		Undefined		
		62	In the reports for each municipality, shows the geographic differences clearly and accurately	2.97

Region	Cluster	No	Statement	Mean ranking
		64	Does not repeat regionally what is already being done well nationally	2.10
Having significance				
Solution orientation				
		9	Shows whether and how health problems can be influenced	4.14
		89	Points out how health benefits can be obtained	4.10
		92	Places the emphasis on aspects of public health that can be influenced locally or regionally	4.03
		47	Links health problems to their possible solutions	3.52
		41	Discusses specific local problems, even when no data are available	3.28
Policy relevance				
		57	Contains knowledge that is useful for policy-making	4.48
		70	Contains recommendations that take up the analyses of local policy relevant for public health	4.14
		6	Fits in with the current social, political, and administrative situation	3.83
		60	Contains an analysis of local policy that is relevant to public health	3.55
		93	Fits in with current policy developments including new legislation	3.52
		19	Always links data and information to local policy and local initiatives / interventions	3.32
		96	Delivers an important contribution to choices relating to the assignment of people, resources, and finance	3.31
		95	Puts policy relevance above scientific relevance	3.28
Policy impact				
		1	Gives administrators guidance for setting priorities in the field of public health	4.79
		54	Devotes attention to good practical applicability within the municipalities	4.10
		39	Supports an integral health policy by providing recommendations for municipal policy and not only public health policy	3.89
		90	Influences policy by being innovative and placing new policy possibilities on the agenda	3.69
		82	Follows policy by taking account of the requirements of policy makers	3.21
		5	Leads to real policy statements or actual policy	3.17
		22	Gives advice to management on the direction to follow for regional collaboration in relation to a health problem	2.83

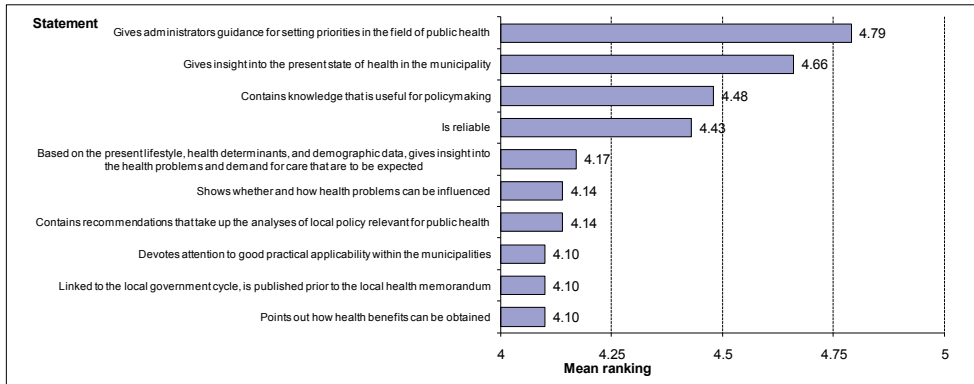
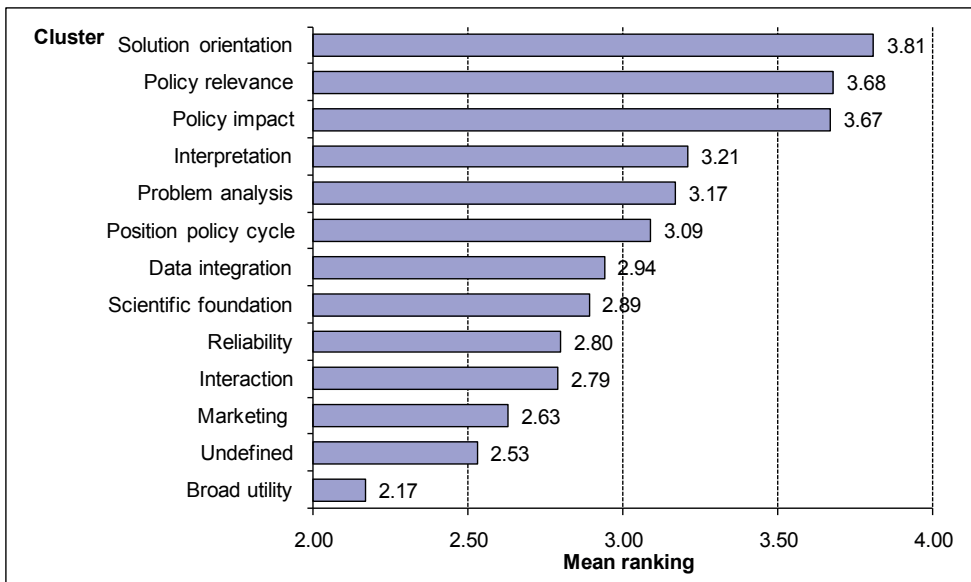
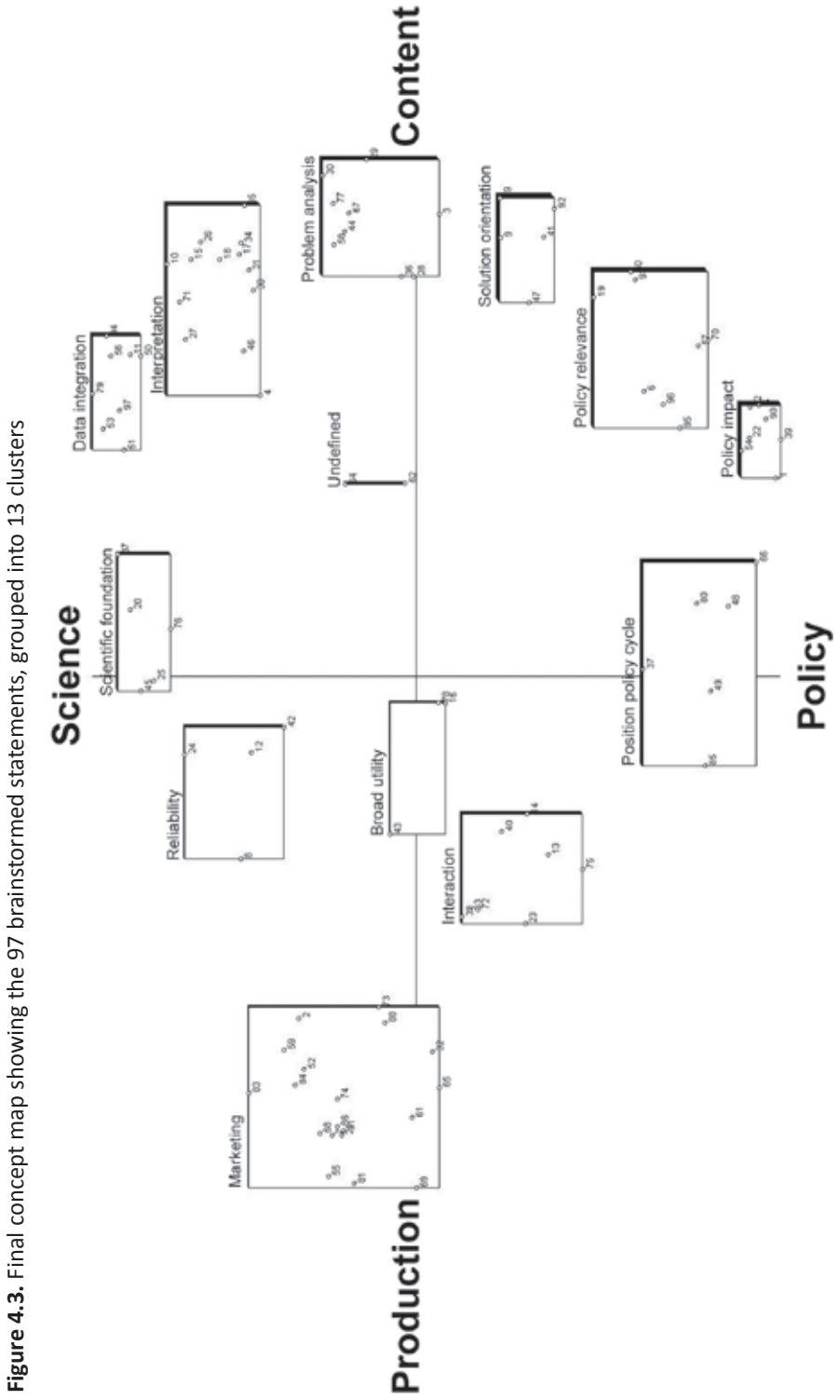
Figure 4.1. Top ten statements and their mean ranking

Figure 4.2 shows the final 13 clusters with their mean rankings, varying from 2.17 to 3.81. The three most important clusters were: 1) 'solution orientation', 2) 'policy relevance', and 3) 'policy impact'. The same top three were identified by each category of participants, although the sequence differed. The least important clusters were 'marketing', 'undefined', and 'broad utility' (see Figure 4.2). Except for 'broad utility', these bottom three differed between the categories of participants. Other clusters that were included were 'interaction' (RHS epidemiologists), 'scientific foundation' (municipal officials and RHS managers), and 'reliability' (municipal officials).

Figure 4.2. Clusters and their mean ranking



The cluster map, presented in Figure 4.3, shows the relations between the clusters in a two-dimensional plot, based on the first two dimensions of the PCA solution for each statement. Based on the clusters' labels and their positions on the map, we labelled the horizontal dimension as 'product', ranging from 'production' to 'content', and the vertical dimension as 'context', ranging from 'science' to 'policy'. The 'product' and 'context' dimensions together accounted for 51% of the total variance.

Subsequently, we labelled three regions: 'process' (the clusters 'scientific foundation', 'reliability', 'broad utility', 'interaction', and 'position policy cycle', mainly situated on the 'production' side), 'giving significance' (the clusters 'data integration', 'interpretation', 'problem analysis', and 'undefined', situated in the 'science-content' quadrant), and 'having significance' (the clusters 'solution orientation', 'policy relevance', and 'policy impact', situated in the 'policy-content' quadrant).

On the 'product' dimension, the number of statements was highest on the 'content' side ($n=59$), while on the 'context' dimension this number was highest on the 'science' side ($n=57$). A third of the statements were situated in the 'science-content' quadrant ($n=34$).

In general, the clusters on the 'content' side of the plot were ranked higher than the clusters on the 'production' side, since the highest ranked clusters were found to be mainly situated in the 'policy-content' quadrant ('having significance').

4.4 Discussion

4.4.1 Methodological considerations

The validity of the theoretical framework depends mainly on the completeness of the relevant criteria. Through purposive sampling, we ensured a wide variety of viewpoints. Reasons for non-participation were mainly of a practical nature, decreasing the probability of selective non-response. To inspire participants of the second brainstorming session to come up with new statements, they received information on practice-based criteria beforehand. Nevertheless, 25 of the 51 statements in this session had already been mentioned in the first session, which implies saturation of statements made by the participants. Finally, after both brainstorming sessions, we added ten international criteria, missing but judged to be relevant. In our opinion, these considerations led to the generation of a fairly complete set of statements.

Another aspect of the validity of the theoretical framework is the division into 13 clusters, based on the sorting task of the participants. Unfortunately, six participants in the brainstorming sessions (18.2%) did not perform this sorting task. Non-

participation was highest among the RHS managers, so the division into clusters should be interpreted with some caution.

This also holds true for the ranking: non-participation for this task was also highest among the RHS managers. However, the top three clusters were quite similar between the different categories of participants, suggesting a high level of agreement between participants on the most important clusters.

The concept map was constructed as a theoretical framework for assessing the quality of regional public health reporting in the Netherlands. The question arises as to whether the theoretical framework can be generalised for other countries and/or for national public health reporting. Most criteria seem to be also applicable in other settings, though some are very specific, for example, the criterion ‘also contains analyses for the Social Support Act’. Hence, a new concept map should be constructed for international purposes, with heterogeneous international participation.

4.4.2 Other studies

In comparison with the empirical regional PHSF model as mentioned in the introduction, the concept map covers all three major characteristics (products, content and design, and process and organisation) and includes even more domains (and criteria), such as ‘scientific foundation’ and ‘policy impact’.⁴ Moreover, the concept map serves as a theoretical framework for assessing the quality of regional public health reporting, whereas the empirical PHSF model serves more as an example of the practical elaboration of many, but not all, criteria. Indeed, building on this empirical model, a toolkit to support other RHSs in public health reporting has already been developed and implemented.³⁶⁻³⁸

All relevant international practice-based criteria of the EVA-PHR project and the RAND Corporation are represented in the concept map, since ten missing criteria were added before the structuring task. Conversely, not all of the concept map’s criteria are covered by the international criteria, in particular, none in the cluster ‘position policy cycle’. The EVA-PHR criteria mainly cover the ‘science-content’ quadrant of the concept map, while the RAND criteria mainly cover the ‘science’ context, for both ‘production’ and ‘content’.^{14, 21}

The identification of the cluster ‘interaction’ fits well into the theoretical perspective of research utilisation, where interaction is seen as an important condition for implementing research findings into policy.^{5, 39-41} In this perspective, it is worrying that ‘interaction’ was ranked rather low, especially by the RHS epidemiologists. Likewise, only two of the international criteria, both EVA-PHR criteria, relate to this ‘interaction’ cluster.

In our study, the number of statements and the mean cluster ranking showed that the ‘content’ side of the ‘product’ dimension generally received more attention than the ‘production’ side. However, this Dutch concept map is already showing that more attention was given to ‘production’, especially ‘interaction’, than in the case of the international criteria. This may be due to the success of the empirical regional PHSF model, which is acknowledged nationally as a standard for regional public health reporting.⁴²⁻⁴⁴

4.4.3 Utilisation

The domains and criteria in the concept map can already be used by the producers of regional public health reports as a checklist for improving the quality of their reports. For greater effectiveness, ‘interaction’ should be given a more prominent role in this. For ‘interaction’ purposes, the empirical regional PHSF model provides a tool for the design of the research process.⁴ Consequently, the Local Authorities would benefit from more usable and better tailored regional public health reports, ultimately leading to greater policy impact.

We intend to undertake the sixth and final step of the concept mapping procedure in a follow-up study to translate the criteria into measurable indicators, by having Dutch experts formulate standards with corresponding questions. For example, the criterion ‘devotes attention to good practical applicability within the municipalities’ could be made measurable by asking the RHSs to score the question ‘How well were the recommendations for Local Authorities formulated in the report?’, using a 5-point Likert-type response scale, expressed in terms of five practices ranging from worst to best practice. The resulting instrument could then be used to assess the quality of regional public health reporting (relevant for producers and users), to make comparisons in the quality of public health reporting between RHSs (relevant for the Inspectorate and the Ministry), and to relate the quality indicators to the actual use of the regional health reports in making local public health policy - the ultimate ‘proof of the pudding’ of the usefulness of the developed theoretical framework and its quality criteria.

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Part II

IMPROVING THE EMPIRICAL MODEL FOR
REGIONAL PUBLIC HEALTH REPORTING



Chapter 5

Evaluation of the regional Public Health Status and Forecasts report (PHSF) in two Dutch regions

Familiarity with, use, usefulness, and preconditions

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Abstract

A regional Public Health Status and Forecasts report (PHSF) has been developed in the working areas of the Regional Health Services (RHS) 'Hart voor Brabant' and 'West-Brabant'. A regional PHSF consists of three products: a Regional Report for the RHS region, a Municipal Report with key messages for local health policy per Local Authority, and the website Regional Health Compass (www.regionaalkompas.nl). The regional PHSF was evaluated by the Academic Collaborative Centre for Public Health Brabant among those involved and (intended) users by means of questionnaires, (group) interviews, and the analysis of documents. This article describes the results of this evaluation.

The familiarity with and the use of the regional PHSF proved to be substantial. The usefulness of the regional PHSF, in terms of content, design, relevance, consistency between the products, and added value relative to existing information, was, in general, given a positive evaluation. Particularly significantly, preconditions proved to be: good timing in relation to the local policy cycle, good structural communication about progress, planning, and decision-making, and the early involvement of the Local Authorities.

The success factors and recommendations resulting from this evaluation study are being used for the further development of the next regional PHSF in both regions, as well as for the development of a generic model for a regional PHSF.

5.1 Introduction

A start was made in 2005 in the RHS regions Hart voor Brabant (29 Local Authorities, and a population then of 1,009,000) and West-Brabant (18 Local Authorities, and a population then of 676,000) with the development and implementation of a regional PHSF. Just as in the case of the National PHSF, the most important purpose of the regional PHSF is the acquisition of an integral view of the present health status of the population and the possibilities for the efficient achievement of health benefits, as support for medium- and long-term policy. The regional PHSF is different from the present reports of both RHSs, particularly in the integral nature of the report (in terms of target groups and subjects, and in being based on existing data sources at local, regional, and national level) and in giving significance to the most important findings in the form of key messages for policy.¹⁻⁵ The anticipated added value is then to be found primarily in that the regional PHSF, prior to publication of the Local Authority public health memorandum, gives the policy makers a clear and integral view of priorities for Local Authority policy. This means that the policy makers do not have to delve through the various research reports that have appeared over the preceding years and that moreover relate to one specific subject or target group on the basis of a single investigation (such as the report on the youth monitor or the adults questionnaire).

The regional PHSF consists of three products: a Regional Report for the RHS region, a Municipal Report with key messages for local health policy per Local Authority, and the website Regional Health Compass (www.regionaalkompas.nl).^{1, 2, 4-6} In the Academic Collaborative Centre for Public Health Brabant, the development of the regional PHSF was evaluated on content, design, organisation, and process. The purpose of this evaluation is to gain insight into 1) the familiarity with and the use of the regional PHSF, 2) the usefulness of the regional PHSF for local and regional health policy, and 3) the preconditions for the creation of a regional PHSF.

This insight can be used for subsequent regional PHSFs, both in the two pilot regions and in other RHS regions that want to initiate a regional PHSF. The following questions are central to this article:

1. What is the familiarity with and the use of the regional PHSF in local, regional, and national policy? Here we are concerned with the familiarity with, the use of, and the publicity surrounding the three products.
2. What is the usefulness of the regional PHSF for local and regional health policy? Here we are concerned with the content, design, and relevance of the three products, their relationship with each other, and their added value in relation to existing information.

3. What are the preconditions for the creation of a regional PHSF? Here we are concerned with planning and communication.

5.2 Methods

Two target groups were approached for the evaluation: those involved and the (intended) users. *Those involved* in the creation of the regional PHSF are staff of the RHS and the National Institute for Public Health and the Environment (RIVM) who are directly involved in the creation of the regional PHSF.

The *users* of the regional PHSF are 1) officials, aldermen, and council committee members of the Local Authorities in the RHS regions Hart voor Brabant and West-Brabant (further referred to as Local Authorities), 2) the RHS staff not directly involved in the creation of the regional PHSF (further referred to as internal users), and 3) staff of regional, provincial, and national organisations.

The *familiarity with, the use of, and the usefulness of* the regional PHSF for local and regional health policy among the target groups (both those involved and the users) were investigated. The *preconditions* for the creation of a regional PHSF were investigated only among those involved.

The data was collected in the period June to September 2007. To collect the data, 130 digital questionnaires were distributed. Five group interviews and seventeen individual interviews were planned, and a document analysis was carried out.

The *digital questionnaires* were sent to all those involved, and to a selection of the internal users. This selection was carried out on the basis of the level of contact between the staff and the Local Authorities. Digital questionnaires were also sent to the (intended) external users: the Local Authority public health officials, and the management and staff of the regional organisations for Mental Health Care (GGZ), homecare, Addiction Care (Novadic-Kentron), care administration offices, care networks, the PON (Institute for advice, research, and development in Noord-Brabant), and the Youth Expertise Centre K2.

For the *interviews* with those involved (officials, aldermen, and councillors), we sought maximum diversity among the respondents, that is, people from both regions (Hart voor Brabant and West-Brabant), from large and small Local Authorities, with diverse involvement in the creation of the regional PHSF, and where a variety of opinions about the regional PHSF were to be expected. For the interviews with the province Noord-Brabant (Care department) and national organisations (Association

of Netherlands Municipalities - VNG, Association of Netherlands RSHs - GGD Nederland, and the Health Care Inspectorate - IGZ) we approached key figures. The Ministry of Health, Welfare and Sport was not interviewed because the reaction of the Ministry had already been published.⁷

The interviews were carried out by various members of the project group on the basis of semi-structured questionnaires following a fixed protocol. They made written reports of the interviews. These reports were then worked into a final report by one of the researchers (WJ).⁸ This researcher did not participate in the project group during the creation of the regional PHSF. Recordings were made of all the interviews, and these could be consulted in any cases of lack of clarity.

The findings from the questionnaires and the interviews were supplemented with the findings from the document analysis of the project group documents, especially in order to compare these research findings with the established plans, the agreements, and the actual state of affairs.

5.3 Results

5.3.1 Response

Response to the digital questionnaire

The response to the digital questionnaire was highest among those involved (71%, n=30). Half of those involved were researchers; the others were primarily policy advisors (27%) or health promotion (policy) officials (13%). Of the officials, half responded to the digital questionnaire (53%, n=21). The response from officials was higher in Hart voor Brabant (56%) than in West-Brabant (46%). Of the officials who responded, 43% had worked for their present Local Authority for more than three years. The response among the internal users and the regional organisations was relatively low (resp. 41%, n=12 and 42%, n=8). The response from the regional organisations relates to the number of organisations, irrespective of the number of individuals who responded per organisation.

Response to the interviews

Of the five planned group interviews, four were actually carried out, with a total of seventeen participants. The planned group interview with the policy advisory committee did not turn out to be feasible because the majority of the participating officials were now working elsewhere.

Of the seventeen planned individual interviews, fourteen were carried out according to plan, including three with officials on the policy advisory committee. It was not

possible to make an interview appointment with the province, and two interviews with councillors from West-Brabant could not be planned in time. As a result, councillors from only the Hart voor Brabant region were interviewed.

5.3.2 Familiarity with and use of the regional PHSF

Familiarity with the regional PHSF

Almost all the (responding) officials had read the Regional Report (95%) and had read (partially) the Municipal Reports with key Messages for local health policy (91%). That was also true for the councillors and aldermen who were interviewed. Three quarters of the (responding) internal users had read the Regional Report and had read (partially) the Municipal Reports with key messages for local health policy. The Regional Health Compass (the website) was less well known: a third of the officials had consulted the website at some time. There was little familiarity among the staff of the regional organisations with the regional PHSF products. Among the national organisations that were interviewed, there was substantial familiarity with the regional PHSF, particularly the Regional Report and the Regional Health Compass.

Use and intended use of the regional PHSF

The majority of the officials (72%) had already used the Municipal Reports with key messages for local health policy (see Table 5.1). The percentage for the Regional Report was much lower (47%). No enquiry was made into the actual use of the Regional Health Compass. In 2008, the number of page views (the number of times that the internet pages were visited) was an average of 1,618 per week, with great variation (474 to 2,856 page views in a week) because the Regional Health Compass was consulted much less frequently during the school holidays. There was no simple way of telling whether the pages were viewed by a Local Authority, organisation, or private individual.⁶

Almost all the officials who were familiar with the products (90-100%) indicated that they would make use of all three products, especially when preparing the new memorandum (see Table 5.1). The interviewed officials indicated that the instruction meeting on the Regional Health Compass had really encouraged them to use the website. Two thirds of the internal users had already used the Regional Report, among other things in support of Local Authority public health memoranda, and in the management of relations with the Local Authorities.

Table 5.1. Use of each product by the officials who are familiar with it

	Regional Report (n=20)	Municipal Reports with key messages for local health policy (n=19)	Regional Health Compass (n=7)
	%	%	%
Already used	47	72	*
Expects to use	90	95	100
Expected form of use			
As general reference work	80	63	86
In preparing a new memorandum	80	84	71
In the implementation of health policy	60	68	71
In the development of integral policy	25	53	14
As document for setting the agenda for council	20	42	0

* not asked

The regional PHSF in the media

The media paid particular attention to the publications of the Municipal Reports with key messages for local health policy. In both regions, more than 40 articles appeared in local and regional newspapers, which centred particularly on local problems or results from the Municipal Reports. There was also coverage of the regional PHSF on local, regional, and national radio and television. A number of Local Authorities referred to the Municipal Report on their websites, and in one Local Authority the alderman discussed the Municipal Report in his weblog.

Further dissemination of the Municipal Reports with key messages for local health policy

The Municipal Reports with key messages for local health policy were well disseminated by officials, both internally (within their own Local Authority) and externally (see Table 5.2). Most officials (79%) also wanted to be given support by the RHS in the distribution and/or the implementation, especially in the form of a presentation to the (council) committee. The RHS has provided such a presentation in 31 Local Authorities.

Table 5.2. Communication and distribution of Municipal Reports with key messages for local health policy by officials

	%
Already distributed among colleagues in own Local Authority	42
Intends to distribute within own Local Authority	47
Has already distributed among other organisations	16
Intends to distribute among other organisations	47
Wants RHS support for distribution and/or implementation	79
Nature of the desired support	
Presentation to (council) committee	68
Workshop or informative meeting	26
Other	16

5.3.3 Usefulness of the regional PHSF

Content and policy relevance of the regional PHSF

The content of all three regional PHSF products was found to be informative, understandable, and useful by the majority (84-100%) of the officials (see Table 5.3). The percentage of officials who found the information reliable was lower (63-75%). The rest of the officials had no opinion on the reliability. Three quarters of the officials found the Municipal Reports with key messages for local health policy sufficiently locally oriented, and 84% found that they gave good guidance for local health policy (see Table 5.3). Most officials (85-90%) also found the Regional Report and the Regional Health Compass very useful for local health policy. Almost all the officials (90%) thought that the reports should be published every four years by the RHS, prior to the local public health memoranda.

A positive point mentioned in the interviews was the alignment of the Municipal Reports with key messages for local health policy with the policy spearheads in the Dutch prevention memorandum 'Kiezen voor gezond leven' (Choose a healthy living).⁹ Other points raised in the interviews were primarily points for improvement and wishes in relation to a following regional PHSF. These concerned the addition of new subjects (such as infectious diseases, Public Mental Healthcare, and the Wet Maatschappelijke Ondersteuning (Wmo)- The Dutch Social Support Act, further detailing of the present subjects (such as social and physical environment, prevention, and policy evaluation), and the use of new data sources (such as registrations by regional organisations). Local Authorities and those involved also wanted more local colouring of the Municipal Reports with key messages for local health policy. The policy relevance of some statistics should be made clearer.

Table 5.3. Opinion of officials about the content of each product

	Regional Report		Municipal Reports with key messages for local health policy		Regional Health Compass	
	Agree	Neutral	Agree	Neutral	Agree	Neutral
	%	%	%	%	%	%
The content is informative	95	5	90	10	100	-
The content is understandable	95	5	84	16	86	14
The content is reliable	75	25	63	37	67	34
Contains information that I can use	95	5	90	10	86	14
Is sufficiently regionally oriented	90	5				
Is sufficiently locally oriented			74	21		
Provides good background information for local health policy	85	15				
Indicates direction for local health policy			84	11		
Makes a positive contribution to the public health memorandum	90	10			86	14
Provides good handle for local health policy					86	14
Must be published every four years, linked to the memorandum cycle	90	10	90	10		

Some of the officials, councillors, and national organisations suggested that the RHS might be even more concrete, and give greater guidance in its local policy advice. However, there were also Local Authorities that indicated that they definitely did not want this, and regarded it as their own task and responsibility.

Design

The majority of both the officials (72-95%) and those involved (83-96%) were satisfied with the design of the regional PHSF products. This applied to the presentation form, the construction, the readability, and the layout of all three products. From the interviews, it appeared that the design was a significant factor contributing to confidence in the published information; and concrete positive points and points for improvement were raised for all the products.⁸

Coherence and added value of the regional PHSF

Most of the officials and those involved (81% & 86% respectively) found that the regional PHSF products fitted well together. It also came out in the interviews that there was a wish for the Regional Health Compass to be more closely aligned with the other regional PHSF products.

Three quarters of the officials and 93% of those involved were in agreement with the proposition that the regional PHSF offered added value relative to existing sources of information on local and regional public health. From the interviews with the national organisations, it appeared that they shared this opinion.

5.3.4 Preconditions

Timing and planning of the regional PHSF

The interviewed officials emphasised that, to give the regional PHSF a good position in the local policy cycle, good timing is essential, that is, before a start is made on the local policy memorandum. In this respect, those interviewed found the timing of the regional PHSF excellent.

Thanks to the simultaneous efforts of many people, it was possible to develop and deliver the regional PHSF in a relatively short period (14 months). A number of suggestions for improvements in the planning arose in the interviews with those involved. For example, there should be better internal coordination, particularly in the collection of data for the health monitor.

Communication with those involved in the development of the regional PHSF

The development of the regional PHSF required a great deal of effort, particularly from the Department for Health Promotion, but also from other departments within the RHS (Youth Health Care, General Health Care, and Environmental Health Care). A positive point emphasised by those interviewed was that, thanks to the regional PHSF, there was an improvement in the dialogue and collaboration between different departments and disciplines within the RHS, and also between RIVM and RHS staff. All those involved who were interviewed considered structural attention to internal communication on the process (progress, planning, and decision-making) and the results (key messages) to be essential.

Communication with Local Authorities on Municipal Reports with key messages for local health policy

Half of the officials (53%) said that, during the development of the Municipal Reports with key messages for local health policy, they had had contact on the subject with the RHS. In every case, this contact was with a policy advisor, and in a third of the cases also with an epidemiologist. Of the officials who had contact with the RHS about the Municipal Report, 33% had contact three times or more, and 11% even five times or more. Of the officials, 40% thought that, because of this contact, they had had sufficient influence on the content of the Municipal Report, and 10% thought not. During the development of the Municipal Reports with key messages for local health policy, more than half of those involved (59%) had had contact with the Local

Authority, and, of these, more than two thirds (69%) had had contact three or more times with the same Local Authority. In all cases, this was with an official, and in a quarter of the cases also with an alderman. Of those involved, 69% thought that these contacts had influenced the content of the Municipal Reports, and 25% thought not.

From the interviews with officials and those involved it came to light that the contacts between Local Authorities and the RHS in the preparation of the Municipal Reports with key messages for local health policy had substantial added value for both the Local Authorities and the RHS (in terms of both content and process). It was also felt to be important that these contacts should take place at an early stage.

5.4 Conclusions and discussion

There was considerable *familiarity with and use made of* the regional PHSF. The *usefulness* of the regional PHSF, in terms of content, design, relevance, coherence between the products, and added value relative to existing information, was generally evaluated as positive. Particular *preconditions* that were seen as important were: good timing in relation to the local policy cycle, structural internal communication on the process and the results, and early contact between Local Authorities and the RHS.

5.4.1 Methodological limitations

This evaluation study shows a largely positive picture of the familiarity with, the use of, and the usefulness of the regional PHSF. However, almost half of the officials failed to respond to the questionnaire, and the response from internal users and staff of regional organisations was even somewhat lower. This could mean that only those who were familiar with the regional PHSF responded. It is even possible that it is only those who were positive responded, so the picture presented by the evaluation is too rosy. However, a largely positive impression also emerged from other sources, such as the interviews and the actual presentations to the (council) committees of, in particular, the Municipal Reports with key messages for local health policy.

The interviews were carried out by various members of the project group, so subjectivity in obtaining and reporting information could have played a role. This could have affected the results, and differences between interviewers could have arisen. The appointment of an objective researcher (WJ), who did not carry out any interviews herself, and was furthermore not a member of the project group, reduced this risk. She ensured that the interviewers worked according to the same semi-structured questionnaires, and she was responsible for the interpretation and processing of the reports into conclusions. Recordings of the interviews were made available to the researcher for this interpretation and processing. These measures would seem to provide sufficient guarantees of objectivity.

For practical reasons, the group interview with the policy advisory committee did not take place. Consequently, the functioning and added value of this committee for the policy relevance of the regional PHSF could not be evaluated. Individual interviews with two councillors from the RHS region West-Brabant also failed to take place for practical reasons. Because the role of councillors in the development and dissemination of the regional PHSFs was similar in both RHS regions, the extra information would probably have been limited.

When selecting those to be interviewed, we sought maximum diversity among the respondents. The results are therefore not representative. In view of the exploratory nature of these interviews, this is also not a problem. The interviews were intended precisely to gain further information and to gain insight into success factors and points for improvement. There is then the risk that certain points of criticism or points for improvement represent the opinions of only one or a few people. So, in a preparatory study for the next regional PHSF, these points will be worked out further and, among other things, be put to a broader representation of the Local Authorities for their opinion.

The present evaluation study was, above all, intended to obtain *insights* that are important for a subsequent regional PHSF in both regions and for other RHSs that want to set up a regional PHSF. It is not the case that the findings are representative for other RHS regions. The evaluation of the added value of the regional PHSF in comparison with existing information and reports will depend heavily on the starting situation. The elements of the regional PHSF that were new for both Brabant regions may already be the norm for regional public health reports in other regions. These elements can relate to the products, contents, design, process, and organisation. The main value of this evaluation for other RHS regions is therefore that they can make use of what for them is an improvement.

5.4.2 Familiarity with and use of the regional PHSF

The fieldwork for the evaluation was carried out in the period June to September 2007. This is relatively soon after the appearance of the regional PHSF. The Regional Report and the Regional Health Compass in the RHS region Hart voor Brabant appeared in November 2006, the Regional Health Compass for the region West-Brabant was launched in July 2007. In consultation with the individual Local Authorities, the Municipal Reports with key messages for local health policy were distributed in the period November 2006 to September 2007, before the start of their memorandum exercise. The familiarity with, and the use made of the regional PHSF, will probably have increased since the evaluation study. This is true particularly for the Regional Health Compass, because the information it contains is primarily of value for the

translation of the strategic policy priorities into an activity plan, and most Local Authorities were not yet ready for this at the time of the evaluation.⁶ Moreover, after the evaluation, extra efforts were put into the dissemination and implementation of the Municipal Reports with key messages for local health policy (partly financed by ZonMw).¹⁰

5.4.3 Usefulness

The percentage of officials who found the information in the regional PHSF reliable varied between 63% and 75% for the different products. The other officials had no opinion about the reliability. It could be that these officials did not consider themselves sufficiently competent to judge this. In any case, the officials did not question the quality of the information, which implies acceptance of the Municipal Reports with key messages for regional and local health policy.

Three quarters of the officials found the Municipal Reports with key messages for local health policy sufficiently locally oriented, and 84% found that they gave good guidance for local health policy. Nevertheless, the Local Authorities and those involved wished for more local colouring of the Municipal Reports. It is not clear how this contradiction can be explained, nor what exactly 'more local colouring' means.

Some of the officials, councillors, and national organisations suggested that the RHS might be even more concrete and give more guidance in its local policy advice. However, there were also Local Authorities that indicated that they definitely did not want this, and regarded it as their own task and responsibility. These findings illustrate the diversity in the views of the individual Local Authorities on the advisory role of their common RHS. It is therefore important for the RHSs to develop their own vision of their advisory role, and to get this vision officially established. These findings also illustrate the fact that there are discrepancies between, on the one hand, the expectations of national organisations in respect of the advisory role of the RHS and, on the other hand, the advisory possibilities of the RHS. National organisations should adjust their expectations or create preconditions that increase the facilities of the RHSs in this field.

5.4.4 Preconditions

An important precondition for the successful implementation of a regional PHSF, namely the (adequate) commitment of manpower and resources, was not included in this evaluation. The reason for this is the experimental nature of the development of a regional PHSF in both regions, with consequently a greater commitment of manpower and resources than in a situation in which there is already a (good) example of

a regional PHSF. At the request of the Ministry of Health, Welfare and Sport, the National Institute for Public Health and the Environment (RIVM) has incorporated the knowledge derived from this experimental development into a toolkit for a regional PHSF (www.toolkitvtv.nl).¹¹ The development of the regional PHSF has also been described in two articles.^{2, 6} Other RHSs wishing to get started with a regional PHSF can make use of these aids, so their implementation work will be more efficient. One RHS has already done this successfully.¹² An evaluation by this RHS can provide the other RHSs with a much more realistic estimate of the manpower and resources required than this evaluation in the Brabant pilot regions.

More efficient implementation and reporting of current health monitoring can contribute to making extra effort and resources available; the possibilities for this are being worked out at present by the RHSs Hart voor Brabant and West-Brabant. Moreover, when determining the extra effort and resources in relation to the added value of the regional PHSF, savings due to the regional PHSF should be taken into account. An example of this is that RHS staff, when formulating policy advice and project plans, can take over texts and information from their own regional PHSF without having to search for information from many different sources. They thus have access to the best information, and, what is more, there is consistency in the policy advice and the information given by the RHS.

5.4.5 Comparison with other evaluation studies

It is difficult to judge on the basis of this evaluation study how successful the regional PHSF is in comparison with similar regional initiatives. Evaluations of regional public health reports are scarce in the National literature (including grey literature). We searched, via <http://scholar.google.com> and www.ggd Kennisnet.nl, for publications with the keywords 'evaluatie' (evaluation) plus 'volksgezondheid' (public health), 'volksgezondheidsrapportage' (public health reporting), 'rapportage' (report), or 'monitor'. This turned up only one publication on the evaluation of a regional public health report.¹³ It is not clear whether this means that reports on regional public health in the Netherlands are not evaluated. It can also be that evaluations have not been reported, or that reporting has been done only via grey literature. That is why the request for evaluation studies on regional public health reports in the past five years has also been put out among RHS epidemiologists via the membership list of the Epidemiology Section of the Association of the Netherlands RHSs. Responses were received from thirteen of the 28 RHSs approached. Seven of these said that they had not carried out an evaluation study of a public health report in the period in question. Among the other six RHSs, in five cases, a public health report had been evaluated in Local Authorities: three times concerning a Youth monitor, once a Seniors monitor, and once a health atlas consisting of books on various themes and

target groups.¹³⁻¹⁷ Although these public health reports differed substantially in their design and elaboration from the regional PHSF, just as with the evaluation of the regional PHSF, all the evaluations showed that the majority of the (responding) Local Authorities were familiar with the report, and intended to use the results in local policy. However, these intentions expressed by the Local Authorities still say nothing about the actual use (implemented policy) of all this information. Until now, this has not been investigated in even a single study. Among the topics investigated in the project 'Kennis in werking' (Knowledge in process) within the Academic Collaborative Centre for Public Health Brabant are: whether and how the regional PHSF is actually translated into policy, and its implementation in certain Local Authorities.¹⁸

5.4.6 Concluding remarks

The success factors and recommendations arising from the evaluation study will be used in the further development of the next regional PHSF in both regions, and for the development of a theoretical model of the regional PHSF relating to the products, the content and design, and the process and organisation. The recommendations relate to: increasing familiarity with (parts of) the regional PHSF, expansion of the area covered, more local colouring, maintaining collaboration (between RHS and Local Authorities, and between RHS and RIVM), and more attention to planning and (internal) communication.

The regional PHSF was quickly recognised by the Ministry of Health, Welfare and Sport as an important instrument for improving the quality of the local public health memoranda.^{7, 9} The regional PHSF has thus gained an important position nationally.^{19, 20} The Ministry of Health, Welfare and Sport is supporting the national implementation by assigning to the RIVM the task of developing and implementing a toolkit for a regional PHSF (www.toolkitvtv.nl). Because of this national interest in the regional PHSF, there arose, justifiably, discussion of whether the regional PHSF was so different from what was published by other RHSs in relation to regional public health reporting.²¹ According to some RHS epidemiologists, many characteristics of the regional PHSF are also to be found in the reports of other RHSs. However, there is no systematic overview of RHS reports (nor of the way in which these were created), that would make it possible to compare their relevant characteristics. What is more, until now there has been no investigation into the effectiveness of RHS public health reports in influencing local policy, let alone their cost-effectiveness. This evaluation of the regional PHSF is one of the few (published) studies that give some insight into intended use. Further research is being undertaken in the Academic Collaborative Centre for Public Health Brabant into the effective elements of the regional PHSF and the way in which the findings of the regional PHSF are translated into local policy. Because of this, evidence-based methods are now also attracting interest within RHS

epidemiology, the very function that is intended to promote evidence-based working in public health. It is also important that finance continues to remain available in the future in order to facilitate further research into the effectiveness of RHS epidemiology.

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Chapter 6

Bringing the regional Public Health Status and Forecasts report (PHSF) and the Supply and Demand Analysis Monitor (VAAM) into alignment

Feasibility study into cohesive information provision for health and care at the regional and local levels

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Abstract

Improved alignment between the provision of information in public health and in primary healthcare could provide an important common basis for linking up public and curative healthcare. Important instruments for providing information at local level are the Public Health Status and Forecasts report (PHSF) for public health, and the Supply and Demand Analysis Monitor (VAAM) for primary healthcare. In this feasibility study, we investigated how we could better align the information provided by these two instruments.

For both instruments, the research approach consisted of a number of common phases (inventory, selection, analysis, and working out) in which the intended users of both instruments were involved so as to indicate and ensure the relevance to the objective of the instrument.

The results show that, while alignment between the information provided in the VAAM and the regional PHSF is considered to be desirable, at present this is possible only to a limited extent. It is already possible to supplement the regional PHSF with VAAM data on supply and demand for GP care, (for Local Authorities, the most important form of primary healthcare). Similarly, the VAAM can be extended with data on health and prevention from the regional health surveys, (one of the most important sources for the regional PHSF). However, the VAAM forecasts of expected care demand cannot be improved in this way. To link up public health and primary healthcare at local level it is above all important to invest in the dialogue between Local Authorities and primary healthcare.

6.1 Introduction

6.1.1 Aligning public health and primary healthcare

Improving the alignment between public health information and primary healthcare information could provide an important common basis for linking up public health and curative healthcare. The integral analysis of information on (determinants of) health and the demand for care can enable those who plan primary healthcare to match the nature and amount of primary healthcare better to the local health status. If they have access to up-to-date information on what is available locally, primary healthcare providers can then also more easily refer their clients to preventive interventions, and make better use of the opportunities for (collaboration in) prevention. Conversely, knowledge of the demand for primary healthcare can contribute to Local Authority health policy directed at improving the accessibility of primary healthcare.

An important instrument for providing public health information at local level is the regional Public Health Status and Forecasts report (PHSF).¹⁻⁶ For providing information in primary healthcare, this is the Supply and Demand Analysis Monitor (VAAM; www.nivel.nl/vaam).⁷⁻¹⁰ When we compare the regional PHSF and the VAAM, the most important correspondence is that both instruments locally and regionally give access to national, regional, and local care and health figures, in support of local health(care) policy. Apart from this correspondence, there are mainly differences, such as in geographical presentation level, scope, approach to the contents, and products (see Table 6.1).

Table 6.1. Differences between the regional PHSF and the VAAM

Aspect	VAAM	Regional PHSF
Level of the presentation	Postcode and Local Authority level	Regional and Local Authority level
Coverage	All postcode areas in the Netherlands > 1.000 residents	Up till now, 10 RHS regions
Focus	Supply of and demand for primary healthcare	Health, determinants, (preventive) care, significance for policy
Primary users	Stakeholders in planning of local primary healthcare	Local Authorities, regional and local stakeholders in the field of public health
Product(s)	Website	Regional report, Municipal reports and website(s)
Domain	Care policy	Health policy

For primary healthcare purposes, the information in a regional PHSF is not sufficiently detailed because the providers organise care mainly at the level of neighbourhood and district, and match their provision to the demand in these areas, while the

smallest geographical level in a regional PHSF is very often the Local Authority. Furthermore, the regional PHSF is not sufficiently comprehensive, because it does not contain information on the degree of matching of supply and demand, and because, in the regional PHSF, a selection has been made from available information about the provision of primary healthcare on the basis of relevance for Local Authority health policy.

For public health, the present information in the VAAM is of limited value, because the VAAM focuses on primary healthcare, but does not analyse this information in association with local information on the health status and determinants of health (including prevention). Furthermore, the VAAM is not really adequate for comparing Local Authorities with each other or with the Netherlands as a whole. Possible differences in expected demand for care in the VAAM are wholly attributable to differences in the composition of the population and the degree of urbanisation, because national figures on care take-up are extrapolated from these factors. Finally, the VAAM presents mainly bare figures that indicate where there are possible shortages and surpluses, without indicating policy options for Local Authorities.

6.1.2 Aligning regional PHSF and VAAM

In this feasibility study, commissioned by the Ministry of Health, Welfare and Sport, we investigated the extent to which we can improve the alignment of the information provided by the regional PHSF and the VAAM. The main question of this study is therefore: to what extent is it desirable and feasible to improve the alignment between the information provided by the regional PHSF and the VAAM? For this purpose, in the study, the following sub-questions were answered separately for each instrument:

1. What information from one instrument do the users want to include in the other instrument, and for what purpose?
2. What indicators are suitable for this, and how should the indicators be adapted before they can be included in the other instrument?
3. How can this information then be best presented?

A report on this feasibility study has been presented to the Ministry of Health, Welfare and Sport.¹¹

6.2 Methods

The method of investigation for both instruments consisted of a number of common phases (inventory, selection, analysis, and working out) in which the intended users of both instruments were involved so as to indicate and ensure the relevance to the objective of the instrument. In each of these phases, choices were made that then formed input for the following phase. Therefore, in this section, it is mainly the process that is described. In the results section the methods are described in greater detail.

6.2.1 Information from the VAAM for the regional PHSF instrument

Inventory

First, the project group made an inventory of all available indicators relating to primary healthcare in versions 2.1 and 3.0 of the VAAM. From among these, on the basis of the expected relevance for local health policy, the project group made a selection of 'potentially relevant VAAM indicators for public health' (hereafter referred to as the VAAM inventory).

Selection

In three Local Authorities in the working area of the RHS (Regional Health Service) Hart voor Brabant, discussions were held with the Local Authority 'care' policy official, the ROS (Regional Support Structure) representative, and the RHS advisor, concerning which information from the VAAM could be included in the new regional PHSF, and with what (policy) aim. The basis for this discussion was the VAAM inventory plus comprehensive explanation that had been sent earlier.

Analysis

Based on the results of these discussions, the project group decided how the subject 'primary healthcare' could be incorporated in the new regional PHSF, and what indicators they would have to analyse for this purpose and how. These analyses were then carried out for the RHS region Hart voor Brabant and the Local Authority of 's-Hertogenbosch.

Working out

The way in which the information was to be presented for the RHS region Hart voor Brabant and the Local Authority of 's-Hertogenbosch was then worked out. This form of presentation was submitted to the policy official of the Local Authority and two representatives of the relevant ROS for evaluation (on usability and relevance). The form of presentation for each Local Authority was also discussed with five policy officials of different Local Authorities in the Hart voor Brabant region, two of whom had also been involved earlier. The final working out of the subject 'primary healthcare

in a regional PHSF' was added as an example to the 'regional PHSF toolkit' of the RIVM (www.toolkitvtv.nl). This toolkit is intended as an aid for RHS epidemiologists when making their own regional PHSF or other public health reports.

6.2.2 Information from the regional PHSF for the VAAM instrument

Inventory

Using the regional PHSF toolkit, the project group first made an inventory of all available indicators possibly relevant for the purpose and of possible interest to the various VAAM target groups. On the basis of the assessment of the suitability of the indicators for presentation in the VAAM (that is, representative at postcode level), the project group selected a number of 'potentially relevant PSHF indicators for primary healthcare' (hereafter referred to as the regional PHSF inventory list).

Selection

The regional PHSF inventory list was put before the members of the VAAM sounding board group that includes representatives of patient organisations, medical insurers, ROSSs, Local Authorities, and the Ministry of Health, Welfare and Sport. The purpose of this discussion was to decide, together with the VAAM users, what information from the regional PHSF could be incorporated in the VAAM with what aim. Based on this discussion, a list was prepared of relevant PHSF indicators that could possibly be added to the VAAM.

Analysis

The VAAM staff then investigated the usability of the selected indicators. In these analyses, it was considered whether the data from the regional PHSF could be shown at a four-position postcode level. The added value of the indicators for predicting care take-up was also considered.

Working out

Then the way of presenting the usable indicators in the VAAM was worked out. In this phase questions were answered such as: 'What tables, with what indicators, are to be published in the VAAM?', 'At what level are the indicators to be presented?' and 'Which indicators are to be clustered together on a page?'

6.3 Results

6.3.1 Information from the VAAM for the regional PHSF instrument

Inventory

The groups ‘social demographic data’, ‘expected number of GP contacts per disease cluster’, and ‘data on the quality of (primary) healthcare’ were judged by the project group as not relevant for inclusion in the regional PHSF [Note 1]. The reasons for this were that the indicators were already available, were not suitable for describing the health status, were too detailed for Local Authorities, and/or the data referred to issues over which the Local Authorities had no influence or for which they had no responsibility. The final inventory list contained the VAAM indicators in the following groups: ‘supply and demand for GP care’, ‘expected demand for care for chronic diseases, comorbidity, and multimorbidity’, ‘pharmaceutical care’, ‘contact physiotherapy’, and ‘dental care’.

Selection

The three discussions with the Local Authorities (‘s-Hertogenbosch, Goirle, and Sint Anthonis) took place in January 2010. It was clear that the Local Authorities were still uncertain about their role and their responsibility in relation to (primary) healthcare policy. They seem to still limit their directing role and formal responsibility for healthcare policy to home care under the Social Support Act (Wmo), and they play no more than a facilitating role in primary healthcare, for example in the housing of a health centre.^{12, 13} The Local Authorities varied in their ambition to do more in the future in relation to primary healthcare policy. For example, one Local Authority had no ambitions in this direction, while for another this ambition depended, among other things, on administrative agreements, national policy objectives, available budget, and reaching agreement with other stakeholders.

The need to incorporate specific local care statistics from the VAAM in the regional PHSF, varied among the Local Authorities from ‘interesting for some indicators’ to ‘none of them are really relevant’. For example, there was doubt as to whether expectations based on national data would provide good local figures for a rural area with various centres of population, when one of the ‘problems’ in such an area is precisely the distribution of care over the various centres. Furthermore, a case was made for the alignment of different sources of data. ‘De Wijkscan’ (the neighbourhood scan) was also brought up on several occasions as an important source of information.¹⁴ It was also pointed out that care figures can fluctuate widely. This raised the question of whether it makes sense to put these figures into a regional PHSF that “is published once every four years”, or whether it is better to simply outline these figures in the regional PHSF and provide references to other up-to-date sources of data such as the

VAAM. In relation to care data, the Local Authorities also indicated an interest in information on the Wmo (Social Support Act). For the presentation of comparative data, they were particularly interested in a comparison of their own figures with those of adjacent, 'comparable' Local Authorities.

Analysis

On the basis of the discussions with the Local Authorities and their advisors, it was then decided in the project group that the main additions to the regional PHSF should be descriptions, from various perspectives, of what the role of the Local Authorities could be in (primary) healthcare policy. It was also decided to include only the VAAM indicators for supply and demand for GP care in the regional PHSF, since information on what other primary healthcare providers had to offer was not (yet) available.

Given this, a new indicator for the demand for GP care was formulated in the VAAM, namely the expected number of GP contact minutes per inhabitant per year (both including and excluding practice support staff).¹⁵ The total number of available GP contact minutes (supply) in a Local Authority or postcode area is estimated in the VAAM by multiplying the estimated local GP FTEs with the average number of net contact minutes per GP FTE in the Netherlands (75,000 minutes).^{10, 16} By setting the figures for demand (estimated demand in total number of contact minutes) and supply (available contact minutes) in an area against each other, it is possible to see how well these match.

Working out

In the three products of the regional PHSF, the primary healthcare component is worked out as follows:

- The Regional Report of the regional PHSF describes the possible role of the Local Authority in relation to primary healthcare. It describes the accessibility and supply of primary healthcare in the region, and, specifically in relation to GP care, the alignment between supply and demand.
- The Municipal Report also discusses the role of the Local Authority in relation to primary healthcare. It then describes the supply and accessibility of GP care in the Local Authority, and the significance of this for Local Authority policy. Finally, it provides a prognosis of the demand for GP care based on demographic developments.
- The website Regional Health Compass (Regionaal Kompas Volkgezondheid; www.regionaalkompas.nl) contains research information on the supply of GP care in the RHS region and in the Local Authorities, on the alignment of supply and demand, and on various indicators of accessibility. The policy information is concerned primarily with the alignment between public health and primary healthcare (national policy,

opportunities for Local Authorities). Information on preventive interventions via or in collaboration with primary healthcare is given by describing recommended/effective interventions, and by including links to relevant regional provisions in the Intervention database (I-database) of the RIVM (www.loketgezondleven.nl/interventies/i-database).

As a check, in October 2010, the way of presenting primary healthcare in the Municipal Report was discussed with five officials from various Local Authorities (two of whom had already been involved earlier). They found the information that was included to be relevant for Local Authority policy, but commented that the (statutory) possibilities for Local Authorities to influence care supply and/or the accessibility of GP care are very limited. This should be taken into account when formulating the significance of the findings for policy.

Three items on the use of indicators from the VAAM were then added to the PHSF regional toolkit of the RIVM.¹⁷ In addition, the new indicators that the RHSs can use for this purpose have been included in VAAM 3.0.^{10, 18}

6.3.2 Information from the regional PHSF for the VAAM instrument

Inventory

The inventory followed the approach of the regional PSHF toolkit, in which the indicators and sources are organised in five categories: population, health status, health determinants, prevention, and care. The categories 'population' and 'care' were already presented in the VAAM, and were therefore not considered. Of the remaining indicators (nine for 'health', nine for 'determinants' and three for 'prevention'), the project group selected a total of nine, three for 'health' and six for 'determinants'. Reasons for not selecting indicators were: 1) unsuitable as input for the discussion of the alignment between supply and demand, 2) overly subject to incidental fluctuations, 3) insufficiently indicative of demand for care, 4) already included in the VAAM, and/or 5) not available at Local Authority level. For the 'prevention' indicators preference was given to placing a reference in the VAAM to the I-database of the RIVM.

Selection

The members of the VAAM sounding board group were positive about the initiative to align the two sources of data and the proposal to add indicators from the regional PHSF to the VAAM. The preference of the members was to have as much information as possible on health and care, so they found all the indicators in the list suitable for the VAAM. They were particularly keen to have the 'health' indicators, because these can contribute to a better estimation of the care demand to be expected in an area. The indicators for 'determinants' were seen as valuable because they give an

indication of the potential need for preventive care. The availability of prevention programmes was seen as important in relation to the indicators for ‘determinants’, to enable better alignment between supply of and demand for preventive care.

Analysis

The basis of the VAAM-method (using predictive models and demographic data to estimate the present use of primary care facilities by the local population) is the four-position postcode area, because primary healthcare is organised locally, and the four-position postcode is the smallest geographical area for which a link is possible between CBS (Statistics Netherlands) Statline data and supply data.^{7-9, 19}

First of all the question of whether the indicators from the regional PHSF can be represented using the four-position postcode was investigated. The data from the 2005 Adult Health Survey of the RHS Hart voor Brabant (19-64 year) was used for this. The sample size of this survey is such that prevalence at Local Authority level can be measured accurately. The availability and accuracy of the estimates for the indicators at four-position postcode level proved insufficient for presentation in the VAAM. This also meant that the indicators for (determinants of) health from the regional PHSF could not be used to improve the prediction of the demand for care by the VAAM-method.

Therefore, as a second option, the question of whether the VAAM-method generates reliable results for predicting the values of the selected indicators at Local Authority and four-position postcode level was considered. For this purpose, the RHS survey file was first supplemented with socio-demographic data (income, type of household, ethnicity, and urbanisation) from the CBS by linking at four-position postcode level.

The prevalence of each indicator was then modelled using a logistic regression analysis, for example, see Table 6.2 for the ‘smoking’ indicator. However, the validity of this prediction model for smoking proved to be inadequate (on the basis of goodness-of-fit), so it was concluded that the VAAM-method is not suitable for predicting the percentage of smokers at Local Authority and postcode levels using the RHS survey file.

Table 6.2. Regression coefficient (B) for the predictive models for the percentage of smokers (aged 19-64), according to the VAAM method and the modified VAAM method

	VAAM method		Modified VAAM method	
	B		B	
Constant a ¹	-1.281945**	Constant a ¹	74.88054*	
Female	-0.1467977**	% female	-0.137094	
Aged 19-24	0.1770975*	% aged 19-24	-0.162051	
Aged 40-64	-0.0291923	% aged 40-64	-0.2451979	
Proportion non-Western	0.7624199	% non-Western	-38.99951	
Proportion 1-person households	1.377779**	% 1- person households	-2.515157	
Proportion low income	-0.2011526	% low income	-40.37426	
Little urbanisation	0.0783017			
Moderately urban	0.0556889	% moderately urban	-6.37211	
Heavily urban	0.0710678	% heavily urban	-7.834762	
Very heavily urban	0.0919084	% very heavily urban	-10.87499	
		R ²	12.1%	

1 Constant = man, aged 25-39, Western, multiple person households, not low income, not urban

* p<0.05

** p<0.01

Then, as third and last option, it was considered whether, with a modification of the VAAM method, reliable results could be generated for predictions for the selected indicators at Local Authority level. For this purpose, the data file of the RHS Health survey was aggregated to Local Authority level, and linked at Local Authority level to the socio-demographic data of the CBS. Using this aggregated file (n=29) the percentages for the indicators were predicted using a linear regression analysis, for example, see Table 6.2 for the ‘smoking’ indicator. This model was significant ($p_{\text{constante a}} < 0,05$), so it was concluded that the use of this modified VAAM method with the RHS survey file generates predictions at Local Authority level that give insight into the part of the differences between Local Authorities that is explained by the composition of the population and the part for which other explanations must be sought.

Working out

The relevant indicators from the regional PHSF are shown in the VAAM at Local Authority level on the basis of the data derived from the RHS Adult Health Survey. The observed values are presented beside the values that are predicted using the modified VAAM method. By comparing these, possible differences can be detected that cannot be explained by the make-up of the population.

Two web pages will be added to the VAAM. Four indicators will be shown on the *health status* page: 1) the percentage of people with self-assessed poor health, 2) the percentage of people with limitations, 3) the percentage of people with limitations, broken down by type of limitation, and 4) the percentage of people with chronic diseases.

Six indicators will be shown on the *health determinants* page: 1) the percentage of people overweight and underweight, 2) the percentage of people who smoke, 3) the percentage of people with excessive alcohol consumption, 4) the percentage of people who are physically inactive, 5) the percentage of people who use drugs, and 6) the percentage of people under the GP for hypertension.

6.4 Discussion

The most important conclusion is that further alignment of the information provided in the regional PHSF and the VAAM is considered desirable, but is at present possible only to a limited degree. For example, the use of data from the VAAM in the regional PHSF is at present limited to data on the supply and demand of GP care because relevant indicators, particularly indicators concerning the supply by other primary healthcare providers, are not (yet) included in the VAAM [Note 2]. The other VAAM indicators were not considered sufficiently relevant for Local Authority health policy. On the other hand, predictive models using the RHS survey file following the traditional VAAM method (determining the model at individual level) and the modified VAAM method (determining the model at Local Authority level) are still not reliable working methods for predicting the observed values of the regional indicators for health (determinants), so these models are also unusable for predicting these indicators at neighbourhood and district level. Using the modified VAAM method at Local Authority level, it is possible to include data on observed and expected values of these indicators, whereby the differences between them are an indication of differences that cannot be explained by the make-up of the population. Finally, the prediction in the VAAM of the expected demand for care cannot be improved by using the data from the regional health survey, one of the regional PHSF's most important sources.

6.4.1 Use by Local Authorities

In this feasibility study, the indicators were selected on the basis of relevance, first by the project group, and then by the users of the regional PHSF and the VAAM. One of the arguments affecting the selection of VAAM indicators to be used in the regional PHSF was the issue of the responsibility of a Local Authority. But even if a Local Authority has no (formal) responsibility, in its directing role it can nonetheless feel a

need for local information on primary healthcare. The finding that Local Authorities do not yet have a very clear idea of their role in relation to primary healthcare makes it understandable that it is difficult for them to recognise their need for information on the subject. This also makes it difficult for Local Authorities to indicate what information about this they would like to see included in a regional PHSF. Only when Local Authorities have a clearer picture of their role in primary healthcare, can they make better decisions on what information they need for performing that role properly.

However, Local Authorities do need better understanding of the available data. They would like to see examples of how other Local Authorities perform their directing role, and what steps they take towards increased collaboration between prevention and care. Finally, Local Authorities do have a need for comparisons with adjacent Local Authorities.

It is surprising that, in the discussions, the Local Authorities expressed concern that the inclusion of information, especially care data, in the regional PHSF would not provide them with up-to-date information since the regional PHSF is published 'only' once every four years, whereas the VAAM is updated annually. Evidently there is still insufficient realisation that the regional PHSF consists of more products than only the Municipal reports and the Regional report that are prepared prior to the issue of the local policy memoranda. The regional PHSF also includes websites such as the Regional Health Compass (www.regionaalkompas.nl). These websites provide the Local Authorities with excellent opportunities for consulting relevant up-to-date figures and policy information.²⁰

6.4.2 Use by primary healthcare

While the Local Authorities indicate that they have little need for the information from the VAAM, the VAAM-users on the other hand indicate that they would prefer to have all the information from the regional PHSF available to them. This can possibly be explained by the fact that the VAAM sounding board group is made up of representatives from many different groups, each with its own information needs. Also, the care providers and care financiers possibly expect that, with local information on (determinants of) health, they can estimate the (expected) local need for care better than only on the basis of the (expected) use of care. Some would even prefer to have this information per street. The level of detail of the VAAM (four-position postcode area) makes the accurate measurement of (determinants of) health a very expensive business. Neither the VAAM-method nor the modified VAAM-method proved to be a good alternative for estimating the regional PHSF information at this level. Moreover, the predictive models show that much variation in (determinants

of) health still remains unexplained, even after the make-up of the population has been taken in to account. Because of this, contrasting the observed figures with the predicted figures at Local Authority level may contribute to a discussion of the local factors that determine the (determinants of) health, and to which prevention should therefore be directed in the Local Authority.

6.4.3 Final remarks

Both the regional PHSF and the VAAM should above all serve as input for local dialogue as the starting point for sound local health(care) policy based on available information. In all cases the information from the instruments must be supplemented with knowledge of the local context (experience of professionals and local people, other information sources), so that the policy makers can make well-grounded decisions.

The feedback from the Local Authorities shows that they expect that the available information will enable them to enter into dialogue with primary healthcare. This is an important first step towards bringing them closer together, and can ultimately lead to the desired integration of prevention and primary healthcare. In one of the Local Authorities with which discussions were undertaken for this project, these discussions have actually led to structural consultation with the relevant ROS on the alignment between prevention and primary healthcare. So, for linking public health and primary healthcare, it would be better in the first instance to invest in the dialogue between Local Authorities and primary healthcare than in (even) further supplementing and detailing the local information. The incorporation and alignment of relevant information on primary healthcare in the regional PHSF on the one hand and relevant information on health and determinants (including prevention) in the VAAM on the other hand, offers valuable support for this dialogue. However, integration of the two instruments does not appear to be desirable because of their different purposes and users.

Notes

1. These descriptions are based on VAAM 2.1. Since 28 September 2010, VAAM 3.0 has been online, in which (some) of the terminology has been changed.^{10, 18}
2. Information on the availability of primary healthcare providers other than GPs will be included in the 2011 VAAM.
3. The authors wish to thank everyone who has contributed in any way to this feasibility study. This study was commissioned and financed by the Ministry of Health, Welfare and Sport, and carried out by the NIVEL (The Netherlands institute for health services research). It was undertaken in collaboration with the RIVM, the RHS Hart voor Brabant, Tranzo - University of Tilburg, and Robuust, the Regional Support Structure Zuid-Nederland.

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Part III

USING REGIONAL EPIDEMIOLOGICAL
INFORMATION IN POLICY AND RESEARCH



Chapter 7

Quantitative measurement of the utilisation of research by Dutch local health officials

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Currently under review at a health research journal

Abstract

Background. In the Netherlands, Local Authorities are required by law to develop local health memoranda, based on epidemiological analyses. The purpose of this study was to assess the actual use of these epidemiological reports by municipal health officials and associated factors that affect this use.

Methods. Based on a theoretical framework, we designed a questionnaire in which we operationalized instrumental, conceptual, and symbolic use, the interaction between researchers and local health officials, and four clusters of barriers in this interaction process. We conducted an internet survey among 155 Dutch local health officials representing 35% of all Dutch municipalities. By means of multiple regression analyses, we gained insight into the related factors for each of the three types of research utilisation.

Results. The results show that local health officials use epidemiological research more often in a conceptual than an instrumental or symbolic way. Conceptual use was associated with a presentation given by the epidemiologist during the policy process, the presence of obstructions regarding the report's accessibility, and the local official's personal belief systems and interests. Instrumental and symbolic use increased with the involvement of local officials in the research process.

Conclusions. The results of this study provide a partial solution to understanding and influencing research utilisation. The quantitative approach underpins earlier qualitative findings on this topic. The outcomes suggest that RHS epidemiologists can use different strategies to improve research utilisation. 'Blurring the boundaries', and the enhancement of interfaces between epidemiologists and local health officials, will create better possibilities for optimizing research use.

7.1 Background

In recent years, research utilisation has been a growing scientific field. As Nutley et al. (2007) stated: “Research use is a complex and multifaceted process, and the use of research often means different things for different people”.¹ In public health discourse, ‘use’ is mainly acknowledged if research causes a change of policy. Research use in the sense of increasing the general body of knowledge is not taken into account, and research use as ammunition during policy discussions, is often regarded as ‘mis’use.¹ Many health professionals perceive research utilisation as important for improving health at population level, related to the increasing importance of the concept of ‘evidence based policy’ (EBP). Thereby it is assumed that EBP will offer the best possibilities for improving population health. EBP means the conscious, explicit, and judicious use of the best available evidence during the policy process.² The term ‘evidence-informed’ can also be used, to stress the role of evidence and the ambition to improve the extent to which research evidence leads to informed decisions.³

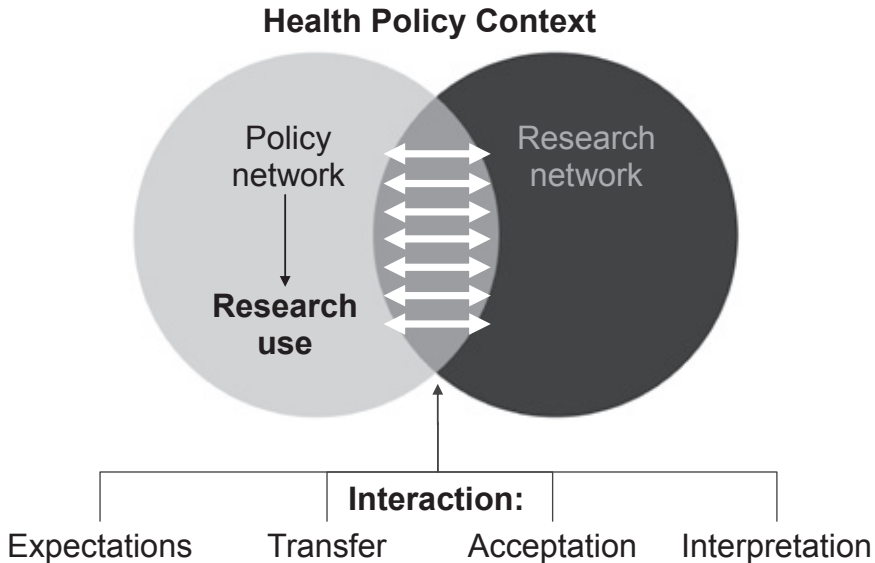
In the Netherlands, the Dutch Public Health Act builds on the concept of EBP, stating that Local Authorities are required to establish a local public health memorandum every four years on the basis of (local) epidemiological research. The regional or local epidemiological reports that are produced for this purpose are mainly based on health surveys, and have a descriptive nature. For example, the reports describe the frequency of different health measurements such as the occurrence of diseases or quality of life. They also describe the occurrences of determinants of health such as lifestyle and social and environmental factors. The epidemiological research data is provided by 28 Regional Health Services (RHS) serving all 418 Dutch municipalities. However, it is yet not known whether and how the epidemiological reports are used by the local health officials who receive them.

The aim of this paper is to determine how and to what extent the RHS epidemiological research is used during the development of local health memoranda, and to identify the factors that influence this use. Qualitative studies are valuable for identifying the mechanisms of research use, but to gain insight into the degree of utilisation, a quantitative approach is more suitable. Earlier municipal case studies have shown that the local health officials fulfil a key role in the distribution of epidemiological information and knowledge during the local health policy development process, so a survey was carried out among these local health officials.⁴

In an earlier published review, we developed a conceptual framework on research utilisation in this specific Dutch context.⁵ This framework is shown in Figure 7.1. First, we state that an epidemiological research report is produced in a network of

researchers. Second, the report is received by several policy makers who all are related to one another in a policy network. In the theoretical literature on research utilisation, interaction is seen as an important precondition for translating research findings into policy.⁶⁻¹¹ Interaction can mean either that policy makers are involved in the research process or that researchers are involved in the policy process. In our conceptual framework, this interaction, and consequently research use, can be obstructed by several barriers, which we have divided into four domains. The *Expectation* domain addresses the issue of awareness among researchers and policy makers of each other's 'niches', containing barriers that can be acted upon during the preparation phase of research.¹² The *Transfer* domain refers to the publication phase of the research cycle, addressing research communication. In another case study conducted in the Netherlands, it became clear that media attention can be very influential.¹³ Therefore we added this item to the theoretical framework in the transfer domain. Two other domains, *Acceptance* and *Interpretation*, both contain barriers relating to the individual attributes of the officials. *Acceptance* barriers refer to the personal perception of the validity of the research outcome, (not to be confused with scientific validity). *Interpretation* barriers refer to the meaning each person gives to research outcomes.

Figure 7.1. The conceptual framework on research utilisation in this specific Dutch context



There are various quantitative measurements for research utilisation. Many quantitative studies have used the ladder of research utilisation of Knott and Wildavsky, a measure of main outcome.^{7, 14-17} However, as a result of our municipal case studies, we became more interested in the different ways of usage because we noted that the same research can be applied in several ways.⁴ Therefore we followed Amara et al., and distinguished three types of use for individual policy makers: instrumental, conceptual, and symbolic.¹⁶ Instrumental use means that the research is acted upon in specific and direct ways, for example to solve a problem at hand. Conceptual use means that the research improves the understanding of the subject matter and related problems, and refers to a more general and indirect form of enlightenment. Symbolic use means that 1) research is used to justify a position or course of action for other reasons such as someone's own interests that have nothing to do with the research findings (political use), or 2) the fact that research is being done is exploited to justify inaction on other fronts (tactical use).

In our municipal case studies it was shown that the behaviour of the local health officials regarding epidemiological research utilisation also depended on the characteristics of the policy memoranda and how the policy process was organized.⁴ For example: was the policy memorandum combined with other policy domains or was it exclusively focussed on public health, or which stakeholders were involved during the policy process and what role did the city council play? We believe these associated factors belong to the setting of the policy network in our conceptual framework, and it is therefore important that they are taken into account in the current study.

7.2 Methods

7.2.1 Data collection

In the absence of a national list of Dutch local health officials, we approached all 29 (at that time) Dutch RHSs, asking them to cooperate with our study by providing us with the names and phone numbers of the municipal health officials in their working area. Twenty RHSs cooperated, covering 339 municipalities. Reasons for the RHSs not to cooperate were lack of time, other priorities, different timing of the development of the local health memoranda, and participation in other research projects regarding public health policy. Four research assistants approached the 339 local health officials by phone between November 2008 and April 2009, and asked them to participate. Those participating were asked to provide some background information such as the number of years working on this policy issue in this municipality, what other policy issues they have in their portfolio (e.g. social welfare, youth, or the elderly), and their education and research experience. Subsequently we asked for their email addresses, and sent them a protected link to an internet questionnaire. In December 2008, all

approached officials received a digital Christmas card, and all respondents who had not yet filled in the questionnaire received a personal reminder by email in February 2009.

7.2.2 Measurement of epidemiological research use

The survey was developed on the basis of our conceptual framework and the earlier findings from our case studies.⁴ Based on Amara et al., we made a distinction between instrumental, conceptual, and symbolic use to measure the nature and extent of research utilisation.¹⁶ Though Amara et al. only used one question for each of these concepts, we designed multiple questions for each concept, since the concepts can have several meanings in the specific Dutch context.^{4, 16} This was also suggested by Ouimet et al., who pointed out that, in order to obtain more understanding of research utilisation, more precise questions are needed.¹⁵ The questions we developed initially were pre-tested by, and discussed with, ten practitioners in the public health field (three RHS epidemiologists, four RHS local health policy advisors, and three local health officials).

The concept of instrumental use, referring to direct and concrete action due to the specific research results, was measured using two questions that asked whether research results had led to (1) new direct policy actions; and (2) the termination of one or more existing policy activities. Conceptual use was measured using three questions that asked whether the research results had led to (1) a better understanding of the occurrence and causes of health problems within the RHS region; (2) a better understanding of the causes and occurrence of health problems within the municipality; and (3) new long-term ideas for projects or policies within the municipality or RHS region. Finally, symbolic use was measured using two questions that asked if, due to the research, the officials were able to (1) question existing policies and decisions; and (2) put personal ideas on the policy agenda. All questions had a 5-point Likert-type response scale ranging from (1) not applicable in my situation; (2) minimally applicable in my situation; (3) moderately applicable in my situation; (4) applicable in my situation; (5) strongly applicable in my situation.

7.2.3 Measurement of the associated factors

All independent variables are shown in Tables 7.1 to 7.4. For the policy context (as part of the policy network in the theoretical framework), we first defined six categories of background variables: the size of the municipality, the urban nature of the municipality, the number of years worked as a local health official in this municipality, whether the local health official had to consider other policy issues in his daily job besides public health (dichotomous), the educational level of the official,

Table 7.1. Associated factors of research utilisation for policy and epidemiological reports (n=155)

Variables	Response categories	%
Policy memorandum		
Composition of the memorandum	Memorandum specific for my own municipality	61.3
	Memorandum composed with other municipalities with a local section	38.7
Type of memorandum	Memorandum solely about public health	78.7
	Memorandum combines public health issues with other policy issues such as welfare	21.3
Policy process		
The initiative to start the memorandum	Local administrators	49.7
	City council	10.3
	Local official	24.5
	RHS	10.3
Receive support on the decision making process from the Registry office	Yes	14.8
	No	85.2
Council members are involved during policy preparation before they had to make a decision	Yes	31.6
	No	68.4
One or more welfare and health care organizations are involved during policy preparation	Yes	81.3
	No	18.7
One or more organizations of client representatives are involved during policy preparation	Yes	82.6
	No	17.4
One or more local officials working on other policy issues are involved during policy preparation	Yes	95.5
	No	4.5
Epidemiological report		
Geographical area of the epidemiological research	Local level only	12.9
	Regional level only	10.3
	Local as well regional level	71.6

and his experience in conducting research. Secondly, we defined two categories of variables relating to the public health memorandum: the composition of the memorandum (memoranda solely for their own municipality or written together with other municipalities), and the type of the memorandum (memorandum solely about public health or combined with other policy domains). Thirdly, we defined six questions concerning the decision-making process: (1) Who took the initiative to start

the memorandum (categorical)?; (2) Did they receive support in the decision making process from the municipal Registry office (dichotomous)?; (3-6) four questions asking who took part in the policy preparations (city council members, local health care providers, local client representatives, colleague officials from related policy domains such as welfare or youth - all dichotomous). For the content of the epidemiological research information, we asked which geographical area was covered, and, from a list of 18 topics, which public health topics were described, (for example, death rates, indicators for quality of life, presence of chronic diseases, lifestyle-related risk factors, social risk factors). The frequencies of all these associated factors are shown in Table 7.1.

For the measurement of the actual interaction between the RHS epidemiologists and the local health officials, we used three questions based on the ‘blurring the boundaries’ model of de Leeuw et al.¹⁰ In this model, interaction is defined as actions undertaken by policy makers during the research process, and conversely by researchers during the policy process, in order to influence these processes. Therefore, we asked whether (1) the local officials were involved in the research process at any given moment (dichotomous); and (2) whether RHS officials were involved in the policy process. Three answers were possible for this question: epidemiologists (with or without other RHS professionals), only other RHS professionals, or the RHS professionals were not involved at all. Additionally we asked if an oral presentation about the epidemiological research had been given by the RHS during policy preparation (Table 7.2).

Table 7.2. Associated factors of research utilisation for interaction (n=155)

Variables	Response categories	%
Interaction		
Involved in the research process at any given moment	Yes	38.1
	No	61.9
Involvement in policy process by RHS	RHS professionals including epidemiologists	52.3
	RHS professionals excluding epidemiologists	40.0
	No RHS professionals involved	7.7
Epidemiological health reports presented during policy development	Yes	44.5
	No	55.5

For the measurement of possible barriers to research utilisation within the interaction, we operationalized the barriers (in each case, noting which of the four domains is applicable) (Table 7.3). Questions for measuring barriers in the expectation domain asked whether the epidemiological research was (1) considered relevant for local health policy; (2) sufficiently related to other policy domains; (3) current; and (4)

Table 7.3. Associated factors of research utilisation for barriers (n=155)

	Totally agree	Agree	Neither agree nor disagree	Disagree	Totally disagree
	%	%	%	%	%
Expectations					
Relevant for local health policy	5.2	47.1	41.3	5.2	1.3
Sufficiently related to other policy domains	17.4	28.4	33.5	15.5	5.2
Content is sufficiently current	2.6	34.8	41.9	17.4	3.2
Report is presented to me on time	5.2	37.4	50.3	5.8	1.3
Transfer					
Satisfied with the structure of the report	32.3	38.1	22.6	5.2	1.9
Report was easy to understand	46.5	34.2	14.8	3.9	0.6
Sufficient regional information	27.1	32.9	14.2	18.7	7.1
Sufficient local information	43.2	39.4	15.5	1.3	0.6
Acceptance					
RHS is perceived as a credible source	51.6	32.9	11.6	1.3	2.6
RHS made the basis of the epidemiological finding clear	40.6	38.1	16.8	1.9	2.6
Suited/Fitted well with personal belief system regarding local health policy	25.2	34.2	32.9	6.5	1.3
Interpretation					
Suited the contemporary political vision on public health within the municipality	22.6	30.3	37.4	7.1	2.6

on time. Questions for measuring barriers in the transfer domain asked whether (1) the respondent was satisfied with the structure of the report; (2) the respondent was satisfied with the accessibility of the report regarding intelligibility; (3) the respondent thought the report contained enough regional information; (4) the respondent thought the report contained enough local information; (5) there had been media attention due to the epidemiological report (Table 7.4); and (6) the respondent had additional research information from other sources. Questions for measuring barriers in the acceptance domain asked whether (1) the respondent trusted the RHS as a credible source for epidemiological research; (2) the RHS made clear what the epidemiological research was based on; and (3) the epidemiological report suited the respondent's personal belief system regarding local health policy. Finally, questions for measuring the barriers in the interpretation domain asked whether the content of the epidemiological report was in line with the current political vision on public health within the municipality.

Table 7.4. Additional associated factor of research utilisation for media (n=155)

Variables	Response categories	%
Transfer		
Media attention	Mainly positive publications	16.1
	Mainly negative publications	1.3
	Mainly neutral publications	16.8
	Variable publications	8.4
	No publications	9.0
	Not familiar with any publications	48.4

All barrier questions, except for media and the use of other research sources, had the following 5-point Likert-type response scale: totally agree, agree, neither agree nor disagree, disagree, totally disagree.

7.2.4 Statistical analysis

We used linear multiple regression analyses to determine which independent variables were associated with each type of use of epidemiological research (instrumental, conceptual, symbolic), in order to take advantage of the continuous response scales. For each linear regression model, we first constructed a scale for research use if appropriate, based on all the responses to the questions involved. Secondly, we made a selection of independent variables to be included in the model, based on their univariate associations with research use and their mutual associations. All analyses were carried out with SPSS Statistics 17.0.

Construction of scales for research use

For each type of research use, the internal reliability coefficient of the corresponding questions was calculated, using Cronbach's alpha.¹⁸ When the value of Cronbach's alpha exceeded a score of 0.60, we concluded that the questions reliably measured the same concept, and combined the responses of the questions into one sum score.¹⁹ If Cronbach's alpha was 0.60 or lower, we chose the one question that, in our opinion, best covered the concept for the Dutch situation.

Selection of associated variables

Since the research population is rather small, only a limited number of independent variables can be included in the regression models.¹⁸ For each regression model, the unconditional relations of the independent variables with research use were tested using one-way Anova. The independent variables with a significant test result ($p < 0.05$) were further tested for their mutual correlations in order to avoid multicollinearity. Depending on the nature of the variables (categorical or continuous) we used a Chi-square test, a one-way Anova, or a Pearson correlations coefficient. Correlated

variables (based on $p < 0.05$) were then combined into one variable. No correlations between continuous and categorical variables occurred. Additionally, dummy coding was used to convert the categorical variables into dichotomous dummy variables.

7.3 Results

7.3.1 Response

In total, 284 local health officials consented to collaborate in the study, a response of 84% of all health officials approached, covering 64% of all Dutch municipalities. Officials who did not want to participate, were either not interested, had no time, or sometimes indicated a poor relationship with their RHS. After the follow-up email invitation, 224 local health officials started the internet questionnaire, eventually leading to 173 completed questionnaires. (This is 51% of all local officials approached, and covers 39% of all Dutch municipalities.)

We then excluded 17 respondents who acknowledged that, although they were involved in the policy process and could reproduce information on this, they did not know the epidemiological reports, and therefore were not able to give their opinions on interaction and barriers to research use. Mostly, these officials had been working in their present function for less than three months. As a result of their exclusion, 155 questionnaires were included in our analysis, covering 35% of all Dutch municipalities. Population size is a factor that influences the development of local health policy, and is related to the capacity of civil servants assigned.²⁰ If we compare the distribution of population size of the municipalities in the study with all Dutch municipalities we see that there were only minor differences in the distribution of population size. Municipalities in our study were slightly more often medium sized, and less often small.

7.3.2 Descriptive statistics of the associated factors

Tables 7.1 to 7.4 show descriptive results of the all associated variables. The municipalities in which the 155 respondents worked varied in population size and urban nature. The experience of the respondents in their current position was diverse. Most of them (34%) had had five to ten years of experience. Almost all respondents had served in a variety of policy areas besides public health. Social services, youth, and the elderly were mentioned most frequently. Most of the respondents held a Bachelors degree (41%) or a Masters degree (47%). Furthermore, approximately one third of the respondents had no personal experience with research. The others had experience of qualitative research, quantitative research, or both.

Table 7.5. Frequency distribution of instrumental, conceptual, and symbolic use by Dutch local health officials

	Not applicable in my situation	Minimal applicable in my situation	Moderately applicable in my situation	Applicable in my situation	Strongly applicable in my situation	Total	Mean	SD
Instrumental use								
I have recently started new concrete policy activities within my municipality	43%	19%	21%	11%	6%	100%	2.17	1.25
I have stopped certain policy activities within my municipality	91%	3%	8%	X	X	100%	1.15	0.49
Conceptual use								
I have a better understanding of the health problems and their causes within the RHS region	24%	16%	22%	31%	7%	100%	2.80	1.30
I have a better understanding of the health problems and their causes within my municipality	22%	18%	28%	26%	6%	100%	2.77	1.23
I have developed new ideas for the long term for projects or policies within my municipality or in collaboration with other organisations	22%	17%	28%	26%	6%	100%	2.77	1.24
Sum score for conceptual use							9.0	2.99
Symbolic use								
I have been able to discuss existing policies and activities within my municipality	46%	18%	22%	10%	5%	100%	2.10	1.22
I have been able to place my personal ideas and preferences on the policy agenda	38%	19%	21%	17%	6%	100%	2.34	1.29
Sum score for symbolic use							4.7	2.17

X: This response category was not mentioned

7.3.3 The use of epidemiological research in local health policy development

Table 7.5 shows that conceptual use was the most common type of research use in the development of local health policy. The questions for conceptual use had the highest mean scores (2.80, 2.77, and 2.77). Instrumental use was the least common type of research use.

For instrumental use, Cronbach's alpha for the two sub questions was too low ($\alpha=0.230$) to combine them into one variable. For further regression analysis, we therefore decided to use the first question ("I have recently started new concrete policy activities within my municipality") as dependent variable, because, in our opinion, it covered the concept of instrumental use sufficiently well, and had enough respondents in each category.

The internal reliability of the three sub-questions for conceptual use was high enough (Cronbach's $\alpha=0.841$) to sum their scores into one score. The mean sum score for conceptual use was 9.0 (SD=2.99).

Regarding symbolic use, the value of the internal reliability was also sufficient to combine the two sub-questions (Cronbach's $\alpha=0.66$). The mean sum score for symbolic use was 4.7 (SD=2.17).

7.3.4 Results of the linear regression models

Table 7.6 shows the results of the linear regression models for each of three types of research use. Four independent variables were significantly and unconditionally related to *instrumental use*, as tested with one-way Anova: 1) experience with research ($F=3.70$, $df=3$, $p<0.01$), 2) involvement of the local official with the research process ($F=14.04$, $df=1$, $p<0.01$), 3) involvement of the RHS with the policy process ($F=3.37$, $df=2$, $p<0.05$), and 4) media attention ($F=2.47$, $df=5$, $p<0.05$). Chi-square tests between these associated factors showed that they were not interrelated. Therefore, all four factors were included in a linear regression analysis. Table 7.6 presents the resulting model, which explained a significant amount of variance in instrumental research use (adjusted $R^2=0.17$, $F=3.93$, $p<0.01$). The model shows that the involvement of local officials was significantly related to more instrumental use, whereas unawareness of local officials of a media publication about the epidemiological report was significantly related to less instrumental use.

Fourteen associated factors were significantly related to *conceptual use*: all three actual interaction variables and eleven of the thirteen barrier variables. Only media attention and satisfaction with the local information were not statistically significantly related

Table 7.6. Regression models on instrumental, conceptual, and symbolic use by Dutch public health officials (n=155)

Typology of research use	B	β	t	p
<i>Instrumental use</i>				
(constant)	2.245		4.391	0.000
Personal experience with research				
no personal experience with research (ref category)				
mainly experience with qualitative research	0.405	0.131	1.534	0.127
mainly experience with quantitative research	-0.530	-0.139	-1.705	0.090
experience with both types of research	0.376	0.140	1.663	0.099
Involvement of the local health official in the research process				
No local officials involved in the research process (ref category)				
Local officials involved in the research process at any given moment	0.626	0.242	3.167	0.002*
Involvement of the RHS in the policy process				
No involvement of the RHS with the policy process (ref category)				
RHS professionals including epidemiologists involved in policy process	-0.158	-0.063	-0.435	0.664
RHS professionals excluding epidemiologists involved in policy process	-0.569	-0.223	-1.562	0.121
Media attention				
no media publications (ref category)				
mainly positive media publications	-0.631	-0.185	-1.630	0.105
mainly negative media publications	0.962	0.087	1.064	0.289
mainly neutral media publications	-0.537	-0.160	-1.402	0.163
variable media publications	-0.571	-0.126	-1.276	0.204
no familiarity with any media publications	-0.817	-0.326	-2.438	0.016*
<i>Conceptual use</i>				
(constant)	10.554		7.853	0.000
Involvement of the local health official in the research process				
No local officials involved in the research process (ref category)				
Local officials Involved in the research process at any given moment	0.534	0.087	1.206	0.230
Involvement of the RHS in the policy process				
no involvement of RHS and no presentation was given (ref category)				
epidemiologist involved in the policy process and gave a presentation	2.839	0.422	3.266	0.001*

Typology of research use	B	β	t	p
epidemiologist involved in the policy process but did not give a presentation	1.087	0.158	1.247	0.214
other RHS professionals were involved and gave a presentation	1.612	0.198	1.731	0.086
other RHS professionals were involved, and no presentation was given	1.004	0.143	1.146	0.254
Presence of barriers	-0.152	-0.350	-4.815	0.000*
Symbolic use				
(constant)	3.545		6.849	0.000
Involvement of the local health official in the research process				
No local officials involved in the research process (ref category)				
Local officials Involved in the research process at any given moment	0.871	0.354	2.464	0.015*

*significant with $p < 0,05$

to conceptual use. The tests for mutual correlation showed that involvement of the RHS in the policy process was related to an oral presentation on the epidemiological report. Moreover, all barrier variables were interrelated. The results of these tests can be obtained from the authors on request. For the linear regression model, we created a new categorical variable for actual interaction, with five response categories: 1) an epidemiologist was involved in the policy process and gave a presentation, 2) an epidemiologist was involved in the policy process but did not give a presentation, 3) other RHS professionals were involved and gave a presentation, 4) other RHS professionals were involved, but no presentation was given, 5) the RHS was not involved in the policy process at all (see Table 7.6). Based on the internal consistency of the eleven selected barrier variables (Cronbach's $\alpha = 0.88$), we concluded that these questions reliably measured the same concept. Therefore, we combined the responses of all eleven questions into one sum score for interaction barriers, which varied between 11 (no barriers present) and 55 (all barriers present), and had a mean of 24.96 (SD 6.87). Table 7.6 presents the resulting model for conceptual use, which significantly explained the variance (Adjusted $R^2 = 0.227$, $F = 8.541$, $p < 0.01$). There was a relation between, on the one hand, the involvement of, and a presentation by, an epidemiologist in the policy process and, on the other hand, a higher sum score for conceptual use of the research. However, as mentioned by the local officials, conceptual use decreased with a higher sum score for barriers to interaction.

As for *symbolic use*, only one associated factor was significantly related: involvement of the local official during the research process ($F = 6.071$, $df = 1$, $p < 0.05$). Table 7.6 presents the resulting model for symbolic use, which had a low explanation of

the variation (Adjusted $R^2=0.032$, $F=6.071$, $p=0.015$). It showed that interaction during the research process increased symbolic use, as mentioned by the local health officials.

7.4 Discussion

The aim of this paper was to quantify the nature and extent of epidemiological research use in the Netherlands during the development of municipal public health policy, and the factors that determine this use. We conducted a survey among local health officials because, in earlier case studies, it was shown that they played a key role in the development of local health policy.⁴

This study provides very specific insight into this specific research population of Dutch local health officials. Conceptual use was more common than instrumental and symbolic use. This means that the knowledge and insights of the epidemiological reports are not translated into concrete actions nor are they used in policy debates. We think that the greater amount of conceptual use can possibly be explained by the diversity of other policy actors playing in the field of local health policy. The local official has to take account of the knowledge, opinions, and interests of these other stakeholders, and is therefore not able to directly transform the recommendations of the epidemiological report into action. The greater amount of conceptual use was also found by Amara et al., although they conducted their survey among professionals and managers in government agencies in Canada.¹⁶ In our study, the level of conceptual use, as well as that of instrumental and symbolic use, is higher than in the study of Amara et al..¹⁶ One explanation for this is the difference in research population in a specific Dutch local policy area. Another explanation could be that we operationalized the concept of research use using different and multiple questions.

Instrumental use can be explained by preliminary interaction between researcher and policy makers during the research process, in other words, the involvement of local officials during the design of the research and during the publication phase. However, it is harder to understand a lack of awareness by local officials of a media publication on the epidemiological report as a factor for less instrumental use. Because of the cross-sectional design of this study, this association could be the other way round. If a person does not see many possibilities of using an epidemiological report instrumentally (“I do not have to do anything with it”), he might have less interest in media attention.

Our results showed that the presentation of the health report was associated with greater conceptual use. This would imply that more value is given to the epidemiological

knowledge when presented by an epidemiologist than when presented by another employee of the RHS. This can probably be explained by the perceived authority of an epidemiologist. In the theoretical framework, we distinguish four domains of barriers to research use. This study shows that most of these barriers are interrelated, so we are not able to assess which barriers are more important.

For symbolic use, the only factor was the preliminary interaction, which can explain only limited variance. This means that there must be other factors than those included in our study that explain variance. On the one hand this outcome can be explained by the fact that, during the policy process, local officials do not always take part in the policy discussion but function as process manager. It can be expected that if we had asked administrators, politicians, or client representatives, the symbolic use would have been greater. On the other hand, we may have missed other factors such as the political composition of the municipal council or the political background of the local administrator.

The response to the study was 50%, covering 35% of all Dutch municipalities. A study by Van Dijk showed that the development of local health policy differs between municipalities of different size and urban nature.²⁰ This is related to the time that the local official has available for the specific subject. However we showed that the distribution of the sizes of the municipalities in the research population corresponds with the national distribution in the Netherlands. Therefore we believe the response is sufficient to represent all Dutch municipalities.

7.4.1 Reflections on methodology

There are some methodological limitations of this study that we have to discuss. We recruited the local health official by means of the RHS. This was because there was no central list of local health officials in the Netherlands, and people regularly change jobs in the policy domain. We believed that the RHS was the best possible source for the most recent list. However, this use of the RHS was a potential cause of bias, because those organisations that were willing to cooperate with our study possibly put more emphasis on research utilisation. Another form of selection bias could have occurred because officials with a negative attitude towards the RHS might have been less willing to cooperate in our study. Both types of selection bias can cause an overestimation of research utilisation by the group of local health officials. This could have the consequence that the regression models we produced are valid only if there is a neutral or positive relationship between the local health officials and the employees of the RHS.

We chose a specific analysis strategy for the construction of the regression models. This strategy could have caused us to miss variables not directly related to research use but that have an indirect influence by interacting with other variables. However, this is difficult to determine because there is not much theoretical knowledge of these types of variables.

The ladder of research utilisation is the impact measurement most mentioned in international quantitative studies.^{7, 14-17} Only Amara et al. used the typology approach, and this study seems our only comparison option.¹⁶ However, because of our concentration on the details of health policy-making in the Dutch local context, our research results are moderately comparable (for the outcome, for the dependent variables, and even for the associated variables). The different operationalization of the associated factors is especially problematic. This brings us to another issue - the need for the validation of instruments. It should be possible to reach international consensus on how research utilisation should be measured, but further elaboration of these concepts is necessary. This could be achieved using, for example, the method of concept mapping by various international experts on research utilisation. Consensus is also needed on presumed associated factors. However we acknowledge that it would be more difficult to reach international agreement on this because of the differences in policy context and processes. We also question how precise the measurements can be. For example, Ouimet et al. suggest that interaction activities can best be measured on an absolute scale.¹⁵ In our earlier municipal case studies we found that it is sometimes difficult for people to remember this issue is because of the longterm ongoing development of both research and policy.⁴ Weiss questions the necessity for quantitative research in the scientific field of research utilisation to have added value.²¹ Given the complexity of the policy context, our current study has led us to acknowledge the difficulties, and there is still a long way to go.

As we described earlier, the regression models developed fit a specific policy context, and do not cover the dynamics of the entire policy network and policy process. However, if certain explanations of research utilisation that are found in qualitative studies, for example, are true, we believe that other methodological approaches will provide additional information and parts of the puzzle.²²⁻²⁷ Quantitative studies are necessary to underpin qualitative findings and to underline the importance of the possible implications.

7.4.2 Reflections on the theoretical framework

There are many conceptual frameworks circulating in the international scientific area of research utilisation, of which our theoretical framework is one.^{8-11, 15} On some issues, our framework overlaps with others. For example, the independent variables

of Landry et al. and Amara et al. relating to adaptation of the products (publications) mention issues (comprehension, credibility of the source, capacity to verify the quality of the results, appeal of the reports) that can be found in our list of barriers.^{16, 28} But there is also overlap with Ouimet's model where social interaction corresponds with our interaction questions, and where recognition of the values correspond with our barriers.¹⁵

One important feature of our framework did not work out well: the classification of the barriers into four domains. The interrelations between these barriers could have multiple reasons. First of all, it is possible that, in the empirical setting, from the perspective of local officials, the meanings of the theoretical notions are hard to distinguish in practice. On the other hand, the way we operationalized the barriers and the sequence in which we questioned the respondents, could have influenced their answers.

This study was limited to local health officials. According to our theoretical framework, there are many more stakeholders in the local policy process who could possibly use the epidemiological reports. This study provides no answer to this issue, so it becomes interesting to gain insight into these other groups in order to study research use in a whole policy network. However, to do this in a quantitative way will cost considerable research effort if it is to achieve a sufficient number of respondents.

7.4.3 Concluding remarks

This study shows that conceptual use is more common among Dutch local health officials than other types of use. Probably this is precisely why the concept of evidence-based policy, which, on many occasions, suggests instrumental use, should be replaced by evidence-informed policy, which is related to conceptual use. Conceptual use itself was associated with a presentation given by the epidemiologist during the policy process, the presence of obstructions regarding the report's accessibility, and the local official's personal belief systems and interests. Furthermore, the results show that instrumental and symbolic use increased with the involvement of local officials in the research process.

The outcomes suggest that RHS epidemiologists can use different strategies to improve research utilisation. However, they do have to ask themselves beforehand what type of research utilisation they want to achieve - should it be instrumental, conceptual, or symbolic. Either way, 'blurring the boundaries' and the enhancement of interfaces between epidemiologists and local health officials will create better possibilities for optimizing research use.

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Chapter 8

Health inequalities in the Netherlands: the role of Type D (distressed) personality

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Abstract

Background. In the Netherlands, as in many European countries, inequalities in health exist between people with a high and a low socioeconomic status (SES). From the perspective of the ‘indirect selection hypothesis’, this study was designed to expand our understanding of the role of Type D personality as an explanation of health inequalities.

Methods. Data came from two cross-sectional Dutch surveys among the general population (aged between 19 and 64 years, response 53.7%, n=12,090). We analyzed the relative risks of low SES, assessed using education and income, and Type D personality, assessed using the DS14, for different outcomes regarding lifestyle-related risk factors and health, using multivariate Generalized Linear Models.

Results. Results showed that low SES was significantly associated with Type D personality (OR=1.7 for both low education and low income). Moreover, the relative risks of low SES and Type D personality were significantly elevated for most adverse health outcomes, unconditionally as well as conditionally.

Conclusion. The cross-sectional design hinders the making of definite etiological inferences. Nevertheless, our findings suggest that Type D personality does not explain the socioeconomic health inequalities, but is more an additional risk factor. Prevention in low SES populations may have more effect when it takes into account that persons with a low SES in combination with a Type D personality are the most at risk for adverse health outcomes.

8.1 Introduction

In the Netherlands, as in many other European countries, inequalities in health exist between those of high and those of low socioeconomic status (SES).¹ Life expectancy between the lowest and highest educated groups differs by 7.3 years for men and 6.4 years for women. Differences in healthy life expectancy are even larger, namely 19.2 years for men and 20.6 years for women.² Differences in (healthy) life expectancy between the lowest and highest income quintiles show the same pattern.³ Moreover, a lower SES is associated with a higher prevalence of most chronic diseases, including mental disorders, self-assessed poor health, and lifestyle-related risk factors, such as current tobacco smoking and obesity.^{1, 4, 5} Despite many efforts to reduce socioeconomic health inequalities in the Netherlands, most inequalities in health and lifestyle between educational levels remained unchanged.^{4,6}

Besides artefacts, such as measurement error, two major categories of explanations for socioeconomic health inequalities have been proposed: causation and selection. Causation relates to causal mechanisms through which SES and social relationships potentially affect health status and the risk of dying. Selection or reverse causation refers to a set of pathways where unhealthy individuals may reduce their social position or become socially more isolated as a consequence of their inferior health status.⁷ For selection, a distinction is made between direct selection, where a person's health status affects their social status, and indirect selection, meaning that some personal attributes, such as cognitive ability, coping styles, personality, and fitness, influence both the SES and the health of a person.⁷⁻¹⁰ Several studies have shown that various personality traits partly explain the social gradients in mortality, health behaviour, and/or depression symptoms.¹¹⁻¹⁵ None of these studies, however, studied the role of the *distressed* or Type D personality.

In recent years, Type D personality was introduced in the cardiovascular literature as a valid and clinically relevant construct that has been associated with a three-fold increased risk of poor prognosis and morbidity in cardiac patients.¹⁶ Type D personality refers to a general propensity to psychological distress that is defined by the combination of negative affectivity and social inhibition.¹⁷ People who score high on negative affectivity have the tendency to experience negative emotions, while people who score high on social inhibition have the tendency to inhibit self-expression because of fear of disapproval by others. Persons with high levels on both personality traits are classified as having a Type D personality.¹⁷

Given the clinical relevance of Type D personality in cardiovascular populations, it might also be of interest to assess the relevance of the Type D personality for health

risks and outcomes in the general population.¹⁸ Following the ‘indirect selection hypothesis’, it was hypothesized that Type D personality would lead to both a lower SES and poorer health, thereby explaining (part of) the relationship between a lower SES and poorer health. This hypothesis was partly supported in a recent review of Type D studies in the general population, concluding that Type D personality is a vulnerability factor that may affect not only people with medical conditions, but also the health status of individuals from the general population.¹⁹ However, the authors did not take SES into consideration. Therefore, the present study was designed to expand our understanding of the role of Type D personality as an explanation of health inequalities, with the aim of quantifying the contribution of Type D personality to the association between SES and different lifestyle-related risk factors and health.

8.2 Methods

8.2.1 Study design

This study used cross-sectional data from two surveys among the general population, collected by two Regional Health Services (RHSs) in the Netherlands: one survey in the region West-Brabant (675,500 inhabitants at the time of the survey), and one survey in the municipality ‘s-Hertogenbosch, the capital city of the province Brabant (134,000 inhabitants at the time of the survey). RHSs in the Netherlands are authorised to sample the Municipal Basic Administrations (MBA; population register) for health surveys. For these two surveys, inhabitants aged between 19 and 64 years were randomly sampled from the MBA, stratified by municipality. The surveys were approved by the board of directors of the RHSs involved, and exempted from ethical approval. Participants received a postal invitation to consent to participation by filling out the enclosed questionnaire, either on paper or, with a personal logon code, through the internet. The invitation also declared that the questionnaires would be processed anonymously. Data collection took place between October and December 2005. The initial sample for these two surveys consisted of 15,025 subjects, of whom 56.0% participated (n=8,414) with a maximum of two reminders. In addition, 7,470 inhabitants were sampled non-representatively, for example in some deprived neighbourhoods or in some municipalities, with a response of 49.2% (n=3,676).

8.2.2 Main variables

Socioeconomic status. The dataset contained two indicators for SES: education and income. We defined low education as the case where the highest completed education is none or primary school, and low income as a net monthly household income below the Dutch standard (at the time of the study more than €1,750.-).

Type D personality. The dataset contained the DS14, a short, easy-to-use, and valid construct, consisting of 14 questions about personality, with a 5-point Likert response scale ranging from 0 (false) to 4 (true). The DS14 comprises two subscales: the Negative Affectivity (NA) subscale and the Social Inhibition (SI) subscale. A pre-determined cut-off of ≥ 10 on both subscales was used to classify participants as Type D personality (i.e. NA of ≥ 10 and SI of ≥ 10).¹⁷ In the current dataset, the DS14 showed excellent internal consistency, with Cronbach's $\alpha = 0.87$ for both subscales.

Lifestyle-related risk factors and health status. The dataset contained several variables as determinants of health (person-related factors, lifestyle, social and physical environment, prevention and care) and health status. The choice of the indicators used in this study was mainly based on the burden of disease in the Dutch population, leading to increased attention in Dutch health policy. For lifestyle-related risk factors, three indicators were used: 1) current tobacco smoking, 2) unsafe alcohol use, defined as the consumption of more than twenty-one glasses of alcoholic drink weekly for men and more than fourteen glasses of alcoholic drink weekly for women, and 3) obesity, defined as a body mass index of 30 or more.²⁰ For adverse health outcomes, five indicators were used: 1) self-assessed poor health, defined as health that has been self-assessed as fair or poor, (based on the first question of the SF-36), 2) diagnosed by a physician as having one or more chronic illnesses on a list of eighteen, 3) diagnosed by a physician as having diabetes mellitus, 4) diagnosed by a physician as having cardiovascular disease (based on three questions: cerebrovascular accident or transient ischemic attack, myocardial infarct, and/or other severe heart disorder, such as heart failure or angina pectoris), and 5) high risk of an anxiety disorder or depression (score of 30 or higher on the Kessler Psychological Distress Scale).^{21, 22} The last indicator was available only for the municipality of 's-Hertogenbosch.

8.2.3 Analysis

Under the 'indirect selection hypothesis', Type D personality would be related to low SES as well as to (determinants of) health. Moreover, under that hypothesis, an association between low SES and (determinants of) health would be (partly) explained by Type D personality. Yet it should be noted that, because of the cross-sectional nature of our data, the mechanisms of 'indirect selection' and 'causation' cannot be distinguished. The abovementioned associations could also occur in the case of causation when a lower SES would be associated with both a type D personality and poorer health, while at the same time type D personality would be related to poorer health. The following associations were assessed and quantified from the perspective of 'indirect selection', all adjusted for age, sex, and municipality:

1. the association between Type D personality and a low SES;
2. the association between Type D personality and (determinants of) health;

3. the association between low SES and (determinants of) health;
4. the association between low SES and (determinants of) health, conditional on Type D personality; and
5. modification of the effect of low SES on (determinants of) health by Type D personality (interaction).

For the first analysis, we computed the odds ratios with 95% confidence intervals for Type D personality as a function of low SES, using logistic regression analysis. For the second, third, and fourth analyses, we computed relative risks with 95% confidence intervals for Type D personality (2) and low SES (3 and 4) as risk factors for (determinants) of health, using multivariate Generalized Linear Models. In addition, this relative risk for low SES was adjusted for Type D personality in the fourth analysis. In all these analyses, each reference category contained all persons without the studied characteristic. For the fifth analysis, a new variable was constructed for all four possible response combinations of Type D personality and low SES. Using as the reference category the category where both Type D personality and low SES were absent, we computed relative risks with 95% confidence intervals for the other three combinations of Type D personality and low SES as risk factors for (determinants) of health, using multivariate Generalized Linear Models. We computed the Relative Excess Risk due to Interaction (RERI) in order to assess and quantify interaction on an additive scale, as suggested by Rothman.²³ The 95% confidence intervals for the RERIs were computed with a bootstrapping procedure, with a sample size of 10,000, using Knol's bootstrapping script, adjusted for R-Plus.²⁴ The covariates sex, age, and municipality were taken into consideration for all associations.

8.3 Results

Table 8.1 presents the prevalence of the main variables in both initial samples ($n=8,414$), after weighting for sex, age, and municipality, according to the demographics of the populations. Type D personality was found in one fifth of both populations. Social inhibition occurred more often than negative affectivity, especially in the West-Brabant region. Low education (highest completed education none or primary school) was less prevalent (6.8-7.5%) than a low income (income below Dutch standard; 38.3-41.5%).

Table 8.1. Weighted prevalence of the main variables by region

Characteristic	Region	
	West-Brabant (n=7,764) %	's-Hertogenbosch (n=650) %
Sex		
Male	50.5	50.3
Age		
19-34 years	30.5	33.6
35-49 years	37.7	37.7
50-64 years	31.8	28.6
Type D personality (DS-14)		
Negative affectivity (NA \geq 10)	31.7	31.8
Social inhibition (SI \geq 10)	40.5	34.5
Type D personality (NA \geq 10 and SI \geq 10)	20.4	19.1
Highest completed education		
None or primary school	7.5	6.8
Lower general secondary or lower vocational school	35.2	30.7
Higher general secondary school, intermediate vocational school, or pre-university	33.4	28.1
Higher vocational (Bachelor) or university (Master)	23.9	34.3
Net monthly household income		
\leq € 850	8.9	9.6
€851 - €1,150	8.4	11.8
€1,150 - €1,750	21.0	20.1
€1,751 - €3,050	28.2	25.9
€3,051 - €3,500	6.7	9.1
\geq €3,501	8.4	9.7
Doesn't want to tell	18.4	13.7
Tobacco smoking		
Current	31.3	34.7
Former	31.5	28.0
Never	37.2	37.3
Alcohol consumption		
Unsafe(a)	12.1	12.2
Safe	66.1	66.2
Abstains	14.6	13.7
Yes, amount unknown	7.2	7.9

Characteristic	Region	
	West-Brabant (n=7,764)	's-Hertogenbosch (n=650)
	%	%
Body Mass Index		
<30 kg/m ²	89.2	88.6
≥30 kg/m ²	10.8	11.4
Self-assessed health		
Excellent	6.8	8.2
Very good	20.7	22.7
Good	59.8	55.3
Fair	11.2	12.3
Poor	1.5	1.5
At least one chronic disease, diagnosed by physician(b)		
Yes	40.2	40.7
No	59.8	59.3
Diabetes		
Yes, diagnosed by physician	3.4	3.4
No / not diagnosed by physician	96.6	96.6
Cardiovascular disease(c)		
Yes, diagnosed by physician	2.5	2.9
No / not diagnosed by physician	97.5	97.1
Risk of anxiety disorder or depression		
Little or no risk (K10 score 10-15)	-	66.5
Moderate risk (K10 score 16-29)	-	28.6
High risk (K10 score 30-50)	-	4.9

(a) >21 glasses of alcoholic drink weekly for men; >14 glasses of alcoholic drink weekly for women

(b) during the last 12 months, from among the following 18 chronic diseases: 1) diabetes; 2) stroke, cerebrovascular accident or transient ischemic attack; 3) myocardial infarction; 4) other severe heart disorder, such as heart failure or angina pectoris; 5) cancer; 6) migraine or regular severe headaches; 7) high blood pressure; 8) constriction of the blood vessels in stomach or legs (not varicose veins); 9) asthma, chronic bronchitis, pulmonary emphysema, or COPD; 10) severe or persistent intestinal disorders, for more than 3 months; 11) psoriasis; 12) chronic eczema; 13) incontinence; 14) severe or persistent back disorders (including slipped disc); 15) articular degeneration of hips or knees; 16) chronic arthritis (rheumatoid arthritis, chronic rheumatism); 17) other severe or persistent disorder of neck or shoulder; 18) other severe or persistent disorder of elbow, wrist, or hand.

(c) based on three questions: (1) stroke, cerebrovascular accident, or transient ischemic attack, (2) myocardial infarction, (3) other severe heart disorder, such as heart failure of angina pectoris.

Examination of the occurrence of Type D personality over the categories of SES and (determinants of) health showed that the prevalence of Type D personality increased with decreasing education and income (Table 8.2). With regard to lifestyle-related risk

factors, the most striking finding was the highest prevalence of Type D personality in the alcohol abstainers. As to health, there seemed to be a dose-response relationship between, on the one hand, self-assessed health and the risk of an anxiety disorder or depression, and, on the other hand, the prevalence of Type D personality: the poorer the self-assessed health or the higher the risk of an anxiety disorder or depression, the higher the prevalence of Type D personality (Table 8.2).

Table 8.2. Weighted prevalence of Type D personality by SES, (determinants of) health, and region

Characteristic	Region	
	West-Brabant % Type D	's-Hertogenbosch % Type D
Highest completed education		
None or primary school	31.0	34.1
Lower general secondary or lower vocational school	23.6	20.3
Higher general secondary school, intermediate vocational school, or pre-university	19.0	20.8
Higher vocational (Bachelor) or university (Master)	14.4	14.1
Net monthly household income		
≤ € 850	32.8	23,3
€851 - €1,150	30.1	24.0
€1,150 - €1,750	21.8	21.4
€1,751 - €3,050	17.6	21.6
€3,051 - €3,500	10.9	12.3
≥ €3,501	13.3	11.5
Doesn't want to tell	19.3	14.0
Tobacco smoking		
Current	23.9	17.9
Former	19.1	21.8
Never	18.7	17.9
Alcohol consumption		
Unsafe(a)	16.3	8.9
Safe	19.1	18.2
Abstains	29.3	32.6
Yes, amount unknown	21.7	18.4
Body Mass Index		
<30 kg/m ²	19.9	18.0
≥30 kg/m ²	24.1	26.8

Characteristic	Region	
	West-Brabant	's-Hertogenbosch
	% Type D	% Type D
Self-assessed health		
Excellent	5.4	3.8
Very good	9.7	13.0
Good	20.5	17.8
Fair	44.0	43.0
Poor	55.7	50.0
At least one chronic disease(b)		
Yes, diagnosed by physician	23.4	21.9
No / not diagnosed by physician	17.6	15.6
Diabetes		
Yes, diagnosed by physician	19.7	18.2
No / not diagnosed by physician	20.2	18.7
Cardiovascular disease(c)		
Yes, diagnosed by physician	23.4	16.7
No / not diagnosed by physician	20.2	18.5
Risk of anxiety disorder or depression		
Little or no risk (K10 score 10-15)		7.8
Moderate risk (K10 score 16-29)		37.7
High risk (K10 score 30-50)		64.5

(a) >21 glasses alcoholic drink weekly for men; >14 glasses alcoholic drink weekly for women

(b) during the last 12 months, from among the following 18 chronic diseases: 1) diabetes; 2) stroke, cerebrovascular accident or transient ischemic attack; 3) myocardial infarction; 4) other severe heart disorder, such as heart failure or angina pectoris; 5) cancer; 6) migraine or regular severe headaches; 7) high blood pressure; 8) constriction of the blood vessels in stomach or legs (not varicose veins); 9) asthma, chronic bronchitis, pulmonary emphysema, or COPD; 10) severe or persistent intestinal disorders, for than 3 months; 11) psoriasis; 12) chronic eczema; 13) incontinence; 14) severe or persistent back disorders (including slipped disc); 15) articular degeneration of hips or knees; 16) chronic arthritis (rheumatoid arthritis, chronic rheumatism); 17) other severe or persistent disorder of neck or shoulder; 18) other severe or persistent disorder of elbow, wrist, or hand.

(c) based on three questions: (1) stroke, cerebrovascular accident, or transient ischemic attack, (2) myocardial infarction, (3) other severe heart disorder, such as heart failure of angina pectoris.

Using the total dataset (n=12,090), adjusted for sex, age, and municipality, Type D personality was significantly associated with both indicators of a low SES: low education (OR_{adj}=1.7, 95%CI: 1.5-2.0) and low income (OR_{adj}=1.7, 95%CI: 1.6-1.9) (not tabulated).

Persons with a Type D personality had a small but significantly higher risk of current tobacco smoking (RR_{adj}=1.1, 95% CI: 1.1-1.2), but not of unsafe alcohol use and

obesity (Table 8.3). Furthermore, Type D personalities were at a higher risk of self-assessed poor health (RR_{adj}=2.8; 95% CI=2.6-3.1), chronic disease (RR_{adj}=1.2, 95% CI=1.1-1.2), cardiovascular disease (RR_{adj}=1.6, 95% CI=1.2-2.0), and a high-risk of anxiety disorders or depression (RR_{adj}=8.6, 95% CI=4.9-15.1). Type D personalities did not have an elevated risk of diabetes. The associations all remained statistically significant when they were analyzed conditionally on low education or on low income, though some relative risks moved slightly towards the null value (Table 8.3).

Persons with low education as well as those with a low income had significantly higher relative risks for all studied indicators for (determinants of) health, except for unsafe alcohol use (Table 8.3). The risk of unsafe alcohol use was significantly lower for persons with a low education (RR_{adj}=0.8, 95% CI: 0.6-0.9). All associations remained statistically significant when they were analyzed conditionally on Type D personality, though some relative risks moved slightly towards the null value (Table 8.3).

Interaction between Type D personality and low SES on an additive scale was significant for the effect of low education on a high risk of anxiety disorder or depression (RERI=12.9, 95% CI: 0.8-32.3), and for the effect of a low income on self-assessed poor health (RERI=1.4, 95% CI: 0.9-1.9) and on a high risk of anxiety disorder or depression (RERI=11.4, 95% CI: 3.5-41.0) (Table 8.3).

8.4 Discussion

Our results showed that the two essential conditions for the ‘indirect selection hypothesis’ were fulfilled: a positive association between Type D personality and low SES, as well as elevated risks of a Type D personality for most of the studied health outcomes, even conditional on a low SES. This indirect selection mechanism might be explained by genetic factors that predispose for a Type D personality as well as for a low SES, for example through intelligence.⁹ However, Type D personality did not explain the higher risks of a low SES for most (determinants of) health, as we would expect in the case of indirect selection through Type D personality, though some relative risks moved slightly towards the null value when analyzed conditionally on Type D personality.

Some methodological limitations should be considered when interpreting the results of our study. First, due to the cross-sectional nature of the datasets, it is not possible to make any definite inference on causality. However, we assumed that both Type D personality and a low SES precede the outcomes for (determinants of) health.

Table 8.3. Adjusted relative risks(a) of (determinants of) health, for Type D personality, low education, and low income

	Outcome is a				Outcome is poor health			
	Lifestyle-related risk factor							
	Current tobacco smoking	Unsafe alcohol use	Obesity	Self-assessed poor health	Chronic disease	Diabetes	Cardiovascular disease	High risk anxiety disorder or depression
	RR (95% BI)	RR (95% BI)	RR (95% BI)	RR (95% BI)	RR (95% BI)	RR (95% BI)	RR (95% BI)	RR (95% BI)
Type D personality								
Unconditional	1.1* (1.1-1.2)	0.9 (0.8-1.0)	1.1 (1.0-1.3)	2.8* (2.6-3.1)	1.2* (1.1-1.2)	1.0 (0.7-1.2)	1.6* (1.2-2.0)	8.6* (4.9-15.1)
Conditional on low education	1.1* (1.0-1.2)	0.9 (0.8-1.0)	1.1 (1.0-1.2)	2.6* (2.4-2.8)	1.2* (1.1-1.2)	0.9 (0.7-1.2)	1.5* (1.2-1.9)	7.9* (4.5-13.9)
Conditional on low income	1.1* (1.0-1.2)	0.9 (0.8-1.0)	1.1 (1.0-1.2)	2.5* (2.3-2.8)	1.2* (1.1-1.2)	0.9 (0.7-1.1)	1.4* (1.1-1.8)	7.3* (4.2-12.9)
Low education								
Unconditional	1.4* (1.3-1.5)	0.8* (0.6-0.9)	1.7* (1.4-1.9)	2.4* (2.2-2.7)	1.2* (1.1-1.3)	1.8* (1.4-2.3)	1.9* (1.5-2.5)	3.9* (2.2-7.1)
Conditional on Type D personality	1.4* (1.3-1.5)	0.8* (0.6-0.9)	1.6* (1.4-1.9)	2.1* (1.9-2.3)	1.2* (1.1-1.3)	1.8* (1.4-2.3)	1.9* (1.4-2.5)	2.9* (1.7-4.9)
Low income								
Unconditional	1.4* (1.3-1.5)	1.1 (1.0-1.2)	1.2* (1.1-1.4)	2.2* (2.0-2.5)	1.2* (1.1-1.2)	1.6* (1.3-2.0)	1.9* (1.6-2.4)	3.8* (2.1-6.9)
Conditional on Type D personality	1.4* (1.3-1.5)	1.1 (1.0-1.2)	1.2* (1.1-1.3)	2.0* (1.8-2.2)	1.1* (1.1-1.2)	1.6* (1.3-2.0)	1.8* (1.5-2.3)	2.9* (1.6-5.2)

	Outcome is a lifestyle-related risk factor				Outcome is poor health			
	Current tobacco smoking	Unsafe alcohol use	Obesity	Self-assessed poor health	Chronic disease	Diabetes	Cardiovascular disease	High risk anxiety disorder or depression
	RR (95% BI)	RR (95% BI)	RR (95% BI)	RR (95% BI)	RR (95% BI)	RR (95% BI)	RR (95% BI)	RR (95% BI)
Type D Personality and low education								
Both absent	1	1	1	1	1	1	1	1
Only low education	1.4* (1.3-1.5)	0.8* (0.6-1.0)	1.8* (1.5-2.1)	2.6* (2.3-3.1)	1.2* (1.1-1.3)	1.8* (1.3-2.3)	2.0* (1.5-2.8)	3.2 (0.9-10.9)
Only Type D	1.1* (1.0-1.2)	0.9 (0.8-1.1)	1.1* (1.0-1.3)	2.9* (2.6-3.2)	1.2* (1.1-1.3)	0.9 (0.7-1.2)	1.6* (1.2-2.1)	8.1* (4.3-15.3)
Both present	1.5* (1.3-1.8)	0.7 (0.5-1.0)	1.5* (1.2-1.9)	5.1* (4.5-5.9)	1.4* (1.2-1.5)	1.9* (1.2-2.9)	2.6* (1.7-4.1)	23.1* (11.4-46.9)
RERI(b)	0,0 (-0.2-0.3)	0,0 (-0.4-0.3)	-0,4 (-0.9-0.1)	0,6 (-0.1-1.3)	0,0 (-0.2-0.1)	0,2 (-0.7-1.1)	0,0 (-1.2-1.4)	12,9* (0.8-32.3)
Type D Personality and low income								
Both absent	1	1	1	1	1	1	1	1
Only low income	1.4* (1.3-1.4)	1.1 (1.0-1.2)	1.2* (1.1-1.4)	2.0* (1.8-2.3)	1.1* (1.1-1.2)	1.6* (1.3-1.9)	1.8* (1.4-2.3)	2.2 (0.8-6.1)
Only Type D	1.0 (0.9-1.1)	0.9 (0.8-1.1)	1.1 (1.0-1.3)	2.6* (2.3-3.1)	1.1* (1.1-1.2)	0.8 (0.5-1.2)	1.4 (1.0-2.1)	5.6* (1.9-16.2)
Both present	1.5* (1.4-1.7)	0.9 (0.8-1.1)	1.3* (1.1-1.5)	5.1* (4.5-5.7)	1.4* (1.3-1.4)	1.5* (1.1-2.1)	2.7* (2.0-3.6)	18.2* (7.8-42.7)
RERI(b)	0.2 (0.0-0.3)	-0.1 (-0.3-0.2)	-0.1 (-0.3-0.2)	1.4* (0.9-1.9)	0.1 (0.0-0.2)	0.2 (-0.4-0.7)	0.4 (-0.5-1.3)	11.4* (3.5-41.0)

(a) Adjusted for sex, age (three categories), and municipality

(b) Relative Excess Risk due to Interaction

* p < 0.05

Second, the response of Type D personalities, persons with a lower SES, and those with poor health could be lower than that of others. Selective non-response of these persons would lead to underestimation of their prevalence, and would lead to underestimation of the real risk ratios only when Type D personalities and/or persons with a lower SES did not respond in the presence of (determinants of) poor health. Third, Type D personalities might respond differently to particular questions. For example, Type D personalities are inclined to perceive poor health more often than non Type D personalities.²⁵ Socioeconomic differences in 'life expectancy in good health' might partly be explained by this inclination, because this outcome is based on self-assessed health combined with mortality. Moreover, in the presence of health complaints, Type D personalities are less likely to consult a physician as compared to non Type D personalities for physical or mental health problems.²⁶⁻²⁸ This could result in under diagnosis and, consequently, underestimation of real risk ratios of chronic diseases. Fourth, we did not select some covariates that might be relevant, particularly ethnicity. For example, non-Western respondents in the West-Brabant region more often had low education (28%) and a low income (74%) than Western respondents (6% and 36% respectively). In addition, among the non-Western respondents in this region, the prevalence of Type D personality was much higher (33%) than among Western respondents (19%). Therefore, we repeated our analyses on the subset of Western respondents, and that showed that most of the results remained essentially unchanged. Fifth, some questions of the K10, to assess a high risk of anxiety disorder or depression, seem to overlap three questions of the DS14 Negative Affectivity subscale. Nevertheless, the K10 refers to a specific time period (the past four weeks) whereas the DS14 refers to the personality of the respondent as a stable trait or disposition. In fact, the prevalence of Type D personality was much higher than the prevalence of a high risk of anxiety disorders or depression. Moreover, several follow-up studies of cardiac patients showed that Type D personality predicts depression, even after taking account of its baseline value.¹⁶ In addition, the questions for Social Inhibition, an essential condition for the definition of Type D personality, do not overlap the K10. In conclusion, assuming that Type D personality and low SES merely precede most health outcomes, our findings suggest that Type D personality does not explain the socioeconomic health inequalities, but is a risk factor for adverse health outcomes in addition to low SES. Moreover, for some outcomes, Type D personality even interacts with a low SES to show an excess risk.

An interesting finding was that a Type D personality did not indicate higher risk of the lifestyle-related factors, except for current tobacco smoking, while it did indicate higher risk of poor health outcomes, except for diabetes. Here the question arises of whether a Type D personality would be associated with a higher risk of certain poor health outcomes, but not through an unhealthy lifestyle. This would

match earlier findings in cardiac patients that Type D personality in itself could lead to an elevated cortisol level due to sustained stress, elevated cytokine levels, and a decreased variability of heart rate.²⁹⁻³³ Another interesting finding in our study was the higher prevalence of Type D personality in the alcohol abstainers as compared to the prevalence among (un)safe drinkers. By comparison, numerous studies have also shown that alcohol abstainers are at greater risk of adverse health outcomes than moderate drinkers.³⁴ Our results might suggest that Type D personality is more related to alcohol abstinence as a risk factor for adverse health outcomes, than to unsafe alcohol use.

Our findings might already be of importance for public health policies. For example, based on population attributable risks, the public health impact of Type D personality for cardiovascular disease is greater (PAR=7.4%) than that of low education (PAR=3.6%), though less than that of a low income (PAR=18.5%).

Prevention in low SES populations may have more effect when it takes into consideration that persons with a low SES in combination with a Type D personality are at highest risk of adverse health outcomes and that Type D personalities, irrespective of their SES, need specific approaches, such as the diminishing of barriers for (preventive) care demand, being aware of their social fears, and improving their self-management. Acknowledging that personality is difficult to change, the main issue in prevention should probably be case finding and the tailoring of prevention programmes for this specific target group. For this, the challenge will be how to reach, identify, and influence individuals with these personalities. In the Netherlands, the general practitioner, knowing his patients, is perhaps the most appropriate person to play a pivotal role in such programmes.

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Chapter 9

Examining the link between domestic violence victimization and loneliness in a Dutch community sample

A comparison between victims and nonvictims by Type D personality

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Abstract

The current study investigated whether differences in loneliness scores between individuals with a distressed personality type (Type D personality) and subjects without such a personality varied by domestic violence victimization. Participants (N=625) were recruited by random sampling from the Municipal Basic Administration of the Dutch city of 's-Hertogenbosch and were invited to fill out a set of questionnaires on health status. For this study, only ratings for domestic violence victimization, Type D personality, feelings of loneliness, and demographics were used. Statistical analyses yielded main effects on loneliness for both Type D personality and history of domestic violence victimization. Above and beyond these main effects, their interaction was significantly associated with loneliness as well. However, this result seemed to apply to emotional loneliness in particular. Findings were discussed in light of previous research and study limitations.

9.1 Introduction

Domestic violence encompasses many different types of violence within the home, such as child (sexual) abuse and neglect, intergenerational transmission of violence, violence between intimate partners, and witnessing inter-parental violence.¹ It appears to be epidemic in size in many Western countries, although prevalence rates observed in empirical research may vary substantially due to differences in definitions, measuring methods, and study sample characteristics.² In the Netherlands, lifetime prevalence estimates of domestic violence lie between 29% and 45%.^{3,4} Twelve month prevalence, by contrast, appears to lie just above 4%.⁵

Prevalence rates of domestic violence are even more alarming when its potential consequences for victims are considered. Among other things, domestic violence has been associated with a wide array of adverse physical, social, and especially psychological consequences.⁶⁻⁸ However, despite the well-documented relationship between domestic violence and negative psychological outcomes, in the majority of studies the independent effect of domestic violence seems to explain only a marginal proportion of the variance in victims' well-being after adjusting for potential demographic confounders in statistical analyses.⁹⁻¹¹ Therefore, new research should explore which factors determine the impact of domestic violence on victims' well-being.

9.1.1 Type D personality as a risk factor for psychological maladjustment to domestic violence

A number of recent studies suggests that an important role in the onset of mental health problems in victims of domestic violence is played by personality characteristics.¹² To further develop this body of research, this study focused on one specific personality type: *distressed* personality type (Type D personality). Type D personality is characterized by increased levels (i.e., above a pre-determined cut-off score) of both negative affectivity (NA) and social inhibition (SI). NA is a trait characteristic and involves, among other things, the stable tendency to experience negative emotions, negative self-evaluations, and oversensitivity to adverse stimuli.^{13,14} When exposed to stressful events, people with high levels of NA tend to respond more intensely than others.¹⁵ However, NA alone appears to be insufficient for development of negative outcomes. Several studies suggest that individual differences in emotion-regulation strategies are vital to the course of negative emotions experienced in the aftermath of stress-exposure.¹⁶ One maladaptive emotion-regulation strategy that has often been suggested to enhance the adverse influence of NA on successful coping with stressful conditions is SI.^{17,18} SI is another personality trait and involves the stable tendency to inhibit emotions and behaviour in social interactions to avoid disapproval by others,

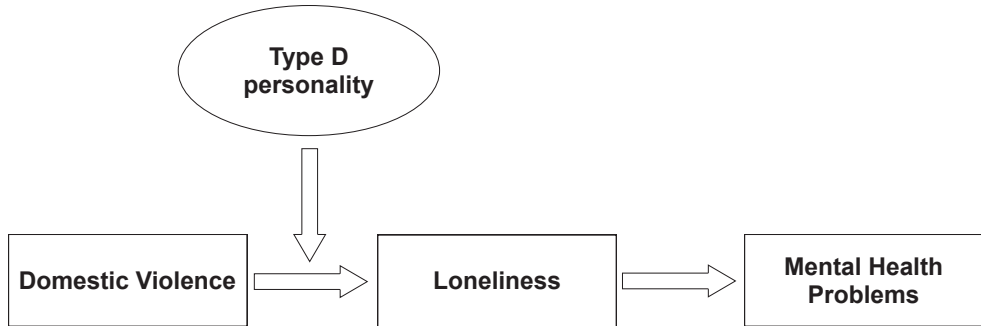
despite the presence of a need for companionship.¹⁹ According to Type D scholars, particularly the combination of high levels of NA and high levels of SI is likely to be associated with adverse outcomes, as “it is not the experience of negative emotions per se, but rather the chronic psychological distress that results from holding back negative emotions, that is likely to affect (...) health”.¹⁸ How this combination of two personality traits affects well-being after stress exposure remains a largely unexplored topic, though.

9.1.2 Loneliness as an intermediate between Type D personality and mental health

Based on the definition of SI, one might argue that the SI component of Type D personality acts as an obstacle to form stable social relationships. Type Ds may therefore fail to fulfil the innate human need to belong. When having to deal with negative life events or conditions (e.g., domestic violence) and when emotional support and companionship from others is most needed, this failure may leave them at risk of experiencing a sense of *loneliness*. Loneliness represents a distressful affective state in which one holds the undesired perception of having few social relationships and being isolated from others.^{20, 21} It has been conceptualized as the opposite of belongingness or embeddedness and is often distinguished in two categories: emotional loneliness and social loneliness.²² The former primarily reflects perceived lack of sufficient dyadic attachment relationships and may therefore be conceived as an individual level category of loneliness, while the latter represents perceived disconnectedness to larger social networks that provide the individual with a sense of social integration, such as peer groups, school, work, and the community as a whole.²³⁻²⁶

Feelings of loneliness may be very unpleasant for the individual who experiences them, but should not be considered as a disease in themselves. Rather, they involve a risk for mental illness, particularly in conjunction with stress exposure.^{27, 28} A recent study provided initial support for this supposition with regard to domestic violence victimization.⁵ In this study, impact of domestic violence victimization on self-reported mental health problems varied by level of loneliness. More specifically, victims with high levels of loneliness reported more mental health problems than victims with low levels of loneliness and nonvictims (with high or low levels of loneliness). When these findings are considered in the light of the proposed link between Type D personality and loneliness, one might speculate that the impact of domestic violence victimization on mental health depends on loneliness, but particularly for subjects with Type D personality. After all, Type Ds are the ones most likely to develop loneliness in response to domestic violence (see Figure 9.1).

Figure 9.1. Relationship between domestic violence, Type D personality, loneliness, and mental health problems



However, before testing the empirical validity of this model, it seems reasonable to explore whether the speculated association between Type D personality and loneliness exists in the first place.

9.1.3 The current study

Given the aforementioned, the current study investigated associations between domestic violence victimization, Type D personality, and loneliness. Its purpose was twofold. First, we intended to explore whether mean loneliness scores between Type Ds and Nontype Ds differed by victim status (i.e., victim versus no victim). We expected that victims with Type D personality and nonvictims without Type D personality would report the highest and lowest scores, respectively. Intermediate levels of loneliness were expected for victims without Type D personality and Type Ds without history of domestic violence. Second, we aimed to reveal whether the interaction term of domestic violence victimization and Type D personality was associated with loneliness. If an interaction effect would be observed, this would indicate that victims with Type D personality run an *increased* risk (i.e., above and beyond the cumulative effect of victimization and Type D personality) of suffering from loneliness. We hypothesized that such an interaction effect is most likely to exist for emotional loneliness, as domestic violence victimization may be interpreted to reflect the destruction of the close bond between victim and perpetrator and not so much a decrease in connections with networks outside the home.²⁹

9.2 Methods

9.2.1 Procedure and participants

Study data were retrieved from the 2005 Hart voor Brabant Public Health Survey, which was conducted in 29 municipalities across the central part of the Dutch province of Noord-Brabant. As measures on NA and SI had been administered exclusively in

the municipality of 's-Hertogenbosch, only respondents living in this city were eligible for inclusion. 's-Hertogenbosch is the capital of the province of Noord-Brabant and currently has approximately 140,000 inhabitants. Potential participants were randomly selected from the population of 's-Hertogenbosch between 18 and 65 years old through the Municipal Basic Administration and sent a postal survey in the fall of 2005. A personal log on code was included for those who preferred to fill out the questionnaire through the internet. If necessary, reminders were posted three and six weeks after initial mailing. Participation was voluntary. Six hundred and sixty of those approached (47.2%) responded (472/660, 71.5% by mail and 188/660, 28.5% through the internet). The study was performed under Dutch Public Health Preventive Measures Act of 1990 and was approved by the board of directory of the Regional Health Service Hart voor Brabant.³⁰

9.2.2 Measures

Background characteristics. The data set contained a huge amount of information on participants' socio-demographic background. For the current study, a limited number of background variables was described: age, gender, education level (i.e., master's or bachelor's degree versus other), ethnic background (Dutch versus other), and marital status (married or cohabitating versus other), having children under the age of 18 in the household (yes versus no), and employment status (i.e., holding a paid job versus other). The latter two variables were included as covariates, because previous studies suggest that these may act, in addition to demographics, as potential confounders when predicting loneliness.³¹

Domestic violence victimization. To measure domestic violence victimization, participants were asked to indicate whether they had ever fallen victim to psychological/emotional, physical, or sexual violence. Each category was accompanied by several examples. Participants were allowed to indicate more than one category. Item wording was reviewed by the Dutch national epidemiology workgroup. Participants who reported at least one history of violence were requested to answer several additional questions. For the current study, questions on acquaintance with the perpetrator(s) and location of victimization were used to create a dichotomous variable representing domestic violence victimization (defined as an act of violence perpetrated in the home by members of the family circle, including partners or ex-partners, children, other relatives, and close friends). This strategy followed upon previous research into domestic violence victimization in the Netherlands and elsewhere.^{5, 32}

Type D personality. Type D personality, negative affectivity, and social inhibition were assessed by the Type D Scale 14 (DS14).³³ The DS14 comprises two subscales: the NA subscale and the SI subscale. Both subscales contain seven items. Items need to be

answered on a 5-point Likert scale ranging from 0 (false) to 4 (true). In accordance with previous victim studies, a pre-determined cut-off score of ≥ 10 on both subscales was used to classify participants as Type D.^{34, 35} Emons et al. 2007 have shown that the DS14 items have the highest measurement precision around this cut off.³⁶ The subscales of the DS14 have high internal consistency and good test-retest validity over a three-month period.³³ In the current study, the DS14 showed excellent internal consistency reliabilities, with Cronbach's $\alpha=0.88$ for both subscales.

Loneliness. The Loneliness Scale (LS) was used to map feelings of loneliness.³⁷ This instrument consists of 11 items: five items are positively worded and assess feelings of belongingness, six are negatively phrased and regard aspects of missing relationships. Response categories are: no, more or less, and yes. The no category is coded as 0, while both the more or less and the yes category are coded as 1. The rationale behind this strategy is that many people are reluctant to admit social network deficits.³⁸ The LS measures severity of loneliness. However, item scores can be used to compute total scores for emotional (six items) and social loneliness (five items).²² As the two subscales correlated substantially in this study ($r=0.62$, $p<0.001$), a principal components analysis with varimax rotation was conducted to ensure that LS items measured two independent constructs. Factors were extracted using scree plot inspection and identifying factors with eigen values greater than 1.0. Results confirmed the existence of a two-factor solution. The two factors accounted for 56.4% of the total variance, with the emotional loneliness items loading on the first factor (≥ 0.58) and the social loneliness items loading on the second factor (≥ 0.57). Psychometric properties of the LS have proven to be satisfactory in several Dutch samples.³⁹ Internal consistency reliability was Cronbach's $\alpha=0.90$ for the total LS score, 0.85 for the emotional loneliness subscale and 0.78 for the social loneliness subscale.

9.2.3 Statistical analyses

Means, standard deviations, and frequencies were computed to describe background variables. Next, subjects were differentiated by Type D personality and victim status. A group variable was created to represent the four possible combinations: Type Ds with history of domestic violence, Type Ds without history of domestic violence, Nontype Ds with history of domestic violence, and Nontype Ds without history of domestic violence. Independent t tests and chi square analyses, as appropriate, were conducted to compare the four groups on background variables and to estimate the effect size of the group variable. Then an one-way ANOVA was performed to detect between-groups differences in total loneliness scores when adjusting for observed background differences. Levene's test indicated that the assumption of homogeneity of variance between groups was violated. However, this was not deemed problematic, as the

larger relative variance occurred in the largest group.⁴⁰ This did indicate, though, that ANOVA would produce conservative results. Post-hoc Tukey HSD tests with Bonferroni correction (alpha level should be $p < 0.008$) were employed to locate group differences on the LS. Finally, a two-way between groups MANOVA was run to test for the significance of the association between the interaction term of domestic violence victimization and Type D personality and loneliness subdimensions. MANOVA works best when dependent variables are highly negatively correlated and works reasonably well with moderate correlations that approximate $|\rho| < 0.6$.⁴⁰ Given the correlation of 0.62 between the two LS subscales, this condition was fulfilled for our data. Since the assumption of homogeneity of variance-covariance matrices was violated, Pillai's Trace was used to determine whether the mean centroids for the three conditions (domestic violence victimization, Type D personality and the combination of domestic violence victimization and Type D personality) were distal from each other.⁴¹ This statistic is more robust to violations of assumptions than others, such as Wilks' lambda.⁴⁰ The value of partial eta squared was checked to evaluate effect sizes. Univariate F tests with Bonferroni correction (alpha level should be $p < 0.025$) were employed to identify overall group differences on the separate loneliness scales. Additionally, mean loneliness scores were plotted to inspect the manner in which victimization and Type D personality interacted. All statistical analyses were performed using the software package SPSS 16.0 for Windows (SPSS Inc., Chicago, Illinois).

9.3 Results

9.3.1 Descriptive statistics

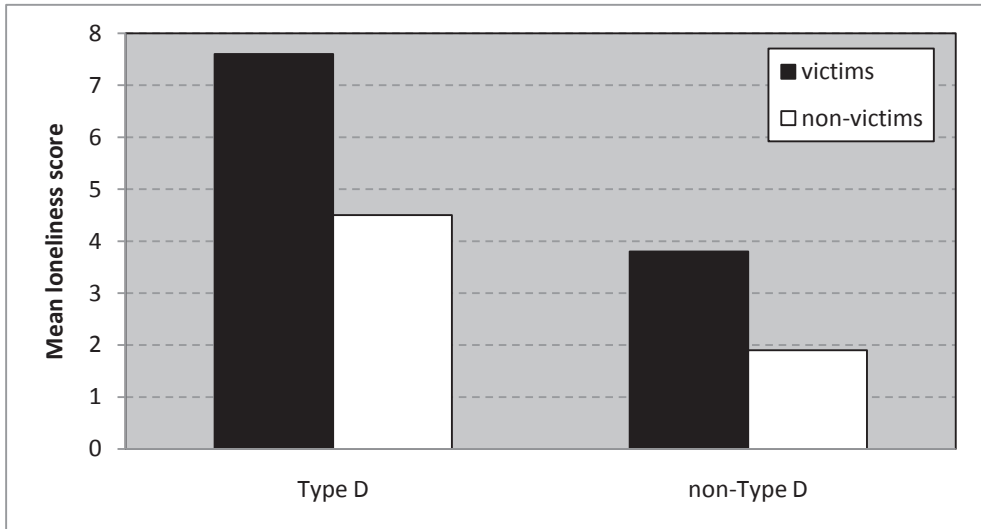
Thirty-five respondents were excluded from statistical analyses due to missing data. Thus, our sample contained 625 participants. A description of the total study sample is presented in Table 9.1. Fifty-five (8.8%) participants could be classified as victims of domestic violence and 134 (21.4%) as Type Ds. Twenty-one victims (3.4%) had Type D personality. Significant between-group differences were found for gender, ethnic background, marital status, having children under the age of 18 in the household, and employment status (all p values < 0.05).

Table 9.1. Sample characteristics (N=625)

	<i>M</i>	<i>SD</i>
Age	46.1	11.7
	<i>n</i>	% of <i>N</i>
Gender		
Male	296	47.4
Marital status		
Married/registered partnership	340	54.4
Cohabiting	106	17.0
Education		
University degree (i.e., master degree)	67	25.3
Higher vocational education (i.e., bachelor degree)	145	23.2
Children < 18 years in household		
< 4 years	77	12.3
< 12 years	116	18.6
< 17 years	99	15.8
Employment status		
Holding a fulltime job (32-40 hours)	308	49.3
Holding a parttime job	141	22.6
20-32 hours	91	14.6
12-20 hours	34	5.4
< 12 hours	16	2.6
Ethnic origin		
Dutch	584	93.4

9.3.2 Between-groups differences for total loneliness scores

ANOVA showed a significant overall effect for the group variable after controlling for background differences, $F(3,620)=57.0$, $p<0.001$. The value for partial Eta squared (0.216) indicated a large effect size.⁴² As expected, victims with Type D personality reported the highest loneliness scores ($M=7.6$, $SD=3.8$), while the lowest scores were observed for nonvictims without Type D personality ($M=1.9$, $SD=2.3$). Also in line with expectations, Type Ds without history of domestic violence ($M=4.5$, $SD=3.4$) and victims without Type D personality ($M=3.8$, $SD=3.8$) suffered from intermediate levels of loneliness (see also Figure 9.2). Except from the difference between the latter two groups, which was not significant, all between-groups differences were significant at $p<0.001$.

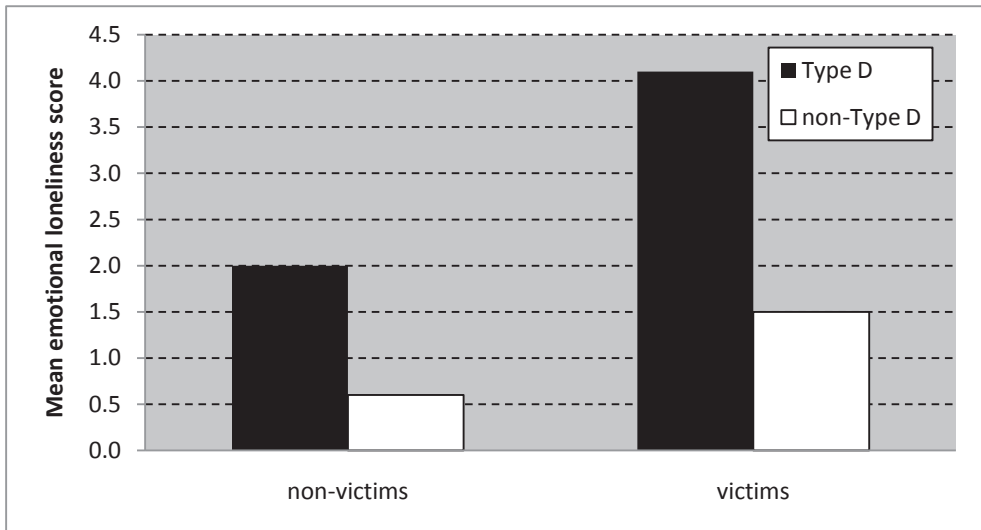
Figure 9.2. Mean total loneliness scores differentiated by type D personality and victim status

Note that Type D/nonvictims and Nontype D/victims did not differ significantly from each other. All remaining between-groups differences were significant at $p < 0.001$.

9.3.3 Emotional and social loneliness by Type D personality and domestic violence victimization

In addition to main effects for domestic violence victimization (Pillai's Trace=0.07, $F(2,620)=23.2$, $p < 0.001$, partial eta squared=0.07) and Type D personality (Pillai's Trace=0.11, $F(2,620)=38.4$, $p < 0.001$, partial eta squared=0.11), the MANOVA on the two loneliness subscales revealed a significant interaction between domestic violence victimization and Type D personality, Pillai's Trace=0.022, $F(2,620)=6.95$, $p < 0.005$, although the value for partial eta squared (0.022) suggested that the effect size of the interaction effect was small.⁴² As expected, when results for the dependent variables were considered separately in ANOVAs, the interaction effect remained significant for emotional loneliness only, $F(1,621)=18.9$, $p < 0.005$. Bar graphs of Type D personality by domestic violence history suggested that Type Ds were at increased risk of reporting emotional loneliness when exposed to domestic violence (see Figure 9.3).

Figure 9.3. Mean emotional loneliness scores in Type Ds and Nontype Ds differentiated by victim status



9.4 Discussion

The present study was developed to test whether mean loneliness scores between individuals with Type D personality and Nontype Ds varied by domestic violence victimization and whether an interaction effect between Type D personality and victim status could be established. In line with expectations, Type Ds with a history of domestic violence reported the highest levels of loneliness. Moreover, results suggested that emotional loneliness scores were not solely due to the accumulation of the adverse effects of Type D personality and victimization history, but also due to the synergy between these two factors. In other words, the specific combination of trait NA and SI was associated with an *increased* risk of suffering from emotional loneliness when exposed to domestic violence.

Our results correspond with those reported by Williams and colleagues.⁴³ They showed that Type D personality was associated with low levels of perceived quality of social support received by family and close friends in a sample of healthy university student from the United Kingdom and Ireland.⁴³ In order to prevent mental illness or further disease development in victims of domestic violence, victim support agencies may employ our results (if these are replicated and extended in more rigorous and prospective studies) to target loneliness by tailoring services to victims' characteristic emotion-regulation strategies. Currently, victims in need of psychological support are often (by default) offered the opportunity to participate in a peer support group (PSG).

It is widely assumed that the adverse outcomes of victimization experiences can be overcome through participation in PSGs, for they provide the opportunity to share negative experiences with others.⁴⁴ However, this supposition is merely anecdotal in nature and lacks empirical validation.^{45, 46} Moreover, it is too general to be of help for all victims. Particularly victims with Type D personality will experience PSGs as highly distressful if the setting in which they take place is not perceived as safe and secure enough to freely exhibit and be oneself - a core condition that needs to be fulfilled in order to circumvent their tendency to withdraw in social interactions. Such victims are most likely to profit from PSGs which are exclusively accessible to members of the victims' inner circle of relatives and close friends.⁵ If intimate support groups prove to be distressful as well or if they prove to be unfeasible (for example when the victim stays in a shelter), alternative treatment methods, such as internet-based interventions (IBIs) or structured writing therapy (SWT), should be considered. Both have been developed to avoid emotional expression in the presence of (significant) others and therapists and may therefore be particularly suitable for individuals with Type D personality.³⁵ Both IBIs and SWT have been shown to result in mental health improvement.⁴⁷⁻⁴⁹ Given the high prevalence rate of Type D personality among victims of domestic violence observed in this study (21/55, 38.2%), the benefits of any of these alternative support modalities are likely to outweigh their costs.

9.4.1 Study limitations

When interpreting our study's results, several limitations need to be considered. First, due to the cross-sectional nature of our data, we were not able to establish cause and effect. Most importantly, this made it impossible to properly test for the moderating impact of Type D personality on the relationship between domestic violence victimization and loneliness. Second, the psychometric properties of our measure of domestic violence victimization are unknown. In the current study, only 8.8% participants had been victimized during the last year. Presumably due to administration of different instruments; differences in reference periods used; and inclusion of women only, other studies have found much higher prevalence rates.^{6, 50, 51} Third, our data set did not contain information on, among other things, the experience of other stressful events, timing of victimization, and the perceived severity of the acts of violence under investigation. Each of these factors may have affected loneliness. Moreover, the data set did not allow controlling for other personality characteristics than the combination of NA and SI. Consequently, the divergent validity of Type D personality with related personality constructs could not be determined. Faultfinders have argued that Type D personality adds nothing new to 'the maze of concepts' playing a role in the etiology of health-related problems and is just another measure of NA, neuroticism, or the anxious defensive style.^{52, 53} To refute such arguments, Denollet has emphasized that "within the Type D framework, NA [or related constructs, such

as neuroticism] refers to a continuous personality *trait* (...) while ‘distressed’ refers to a *discrete* (italics by author) personality *configuration* designating patients who are inclined to experience emotional and interpersonal difficulties”.⁵⁴ In support of this view, Williams and colleagues have shown that Type D personality was associated with low levels of perceived social support when adjusting for a continuous variable of neuroticism in a sample of healthy young adults.⁴³ However, future studies are needed to replicate these findings and to determine their validity with regard to other outcomes. Fourth, the failure to document a significant interaction between Type D personality and history of domestic violence on social loneliness was expected, but may lack generalizability, for example to sheltered populations. Several studies suggest that victims of domestic violence who stay in shelters experience loneliness different than subjects recruited among the general population.⁵⁵⁻⁵⁷ Fifth, the response rate in our study was rather low. This may have biased the study’s results. Finally, our sample mainly included participants of Dutch origin. Since a number of studies suggest that antecedents of loneliness vary by cultural background, this study characteristic may have influenced our findings as well.⁵⁸

Despite these limitations, our study was the first to investigate the association between domestic violence victimization, Type D personality, and loneliness. By doing so, we extended the slowly growing body of research focusing on the interplay of different global personality traits and health outcomes.^{54, 59} Looking beyond the traditional question of how single traits affect disease and instead adopt an approach that takes into account the ways different traits interact to elicit adverse health consequences may help the identification of those most at risk for adverse outcomes when faced with highly stressful situations or events.⁶⁰ Finally, it was the first study to test for the significance of the association between the interaction of Type D personality and domestic violence victimization and loneliness. Future studies may consider replication of our findings with prospective data. Of particular interest is an examination of Type D personality prior to victimization and loneliness. To test for the full model proposed in the introduction section of this paper, their design should also allow for the assessment of mental health problems.

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Chapter 10

General discussion

10.1 Introduction

As explained in Chapter 1, in the Netherlands 28 RHSs serve their 418 municipalities by carrying out epidemiological municipal public health assessments. These assessments are legally obliged to serve as a evidence-base for the local public health memoranda, to be drawn up by the Local Authorities.^{1, 2} Despite an evolution of regional public health reporting by the RHSs, the epidemiological information had not been greatly used in the development of local public health policies yet.³⁻⁸ Hence the RHSs still face the challenge of how to make their epidemiological information more useful for local public health policy-making. The general purpose of this study is therefore to strengthen regional public health reporting as the knowledge base for evidence-based local public health policy.

Four questions were derived from this general purpose:

1. Can a regional variant of the national PHSFs be developed and, if so, which of its characteristics could then serve as building blocks for an empirical model for regional public health reporting?
2. What are the main quality criteria of regional public health reporting in the Netherlands?
3. How can the regional variant of the national PHSF further be improved, to enlarge policy impact?
4. What is the use and usefulness of regional epidemiological information in local policy and in scientific research?

These research questions were answered by developing, evaluating and improving an empirical model for regional public health reporting in two RHS regions, building on the model and experience of the Dutch national PHSFs. Moreover, a theoretical framework was developed as a sound basis for improving the quality and quality assessment of regional public health reporting in the Netherlands. In addition, the extent to which epidemiological information is used in local health policy-making and the factors involved were assessed quantitatively. To conclude, the use of existing local epidemiological data in scientific research was illustrated by answering two different research questions from the fields of public health and mental health care.

In this final Chapter, first the above mentioned research questions will be answered, following the three parts in this thesis: 1) developing an empirical and theoretical model for regional public health reporting, 2) improving the empirical model for regional public health reporting, and 3) using regional epidemiological information in policy and research. Second, the research limitations and strengths will be discussed. Third, the implications and recommendations for practice and research are given. Finally, some concluding remarks will be made.

10.2 Research conclusions

10.2.1 Developing an empirical and theoretical model for regional public health reporting

Developing an empirical model

This study resulted in an empirical model for regional public health reporting, characterised by its 1) products, 2) content and design, and 3) underlying process and organisation. This empirical model can be seen as first step in the direction of a generic model for regional public health reporting.

The empirical regional PHSF model consists of different *products* for different purposes and target groups. Regional Reports for the RHS and other regional organisations and Municipal Reports for each Local Authority, both with key messages, are produced every four years aiming to underpin *strategic* regional and local public health policy. A website was specifically designed to underpin *tactical* regional and local public health policy by containing up-to-date information for translating strategic policy priorities into concrete plans of action. The subsequent implementation of the website Regional Health Compass in the West-Brabant region showed that it is possible to share much of this website with other Regional Health Services by using the same Content Management System.

The national PHSF's conceptual model was used for the *content* of the regional PSHF for the arrangement of subjects as well as for the regional elaboration of indicators. The national PHSF also served as a model for the style, such as language and text structure, and the *design* of the products, giving the products a professional and scientific appearance.

Responsibility for project *organisation* was spread over three levels (strategic, tactical, and operational), all with participants from the co-operating partners. A steering committee was responsible for strategic decisions on the development of the regional PHSF, a project group was responsible for the content, development, and execution of the regional PHSF, and three product teams actually made the products. The involvement of other concerned parties, in this case only municipal public health officials, was formalised at the tactical level by a policy advisory committee. The developed empirical *process* model connects to the theoretical framework in which interaction between researchers and policy makers is an important condition for the use of research data in public health policy.

The regional PHSFs in the two pilot regions were acknowledged by the Ministry of Health, Welfare and Sport as an important instrument for improving the quality of

the local public health memoranda.^{9, 10} For the benefit of other RHS regions, which were interested in developing their own regional PHSF, the Ministry financed the development and implementation of a regional PHSF toolkit by the RIVM (www.toolkitvtv.nl) to serve as guideline, based on the empirical regional PHSF model.^{11, 12}

Developing a theoretical model for regional public health reporting

Based on the input of 35 relevant Dutch experts in (regional) public health reporting, we constructed a concept map as a theoretical framework for the quality assessment of regional public health reporting, indicating relevant domains and criteria. The final concept map consisted of 97 criteria, grouped into 13 clusters, and plotted in two dimensions. These clusters and dimensions were then labelled based on their positions on the map. The first dimension was labelled as ‘product’, ranging from ‘production’ to ‘content’, and the second dimension was labelled as ‘context’, ranging from ‘science’ to ‘policy’. The three most important clusters were 1) ‘solution orientation’, 2) ‘policy relevance’, and 3) ‘policy impact’. The clusters and criteria in the concept map can be used by the producers of regional public health reports as a checklist for improving the quality of their reports, for greater policy impact and for the benefit of evidence-based local public health policy.

10.2.2 Improving the empirical model for regional public health reporting

Evaluation of the regional variant of the national PHSF

The regional PHSF in both pilot regions were, in general, given a positive evaluation. Particularly significant, preconditions proved to be: good timing in relation to the local policy cycle, good structural communication about progress, planning, and decision-making, and the early involvement of the Local Authorities. The recommendations relate to: increasing familiarity with (parts of) the regional PHSF, expansion of the topics covered, more local colouring, maintaining collaboration (between RHS and Local Authorities, and between RHS and RIVM), and more attention to planning and (internal) communication. These success factors and recommendations are being used for the further development of the next regional PHSF in both regions, as well as for the regional PHSF toolkit by the RIVM.

Bringing the regional PHSF and the Supply and Demand Analysis Monitor (VAAM) into alignment

As a possible step in bridging the gap between public health policy and health care policy, the relevance of and possibilities for aligning the regional PHSF and the Supply and Demand Analysis Monitor (VAAM) were assessed. The VAAM is an internet application that estimates the supply and demand for primary health care by several providers in a small geographic area, based on the area’s sociodemographic characteristics. However, at present, alignment of both instruments (regional

PHSF and VAAM) is possible only to a limited extent, though their primary users acknowledged its relevance and added value. Therefore, it was concluded that for linking public health and primary healthcare, it would be better in the first instance to invest in the dialogue between Local Authorities and primary healthcare than in (even) further supplementing and detailing the local information.

10.2.3 Using regional epidemiological information in policy and research

Using regional epidemiological information in local public health policy

The internet survey among local health officials was designed to measure three types of use: instrumental use, meaning that the research is acted upon in specific and direct ways, conceptual use, meaning that the research improves the understanding of the subject matter and related problems, and symbolic use, meaning either that research is used to justify a position or course of action for other reasons that have nothing to do with the research findings (political use), or the fact that research is being done is exploited to justify inaction on other fronts (tactical use). Results of this survey showed that in the development of local health policy, conceptual use of epidemiological information was more common than instrumental or symbolic use. Instrumental and symbolic use increased with involvement of local officials in the research process whereas conceptual use increased with involvement of the researcher in the policy process. These outcomes suggest that the RHS epidemiologists can use different strategies to improve research utilization. In any case, ‘blurring the boundaries’, defined as actions undertaken by policy makers during the research process and conversely by researchers during the policy process in order to influence these processes, and the enhancement of interfaces between epidemiologists and local health officials will create better possibilities for optimizing research use.

Using regional epidemiological information for scientific research

The use of regional epidemiological information for scientific research was illustrated by answering two research questions. The first research question concerned health inequalities, as one of the most relevant topics in national and local public health policy. Data from two population surveys, collected for the purpose of municipal health assessment by the RHSs in the earlier mentioned two pilot regions, were used to expand our knowledge of the role of a Type D (distressed) personality as an explanation of health inequalities, aiming to quantify Type D personality’s contribution to the associations between SES and different lifestyle-related risk factors and health. Though the cross-sectional design hinders etiological inferences to be made, results suggest that Type D personality doesn’t explain the health inequalities related to a low SES, but is more likely an additional risk factor.

The second research question concerned adverse mental health outcomes as a consequence of domestic violence victimization. Here also, data came from a population survey, collected for the purpose of municipal health assessment by one of the pilot RHSs. The research question addressed the role of a Type D (distressed) personality on the effect of domestic violence victimization on loneliness scores. Results showed that Type D personality was associated with an increased risk of suffering from emotional loneliness when exposed to domestic violence.

10.3 Research limitations and strengths

10.3.1 Research limitations

The insights developed in this study should be considered with some methodological limitations. The first and main limitation relates to external validity. This study was executed in a specific Dutch policy context, most of the times even in specific Dutch regions. Consequently judgements made with regard to the applicability of the results for other regions and countries have to be made carefully. However, compared to practice-based criteria developed in Europe and the United States, the criteria and domains of the developed theoretical model in general seem to be as relevant for regional public health reporting in other countries as they are in the Netherlands. All relevant international practice-based criteria of the EVA-PHR project and the RAND Corporation are represented in the concept map, although not all of the concept map's criteria are covered by the international criteria.^{13, 14} Relating to external validity, our findings should also be judged in the light of current circumstances. For example changing responsibilities for public health policy surely will be of influence on the developed theoretical framework. Probably, the criteria and rankings in the theoretical framework will be most susceptible to external validity issues for the criteria are formulated more in a specific context than the clusters and the domains, although they are all context-sensitive.

Second, the theoretical framework was developed after the development of the empirical model for regional public health reporting. In this study however, it was recognized that for policy impact, the regional PHSFs had to be delivered just before the Local Authorities started their development of the local public health memoranda. The development of this empirical model for regional public health reporting can be seen as an example of practice-driven research when the development and refinement of this empirical model is considered as innovation testing and intervention demonstration in the light of intervention research and its six stages of research and evaluation.¹⁵ According to these stages, theory development should proceed these steps of innovation testing and intervention demonstration. However, as Rots argues, in practice-driven research progression from one phase to another may not be strictly

linear, but might even be an iterative process.¹⁶ In this study too, the development of the empirical model for regional public health reporting has provided valuable input for the development of the theoretical framework for regional public health reporting. For example, participants in the concept mapping procedure received information beforehand on the evaluation of the empirical model for a regional PHSF and on the practice-based criteria found in the international literature. Moreover, the final Dutch concept map showed that more attention was given to ‘production’, especially ‘interaction’, than in the case of the international criteria. This might be due to the success of the empirical regional PHSF model, which emphasizes the role of interaction with policy makers in the research process.

Third, the study provides limited evidence on the role of context-specific factors, but merely showed their existence. For example, the evaluation of the regional PHSFs was primarily aimed at improving the empirical model for the next regional PHSFs in both pilot regions. As a result, it did not discriminate between the context-specific and context-independent factors that were associated with familiarity, use and/or usefulness of the empirical model for regional public health reporting. The necessary conditions for success of regional public health reporting will become more apparent only in the case that the dissemination of the empirical model for regional public health reporting in other regions is accompanied by further research with regard to these conditions.

Fourth, the quantitative measurement of epidemiological research utilisation in the development of local health memoranda among Dutch local health officials proved to be pioneering work. Based on an earlier developed theoretical framework and earlier findings from case studies, a distinction was made between instrumental, conceptual, and symbolic research use, although the ladder of research utilisation is most mentioned in quantitative research as impact measure.¹⁷⁻²⁰ Moreover, for the specific Dutch context (the use of the RHS regional public health reports in local public health policy-making) the original three questions of Amara et al. for the typology approach were translated, adapted, and extended with more questions for each type of use.¹⁹ As a result, no comparisons can be made with other similar studies. Moreover, the fact that there was no clear concept for the quantitative measurement of the extent to which the RHS public health reports are used in local policy development reflects an underdeveloped problem definition when this use is considered in the light of intervention research and its six stages of research and evaluation.¹⁵ In the same perspective, this quantitative measurement can be seen as outcome assessment for regional public health reporting. In other words: the problem definition and outcome assessment in this study are addressed after the process evaluation, which is the development and refinement of the empirical model for the regional public health

report. This sequence is in line with the findings of Rots who demonstrated that in practice-driven intervention research a shift to assessment of outcomes follows process evaluation, whereas Nutbeam's stages of research and evaluation rather show a shift from outcome assessment towards process evaluation.^{15, 16}

Fifth, the use of regional epidemiological information to answer scientific research questions was restricted to the use of cross-sectional data, making causal inferences difficult. In the hierarchy of evidence, cross-sectional data does not hold a very high position. In the overload of scientific papers, journal editors tend to reject papers which contain evidence lower in hierarchy than for example evidence from longitudinal data or evidence from randomized controlled trials. However, the use of existing cross-sectional data can give a good indication of possible new causal associations, as a first and efficient step in evidence-building. This should only be done based on a certain and specific hypothesis about a specific causal relation, and not for example on data-mining techniques to find any association for which the hypothesis is thought of afterwards. This also requires that this type of research is acknowledged as worthwhile by journal editors for research in new causal relations.

Conclusively, the methodological limitations of this study mostly originate from its pioneering and practice-driven character, which makes comparisons with other scientific studies difficult.

10.3.2 Research strengths

International and national literature on public health reporting focuses mainly on data and information, for example the methods of data collection and monitoring health status, public health indicators, and city health profiles.²¹⁻²⁴ Consequently, the literature gives hardly any clue as to how to integrate the RHSs' epidemiological information into knowledge that is useful for local public health policy. Nevertheless, the issue of how to report on public health with impact on public health policy is also of interest internationally.^{13, 25, 26} International literature on this issue however is mainly practice-based rather than science-based, in Europe as well as in the United States. In Europe, two major EU-funded projects dealt with this issue. In the EVA-PHR project (EVALuation of Public Health Reporting), a framework was developed for the description and analysis of national and regional public health reports, mainly based on expert discussions.^{13, 27} The following PIA-PHR project (Policy Impact Assessment of Public Health Reporting), aimed at developing a methodology for PHR activities, provided recommendations to realise policy impact through PHR activities.^{25, 28} In the United States, based on a review of a number of Community Health Assessments (CHAs) throughout the US plus subsequent discussions with experts, the RAND Corporation developed a list of 21 criteria to describe the usefulness of individual

CHAs.^{14, 25} Based on these criteria, a web-based tool was developed to measure strengths and weaknesses of CHAs among (potential) users.²⁹

Though much knowledge about regional public health reporting might be available, either as tacit knowledge or as published in ‘grey literature’, the published scientific literature on (regional) public health reporting is still rather scarce. This implicates that this is a new and developing scientific field in public health epidemiology and policy. For the purpose of evidence-based regional public health reporting, Muir Gray’s statement therefore seems to apply very well: “absence of excellent evidence does not make evidence-based decision making impossible; what is required is the best evidence available not the best evidence possible”.³⁰ This study contributes to evidence-based regional public health reporting by making evidence on this subject available for science and practice, especially because the main source of evidence is published literature.³⁰ The highlights of the new evidence this study adds are given below.

This study is the first to develop a theoretical framework for regional public health reporting. The role of theory-development is an important step in evidence-based public health. Theory-development is intrinsic to social scientific enquiry, but doesn’t fit into biomedical research as applied in evidence-based medicine.³¹ It acknowledges that in evidence-based public health the problems to be solved are more complex than in evidence-based medicine. Public health works at different levels (populations, organisations, environments, social) and it has effect on both individual and population patterns of disease.^{31, 32} This requires working with broader evidence and introduces disciplines which do not have the same analytic foci as biomedicine and operate with differing epistemological precepts, different methods and produce different types of evidence.³¹ As in social behaviour sciences, theory development is needed to address all relevant aspects which might ask for different levels of evidence to be built, crossing disciplinary boundaries. In our case, the theoretical framework showed different domains and clusters, relating to very different principles of research to be applied. For example, epidemiology for scientific foundation of the regional public health report, and marketing and communication for tailoring the product of the regional public health report to different target audiences. Strengthening the knowledge base for local public health policy therefore requires more than a sound epidemiological assessment of the municipal health status.

Furthermore, this study is the first to develop and quantify outcome measures for the use of regional epidemiological information in local public health policy. Though this study showed that there are still many difficulties to address when assessing the outcome of regional public health reporting, it could serve as a starting point for further research on this topic and as an inspiration for public health researchers to target more explicitly their own regional public health reports.

In addition, this study provides an elaborated example of an empirical model for regional public health reporting, made available for the use by others through the RIVM's toolkit for a regional PHSF (www.toolkitvtv.nl). This example includes a process model for regional public health reporting as a new framework for thought in order to decide per research step which possibilities exist to bring about interaction with researchers, policy makers, and health professionals, where before more emphasis was on content and the scientific quality of the collected data and analysis. This interaction proved to be an important factor for the use of regional epidemiological information in local public health policy.

To conclude, the insights developed in this study could inspire other public health researchers to improve their own (regional) public health reports. Furthermore, this study's results could increase scientific interest in building a sound evidence-base for regional public health reporting.

10.4 Implications and recommendations for practice and research

10.4.1 Implications up until now

Even before this study was completed, the regional PHSF as developed in the two pilot regions was acknowledged by the Ministry of Health, Welfare and Sport as an important instrument for improving the quality of the local public health memoranda.^{9, 10} In addition, the Ministry of Health, Welfare and Sport promoted the national implementation of the empirical model for regional public health reporting by assigning to the RIVM the task of developing and implementing a toolkit for a regional PHSF (www.toolkitvtv.nl).^{11, 12} Moreover, the Netherlands Organisation for Health Research and Development (ZonMw) gave the regional PHSF an important position as a precondition for funding in order to promote evidence-based local public health practice and research.^{33, 34} Also the Dutch Health Care Inspectorate, responsible for the inspection of implementation of the Dutch Public Health Act, recommended that all Regional Health Services should have their own regional PHSF for its contribution to an improved local public health advisory function.³⁵ As a result, other RHSs are implementing the empirical model of regional public health reporting. At the start of 2011, ten (out of 28) RHSs have published (parts of) a regional PHSF. In the working area of the RHSs involved in the pilot, the developed regional PHSFs were implemented in local public health policy with extra attention on the implementation strategy. Lessons learned were published and made available for other RHSs through the RIVM's toolkit for a regional PHSF.^{11, 36} The media paid particular attention to the publications of the Key Messages for local health policy. In both regions, more than 40 articles appeared in local and regional newspapers, which

focused particularly on local problems or results. During the development of local public health memoranda, the RHS policy advisor used the regional PHSF as the main source to inform local policy makers on strategic and tactic policy decisions. In the Academic Collaborative Centre for Public Health Brabant, further research is being undertaken into the way in which the findings of the regional PHSF are translated into local policy, for example by studying the process of realization of local public health memoranda in three cases, formed by municipalities in the working area of the two pilot regions.¹⁸ Based on the evaluation study of the regional PHSFs, the RHSs in the two pilot regions started a preparatory study in 2009 for a second edition of their regional PHSFs. Herein, various recommendations, for example with regard to topics, data sources, and process were elaborated on in order to decide whether and how the recommendations could lead to an improved regional PHSF. The results served as input for the development of the second edition of a regional PHSF in both regions, which will be published in summer 2011. Furthermore, they were incorporated in the RIVM's toolkit for a regional PHSF.¹¹

10.4.2 Recommendations for practice

To strengthen the knowledge base for evidence-based local public health, the following three recommendations can be made for regional public health reporting practice.

First, the empirical model for regional public health reporting can serve as a practice-base for producers of regional public health reports. Producers of regional public health reports may benefit from the empirical model for regional health reporting as described in Chapter 2 of this thesis. Especially the process-model for regional public health reporting (see Figure 2.2) can serve as a context-independent framework for thought to organize and optimize interaction with policy makers and other relevant stakeholders in each research step as an important precondition for regional public health reporting with policy impact. Specifically for the Dutch context, the RIVM's toolkit for a regional PHSF provides a convenient overview of products, content (such as topics, sources, analytical tools), process, and organisation. This toolkit is continuously updated and expanded with knowledge from experiences with the implementation of the empirical model for regional public health reporting in other Dutch RHS regions. However, the applicability of this toolkit is limited to the Dutch producers of regional public health reports, for its Dutch language and specific Dutch context, for example the description of the availability and validity of national, regional, and local data sources.

Second, the domains and criteria in the developed theoretical framework can be used by the producers of regional public health reports as a checklist to improve the quality of their reports. Moreover, these domains and criteria can be discussed with the

targeted users of the regional public health report, for example to reach agreement on scope and ambition of the report and to align the mutual expectations of producers and users. Eventually, these criteria may also be used by an independent organisation responsible for the quality judgement of the RHSs' regional public health reporting activities, such as the Health Care Inspectorate in the Netherlands.

Third, based on both the empirical model and theoretical framework, producers of regional public health reports should acknowledge that it takes more than epidemiologists to write a regional public health report with local policy impact. A regional public health report should integrate knowledge from research, practice, and policy, in a way that it makes sense to policy makers. It requires a scientific content that has been given significance in order to have significance for policy and a production process that takes into consideration both scientific and policy processes. Furthermore, good marketing is needed to implement the report's findings into local policy. Regional public health reporting therefore is quite an undertaking, which involves expertise from other disciplines than epidemiology, for example health promotion, social sciences, policy sciences, and communication, and other regional and local relevant stakeholders than the RHS, to add knowledge from and significance for the regional and local context.

10.4.3 Recommendations for research

To strengthen the knowledge base for evidence-based regional public health reporting, the following three recommendations can be made for future scientific research.

First, the criteria and domains in the theoretical framework for regional public health reporting should be translated into measurable indicators, by formulating standards with corresponding questions. The resulting instrument could then be used to assess the quality of regional public health reporting (relevant for producers and users), to make comparisons in the quality of public health reporting between RHSs (relevant for the Inspectorate and the Ministry), and to relate the quality indicators to the actual use of the regional health reports in making local public health policy - the ultimate 'proof of the pudding' of the usefulness of the developed theoretical framework and its quality criteria.

Second, the theoretical framework for regional public health reporting should be validated internationally. Therefore, a concept map with international experts on regional public health reporting could be constructed in a similar way as was done in this study for the Dutch context. This would also lead to more insight into the context-specific and context-independent factors for the use of regional public health reports. International standards with corresponding questions for regional public

health reporting could be formulated by subsequent translation of the international criteria and domains into measurable indicators. The resulting instrument could then be used for international benchmarking and scientific research into the policy use of the regional public health reports.

Third, further research should go into the effectiveness of regional public health reports in influencing local policy, even perhaps into their cost-effectiveness, in order to build the evidence-base for regional public health reporting, a very product that itself is intended to promote evidence-based public health policy. For the guidance of this research agenda, Nutbeam's six stages of research and evaluation could be a helpful framework, bearing in the mind the remarks Rots made with respect to practice-driven research.^{15, 16} In the problem-definition stage, research should then focus on description of the utilisation of regional public health reports and the determination of relevant factors influencing this utilisation. This means that the measurement of utilisation should further be refined and validated for this context for different concepts of use, such as the ladder of utilisation or the types of research use (conceptual, instrumental, and symbolic). Moreover, the measurement of utilisation should also be expanded towards other stakeholders or other levels of delivery, for example other local officials, health organisations, or local policy documents. In the stage of solution generation, the abovementioned translation of the domains and criteria of the theoretical framework into standards and measurable indicators should be undertaken. In the stages of innovation testing, intervention demonstration, and intervention dissemination, research should focus on the assessment of outcome as well as the understanding of the process. For the Dutch context, this would surely imply that the implementation and dissemination of the empirical model for regional public health reporting in other RHS regions should be accompanied by comparable research on the process as well as on the outcomes. Preconditions for such research are that the theoretical framework for and the utilisation of the regional public health reports are made measurable in an accepted and valid manner. In the final stage of programme management, research should focus on the sustainability of regional public health reporting, assessing costs and benefits (financial, social, political), and monitoring performance.

10.5 Concluding remarks

Regional public health reporting in the Netherlands can be a powerful tool to achieve evidence-based public health policy at the local level. The application of the principles of evidence-based medicine to public health has given rise to some important challenges, stemming from the breadth of the evidence required, the two levels of explanation (individual and population), and the length of the causal

chain.³¹ Another important challenge is assessment of local context-specific evidence and the generation of reflective evidence.³⁷ As argued by Oxman et al., global context-independent evidence is the best starting point for judgements about the impact of policies and programmes, whereas local evidence informs most other judgements about problems, options for addressing problems, and implementation strategies.³⁸ However, the current emphasis on evidence-based public health and the misperception of this concept as being ‘science-based public health’ only seems to lead to a movement in the Netherlands in the favour of practice-based public health, interpreted as based on professional judgement and experiences only, more or less ignoring the necessity of scientific evidence. This movement is further quickened by the certification of interventions by the Centre of Healthy Living and the inspection report by the Dutch Health Care Inspectorate, which both lay emphasis on the effectiveness of interventions based on global evidence, rather than on local evidence.³⁵ The followers of this movement oppose themselves to evidence-based public health, thereby threatening regional public health reporting in two ways. First, regional public health reporting aims at strengthening the knowledge base for evidence-based local public health. By devaluing evidence-based public health the demand for regional public health reporting may decrease, certainly in times of drastic cutbacks of the RHS’s budgets. Second, the development of further research into the effectiveness of regional public health reports could be at risk. And that would certainly be a pity, for this is still a rather underdeveloped field in (international) scientific research, which deserves to be further explored. Not in the least because more effective regional public health reporting forms a better basis for policy makers in local public health to make the best possible choices for health gains when distributing the scarce resources.

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Summary

General introduction

According to the Dutch law, local public health memoranda in the Netherlands should be preceded by a national comparable collection and analysis of epidemiological municipal health information to stimulate evidence-based local public health policy. These epidemiological municipal health assessments have been carried out by the Local Authorities' Regional Health Services (RHS), dedicated to the monitoring, protection, and promotion of public health. However, the epidemiological information had not been greatly used in the development of local public health policies yet. The RHSs therefore still face the challenge of how to make their epidemiological information more useful for local public health policy-making. From this perspective, two main issues arise. First, there is no scientific guidance on how to make RHS public health reporting more useful for local public health policy-making. Second, little is known about the extent to which epidemiological information is used in local and regional health policy-making, and which factors, such as the characteristics of public health reports, may influence the actual use of such information. This study addresses these two issues by putting practice into theory rather than the more common other way around. This way of working fitted perfectly the philosophy of the setting in which the study was performed: the Academic Collaborative Centre for Public Health Brabant.

The general introduction, as described in **Chapter 1**, goes more deeply into the background of the study. First, the relevance and definitions of evidence-based public health policy are introduced. The chapter states that evidence-based public health policy is needed to achieve significant health gains and a better use of scarce resources. Evidence-based is defined as 'the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of communities and populations in the domain of health protection, health maintenance and improvement (health promotion)'. Typical for evidence-based public health is a professional judgement of both contextual and scientific evidence in decision-making, acknowledging that policy makers may be informed by imperfect information. Second, the chapter describes the way evidence-based public health in the Netherlands is supported nationally by the National Institute of Public Health and the Environment (RIVM) through their Public Health Status and Forecasts Reports (PHSF), and locally by the RHSs through their epidemiological analysis of municipal health status. Third, the chapter describes how regional public health reporting by these RHSs has evolved and why the epidemiological information had not been greatly used in the development of local public health policies yet. The RHSs therefore still face the challenge of how to make their epidemiological information more useful for local public health policy-making. The chapter concludes with the overall aim of the study - to strengthen regional public health reporting as the knowledge base for evidence-based local public health

policy - and the research questions that were derived from this overall aim:

1. Can a regional variant of the national PHSFs be developed and, if so, which of its characteristics could then serve as building blocks for an empirical model for regional public health reporting?
2. What are the main quality criteria of regional public health reporting in the Netherlands?
3. How can the regional variant of the national PHSF further be improved, to enlarge policy impact?
4. What is the use and usefulness of regional epidemiological information in local policy and in scientific research?

The study was divided into three parts. In the first part of the study, regional PHSFs for the Local Authorities were developed in two pilot RHS regions on the basis of the model and experience of the national PHSF as well as on relevant theories and research literature (Chapters 2 and 3). Based on this developed empirical model and relevant research literature, a theoretical framework for the quality of regional public health reporting in the Netherlands was developed, using the method of concept mapping with experts (Chapter 4).

In the second part of the study, the developed regional PHSFs in the two pilot regions were evaluated with regard to familiarity, use, usefulness, and necessary conditions (Chapter 5). Consecutively, a feasibility study assessed the extent to which we can improve the alignment of the information provided by the regional PHSF in one pilot region and the Dutch Supply and Demand Analysis Monitor (VAAM) for the development of a cohesive information provision for policy and planning in public health and health care at the local and regional level (Chapter 6).

In the third and final part of the thesis several possibilities of how to use and value regional epidemiologic information were explored. Based on a theoretical framework for research utilisation, the actual *local policy use* of the Dutch RHSs' epidemiologic reports by municipal health officials as well as its associated factors were quantified (Chapter 7). The *scientific research use* of regional epidemiological information was illustrated by two studies, both based on existing epidemiological data collected by the RHSs on the regional level: the first answering a research question concerning personality and health inequalities (Chapter 8), and the second study answering a research question concerning the relation between domestic violence, loneliness, and personality (Chapter 9).

Part I Developing an empirical and theoretical model for regional public health reporting

The research question ‘*Can a regional variant of the national PHSFs be developed and, if so, which of its characteristics could then serve as building blocks for an empirical model for regional public health reporting?*’ was addressed in Chapters 2 and 3.

Chapter 2 describes the results of the pilot study in which regional Public Health Status and Forecasts reports (PHSFs) were developed in two Dutch pilot regions, based on the model and experience of the Dutch Public Health Status and Forecasts reports (PHSFs). The two RHSs involved were the RHS ‘Hart voor Brabant’ and the RHS ‘West-Brabant’. This study resulted in an empirical model for regional public health reporting, characterised by its 1) products, 2) content and design, and 3) underlying process and organisation. The developed empirical regional PHSF model consists of different products for different purposes and target groups. Regional and Municipal Reports aim to underpin *strategic* regional and local public health policy. Websites contain up-to-date information, aiming to underpin *tactical* regional and local public health policy by providing building blocks for translating strategic policy priorities into concrete plans of action. Numerous stakeholders are involved in the development of a regional PHSF. The developed empirical process model for a regional PHSF connects to the theoretical framework in which interaction between researchers and policy makers is an important condition for the use of research data in public health policy.

Chapter 3 describes in more detail the development and principles of the regional PHSF website: the Regional Health Compass (www.regionaalkompas.nl). This website was specifically designed to support policy makers with the translation of local health problems into concrete plans of action and it provides information about the effectiveness of interventions and local policy measures, which is needed when translating strategic policy into policies for implementation. The Regional Health Compass contributes to evidence-based local health policy because it tailors relevant national, regional, and local thematic and up-to-date information on epidemiology, policy, and interventions for local use, making this information accessible to Local Authorities.

Chapter 4 addresses the research question ‘*What are the main quality criteria of regional public health reporting in the Netherlands?*’. Based on the input of 35 relevant Dutch experts in (regional) public health reporting, we constructed a concept map as a theoretical framework for the quality assessment of regional public health reporting, indicating relevant domains and criteria. The final concept map consisted of 97 criteria, grouped into 13 clusters, and plotted in two dimensions. The first

dimension was labelled as ‘product’, ranging from ‘production’ to ‘content’, and the second dimension was labelled as ‘context’, ranging from ‘science’ to ‘policy’. The three most important clusters were 1) ‘solution orientation’, 2) ‘policy relevance’, and 3) ‘policy impact’. The clusters and criteria in the concept map can be used by the producers of regional public health reports as a checklist for improving the quality of their reports, for greater policy impact and for the benefit of evidence-based local public health policy.

Part II Improving the empirical model for regional public health reporting

The research question *‘How can the regional variant of the national PHSF further be improved, to enlarge policy impact?’* was addressed in Chapters 5 and 6.

Chapter 5 describes the evaluation of the familiarity, use, usefulness and conditions of the regional PHSF in the two Dutch pilot regions, among staff concerned and (intended) users, by means of questionnaires, (group) interviews and document analysis. The regional PHSF in both pilot regions were, in general, given a positive evaluation. Particularly significant, preconditions proved to be: good timing in relation to the local policy cycle, good structural communication about progress, planning, and decision-making, and the early involvement of the Local Authorities. The recommendations relate to: increasing familiarity with (parts of) the regional PHSF, expansion of the topics covered, more local colouring, maintaining collaboration between those involved, and more attention to planning and (internal) communication. These success factors and recommendations will be used for the further development of the next regional PHSF in both regions, as well as for the regional PHSF toolkit by the RIVM.

Chapter 6 describes the feasibility study that was set up to assess the relevance of and possibilities for aligning the regional PHSF in one pilot region with the Dutch Supply and Demand Analysis Monitor (VAAM) with the aim of developing a cohesive information provision for policy and planning in public health and primary health care at the local and regional level. The VAAM is an internet application that estimates the supply and demand for primary health care by several providers in a small geographic area, based on the area’s sociodemographic characteristics. This study showed that further alignment of both instruments (regional PHSF and VAAM) is possible only to a limited extent, though their primary users acknowledged its relevance and added value. Therefore, it was concluded that for linking public health and primary healthcare, it would be better in the first instance to invest in the dialogue between Local Authorities and primary healthcare than in (even) further supplementing and detailing the local information.

Part III Using regional epidemiological information in policy and research

The research question ‘*What is the use and usefulness of regional epidemiological information in local policy and in scientific research?*’ was addressed in Chapters 7, 8, and 9.

Using regional epidemiological information in local public health policy

Chapter 7 gives insight into what extent the RHS’s epidemiological reports are used during the development of local health memoranda and of the factors that influence this use. A survey was developed and set out among local health officials, for they had the best insight in policy processes. This survey was designed to measure three types of use: instrumental use, meaning that the research is acted upon in specific and direct ways, conceptual use, meaning that the research improves the understanding of the subject matter and related problems, and symbolic use, meaning either that research is used to justify a position or course of action for other reasons that have nothing to do with the research findings (political use), or the fact that research is being done is exploited to justify inaction on other fronts (tactical use). Results of this survey showed that in the development of local health policy, conceptual use of epidemiological information was more common than instrumental or symbolic use. Instrumental and symbolic use increased with involvement of local officials in the research process whereas conceptual use increased with involvement of the researcher in the policy process.

Using regional epidemiological information for scientific research

Chapter 8 describes a more classical epidemiological study, to illustrate the usefulness of the RHSs’ epidemiological data for scientific research that might be relevant for local public health policy. Data from two population surveys, collected for the purpose of municipal health assessment by the RHSs in the earlier mentioned two pilot regions, were used to expand our knowledge of the role of a Type D (distressed) personality as an explanation of health inequalities, aiming to quantify Type D personality’s contribution to the associations between SES and different lifestyle-related risk factors and health. Though the cross-sectional design hinders etiological inferences to be made, results suggest that Type D personality doesn’t explain the health inequalities related to a low SES, but is more likely an additional risk factor. Prevention in low SES populations may have more effect when it takes into consideration that persons with a low SES in combination with a Type D personality are at highest risk of adverse health outcomes and that Type D personalities, irrespective of their SES, need specific approaches.

Chapter 9 also illustrates the usefulness of the RHSs' epidemiological data for scientific research and describes a study that was set up to investigate whether differences in loneliness scores between individuals with a Type D (distressed) personality type and subjects without such a personality varied by domestic violence victimization. Here also, data came from a population survey, collected for the purpose of municipal health assessment by one of the pilot RHSs. The results of this study suggest that a Type D personality is related to loneliness in case of domestic victimization, implying that victim support agencies should be more aware of the victim's personality as a prognostic factor for adverse health outcomes as well as a factor that is relevant for the intervention offered.

General discussion

Chapter 10 summarizes and integrates the main findings of the study. The methodological limitations and strengths of the study are then reflected on. Consecutively, the recommendations are given for the practice of regional public health reporting and for future research and development in this area.

Main conclusions of the study

1. A regional variant of the national PHSFs could be developed in two Dutch pilot regions. The empirical model for regional public health reporting can be characterised by its 1) products, 2) content and design, and 3) underlying process and organisation.
2. Quality criteria of regional public health reporting in the Netherlands can be characterised by two important dimensions: 'product', ranging from 'production' to 'content', and 'context', ranging from 'science' to 'policy'. The final list consisted of 97 criteria, grouped into 13 clusters. The three most important clusters were 'solution orientation', 'policy relevance', and 'policy impact'.
3. To enlarge policy impact, the regional variant of the national PHSF can further be improved by increasing its familiarity, by expansion of the topics covered, by more local colouring, by maintaining collaboration, and by investing in the dialogue with between local stakeholders.
4. In local health policy, conceptual use of the RHSs' epidemiological information was more common than instrumental or symbolic use. Instrumental and symbolic use increased with involvement of local officials in the research process whereas conceptual use increased with involvement of the researcher in the policy process. The usefulness of the RHSs' epidemiological data for scientific research could be demonstrated by answering two scientific research questions using existing data of the RHSs' surveys.

Methodological limitations and strengths

The methodological limitations of this study mostly originate from its pioneering and practice-driven character because (regional) public health reporting proved to be a new and developing scientific field in public health epidemiology and policy. This makes comparisons with other scientific studies difficult. Nevertheless, the strengths of this study also stem from its pioneering and practice-driven character. This study contributes to evidence-based regional public health reporting by making evidence on this subject available for science and practice. The highlights of the new evidence this study adds are the theoretical framework for regional public health reporting, the development and quantification of outcome measures for the use of regional epidemiological information in local public health policy, and the elaborated example of an empirical model for regional public health reporting made available for the use by others through the RIVM's toolkit for a regional PHSF (www.toolkitvtv.nl). The insights developed in this study could inspire other public health researchers to improve their own (regional) public health reports. Furthermore, this study's results could increase scientific interest in building a sound evidence-base for regional public health reporting.

Recommendations for practice

To strengthen the knowledge base for evidence-based local public health, the following three recommendations can be made for regional public health reporting practice. First, the empirical model for regional public health reporting can serve as a practice-base for producers of regional public health reports. Especially the process-model for regional public health reporting (see Figure 2.2) can serve as a context-independent framework for thought to organize and optimize interaction with policy makers and other relevant stakeholders in each research step as an important precondition for regional public health reporting with policy impact. Second, the domains and criteria in the developed theoretical framework can be used as a checklist to improve the quality of their reports and as a basis for discussion with the targeted users on scope and ambition of the report by the producers of regional public health reports and for the quality judgement of the RHSs' regional public health reporting activities. Third, producers of regional public health reports should acknowledge that it takes more than epidemiologists to write a regional public health report with local policy impact.

Recommendations for research

To strengthen the knowledge base for evidence-based regional public health reporting, the following three recommendations can be made for future scientific research. First, the criteria and domains in the theoretical framework for regional public health reporting should be translated into measurable indicators, by formulating standards

with corresponding questions. Second, the theoretical framework for regional public health reporting should be validated internationally. Third, further research should go into the effectiveness of regional public health reports in influencing local policy, even perhaps into their cost-effectiveness, in order to build the evidence-base for regional public health reporting, a very product that itself is intended to promote evidence-based public health policy.

Final remarks

Chapter 10 finally concludes by stating that regional public health reporting in the Netherlands can be a powerful tool to achieve evidence-based public health policy at the local level. Even in times of drastic cutbacks of the RHS's budgets regional public health reporting and the development of further research into the effectiveness of regional public health reports should be fostered because (more effective) regional public health reporting forms a more sound basis for policy makers in local public health to make the best possible choices for health gains when distributing the scarce resources.

Samenvatting
(Summary in Dutch)

Algemene introductie

In de Nederlandse wetgeving is geregeld dat de opstelling van gemeentelijke nota's volksgezondheidsbeleid vooraf moeten worden gegaan door een verzameling en analyse van epidemiologische gegevens over de gezondheidssituatie van de bevolking, op een landelijk gelijkvormige wijze. Deze wettelijke bepaling heeft tot doel om een 'evidence-based' lokaal gezondheidsbeleid te bevorderen. De verzameling en analyse van epidemiologische gegevens op gemeentelijk niveau wordt uitgevoerd door de gemeentelijke of gemeenschappelijke gezondheidsdiensten (GGD'en), welke tot taak hebben om de volkgezondheid te bewaken, te beschermen en te bevorderen. Tot nu toe wordt de epidemiologische informatie nog onvoldoende benut bij de ontwikkeling van lokaal gezondheidsbeleid. GGD'en staan daarom voor de uitdaging om hun epidemiologische informatie beter bruikbaar te maken voor lokaal gezondheidsbeleid. Vanuit dit perspectief zijn er twee belangrijke kwesties. Allereerst is er geen wetenschappelijke richtlijn die aangeeft hoe een volksgezondheidsrapportage van de GGD beter bruikbaar gemaakt kan worden voor lokaal gezondheidsbeleid. Ten tweede is er nog maar weinig bekend over de mate waarin epidemiologische informatie wordt gebruikt bij het maken van regionaal en lokaal gezondheidsbeleid en over de factoren die hierop van invloed zijn, zoals de karakteristieken van een volksgezondheidsrapportage. Deze studie richt zich op deze twee kwesties en doet dit door van de praktijk naar de theorie te gaan, in plaats van de gebruikelijke omgekeerde weg: van theorie naar praktijk. Deze werkwijze past uitstekend bij de filosofie van de setting van waaruit deze studie werd uitgevoerd: de Academische Werkplaats Publieke Gezondheid Brabant.

Hoofdstuk 1, de algemene introductie, gaat dieper in op de achtergrond van de studie. Eerst worden de definitie en de relevantie van evidence-based publieke gezondheidszorg geïntroduceerd. Evidence-based publieke gezondheidszorg wordt gedefinieerd als 'het zorgvuldig, expliciet en oordeelkundig gebruiken van het beste bewijs dat beschikbaar is bij het nemen van beslissingen over de zorg van gemeenschappen en populaties in het domein van gezondheidsbescherming, gezondheidsbewaking en gezondheidsbevordering'. Typerend voor evidence-based publieke gezondheidszorg is een professioneel oordeel over zowel contextuele als wetenschappelijke kennis bij de besluitvorming, terwijl tegelijkertijd onderkend wordt dat beleidsmakers geïnformeerd kunnen worden door informatie die niet perfect is. Evidence-based publieke gezondheidszorg is nodig om de meeste gezondheidswinst te bereiken en de schaarse publieke middelen beter te benutten. Vervolgens wordt in Hoofdstuk 1 beschreven hoe evidence-based publieke gezondheid in Nederland nationaal wordt ondersteund door het RIVM via de Volksgezondheid Toekomst Verkenningen (VTV) en lokaal door de GGD'en via de epidemiologische analyses van de lokale gezondheidssituatie. Daarna beschrijft het hoofdstuk hoe de

regionale volksgezondheidsrapportages van de GGD'en zijn geëvolueerd en waarom de epidemiologische informatie nog onvoldoende wordt benut bij de ontwikkeling van lokaal gezondheidsbeleid. GGD'en staan daarom nog steeds voor de uitdaging om hun epidemiologische informatie beter bruikbaar te maken voor lokaal gezondheidsbeleid. Het hoofdstuk besluit met het algemene doel van deze studie - om regionale gezondheidsrapportage te versterken als de kennisbasis voor evidence-based lokaal gezondheidsbeleid - en met de onderzoeksvragen die van dit algemene doel zijn afgeleid:

1. Kan een regionale variant van de nationale VTV in praktijk ontwikkeld worden en zo ja, welke karakteristieken hiervan kunnen dan dienen als de bouwstenen voor een empirisch model voor regionale volksgezondheidsrapportages?
2. Wat zijn de belangrijkste kwaliteitscriteria voor regionale volksgezondheidsrapportages in Nederland?
3. Hoe kan de regionale variant van de nationale VTV verder verbeterd worden om de impact op het beleid verder te vergroten?
4. Wat is het gebruik en de bruikbaarheid van regionale epidemiologische informatie in lokaal beleid en in wetenschappelijk onderzoek?

De studie bestaat uit drie delen. In het eerste deel werden regionale VTV's voor gemeenten ontwikkeld in twee pilot GGD-regio's op basis van het model en de ervaring van de nationale VTV en op basis van relevante theorieën en onderzoeksliteratuur (Hoofdstuk 2 en 3). Gebaseerd op dit ontwikkelde empirische model en relevante onderzoeksliteratuur werd vervolgens een theoretisch kader ontwikkeld voor de kwaliteit van regionale volksgezondheidsrapportages in Nederland. Hiervoor is de methode van concept mapping met experts gebruikt (Hoofdstuk 4).

In het tweede deel van de studie werden de ontwikkelde regionale VTV's in de twee pilot regio's geëvalueerd op bekendheid, gebruik, bruikbaarheid en randvoorwaarden (Hoofdstuk 5). Daarna werd in een haalbaarheidsstudie gekeken naar relevantie en mogelijkheden voor de afstemming tussen de regionale VTV en de Nederlandse Vraag-Aanbod-Analyse-Monitor (VAAM) met het oog op een samenhangende informatievoorziening voor beleid en planning in de publieke en eerstelijnszorg op lokaal en regionaal niveau (Hoofdstuk 6).

In het derde en laatste deel van deze studie werden verschillende mogelijkheden verkend voor het gebruik en de waarde van regionale epidemiologische informatie. Op basis van een theoretisch kader voor het gebruik van onderzoek, werden het feitelijk gebruik van epidemiologische informatie van GGD'en in het lokale beleid gekwantificeerd, evenals de factoren die hierop van invloed waren (Hoofdstuk 7). Het gebruik van regionale epidemiologische informatie van GGD'en voor wetenschappelijk

onderzoek werd geïllustreerd door twee studies: de eerste beantwoordde een onderzoeksvraag over persoonlijkheid en sociaaleconomische gezondheidsverschillen (Hoofdstuk 8), de tweede beantwoordde een onderzoeksvraag over huiselijk geweld, eenzaamheid en persoonlijkheid (Hoofdstuk 9).

Deel I De ontwikkeling van een empirisch en theoretisch model voor regionale volksgezondheidsrapportages

De onderzoeksvraag *‘Kan een regionale variant van de nationale VTV in praktijk ontwikkeld worden en zo ja, welke karakteristieken hiervan kunnen dan dienen als de bouwstenen voor een empirisch model voor regionale volksgezondheidsrapportages?’* wordt behandeld in Hoofdstuk 2 en 3.

Hoofdstuk 2 beschrijft de resultaten van de studie waarin regionale VTV’s werden ontwikkeld in twee Nederlandse pilot regio’s, op basis van het model en de ervaring van de nationale VTV. De twee betrokken GGD’en waren de GGD Hart voor Brabant en de GGD West-Brabant. Deze studie resulteerde in een empirisch model voor regionale volksgezondheidsrapportages dat wordt gekarakteriseerd door 1) producten, 2) inhoud en vormgeving en 3) proces en organisatie. Het empirische regionale VTV model bestaat uit verschillende producten voor verschillende doelen en doelgroepen. Regionale en Gemeentelijke Rapporten richten zich op de onderbouwing van *strategisch* regionaal en lokaal volksgezondheidsbeleid. Websites bevatten up-to-date informatie en richten zich op de onderbouwing van *tactisch* regionaal en lokaal volksgezondheidsbeleid. De websites reiken bouwstenen aan voor de vertaling van strategische beleidsprioriteiten in concrete actieplannen. Veel actoren zijn betrokken bij de ontwikkeling van een regionale VTV. Het empirische procesmodel voor een regionale VTV sluit aan bij het theoretisch kader waarin interactie tussen onderzoekers en beleidsmakers een belangrijke voorwaarde is voor het gebruik van onderzoeksgegevens in volksgezondheidsbeleid.

Hoofdstuk 3 beschrijft in meer detail de ontwikkeling en de principes van de website van de regionale VTV: het Regionale Kompas Volksgezondheid (www.regionalkompas.nl). Deze website werd specifiek ontworpen om beleidsmakers te ondersteunen bij de vertaling van lokale gezondheidsproblemen in concrete actieplannen. Daarbij geeft de website informatie over de effectiviteit van interventies en lokale beleidsmaatregelen. Deze informatie is nodig voor de vertaling van strategisch beleid in plannen voor implementatie. Het Regionaal Kompas Volksgezondheid draagt bij aan evidence-based lokaal gezondheidsbeleid omdat het nationale, regionale en lokale thematische en up-to-date informatie over epidemiologie, beleid en interventies toespitst op lokaal gebruik, zó dat deze informatie toegankelijk wordt voor gemeenten.

Hoofdstuk 4 gaat in op de onderzoeksvraag ‘*Wat zijn de belangrijkste kwaliteitscriteria voor regionale volksgezondheidsrapportages in Nederland?*’. Met inbreng van 35 relevante Nederlandse deskundigen op het terrein van (regionale) volksgezondheidsrapportages werd in deze studie een concept map samengesteld. Deze concept map dient als een theoretisch kader voor de kwaliteitsbeoordeling van regionale volksgezondheidsrapportages en benoemt hiervoor de relevante domeinen en clusters. De uiteindelijke concept map bestond uit 97 criteria, gegroepeerd in dertien clusters en geplott in twee dimensies. De eerste dimensie kreeg het label ‘product’ en varieerde van ‘productie’ tot ‘inhoud’. De tweede dimensie kreeg het label ‘context’ en varieerde van ‘wetenschap’ tot ‘beleid’. De drie belangrijkste clusters waren 1) ‘oplossingsgericht’, 2) ‘beleidsrelevantie’ en 3) ‘beleidsimpact’. De clusters en criteria in de concept map kunnen door de makers van regionale volksgezondheidsrapportages worden gebruikt als een checklist om de eigen rapportages te verbeteren, voor meer beleidsimpact en voor een evidence-based lokaal volksgezondheidsbeleid.

Deel II De verbetering van het empirische model voor regionale volksgezondheidsrapportages

De onderzoeksvraag ‘*Hoe kan de regionale variant van de nationale VTV verder verbeterd worden om de impact op het beleid verder te vergroten?*’ wordt behandeld in Hoofdstuk 5 en 6.

Hoofdstuk 5 beschrijft de evaluatie van de bekendheid, gebruik, bruikbaarheid en randvoorwaarden van de regionale VTV in twee Nederlandse pilot regio’s. Deze evaluatie werd uitgevoerd onder betrokkenen en (beoogde) gebruikers door middel van vragenlijsten, (groeps)interviews en een documentenanalyse. De regionale VTV’s in beide pilot regio’s werden in het algemeen positief beoordeeld. Als belangrijke randvoorwaarden kwamen vooral naar voren: een goede timing in relatie tot de lokale beleidscyclus, goede en structurele communicatie over voortgang, planning en besluitvorming, en vroegtijdige betrokkenheid van gemeenten. De aanbevelingen richten zich op het vergroten de bekendheid van (gedeelten) van de regionale VTV, uitbreiding van het aantal behandelde onderwerpen, het behouden van de samenwerking tussen de betrokken disciplines en organisaties, en meer aandacht voor planning en (interne) communicatie. Deze succesfactoren en aanbevelingen zullen zowel worden gebruikt bij de verdere ontwikkeling van de volgende regionale VTV in beide regio’s als voor de toolkit voor een regionale VTV van het RIVM (www.toolkitvtnl.nl).

Hoofdstuk 6 beschrijft de haalbaarheidsstudie die werd opgezet om de relevantie en mogelijkheden te achterhalen voor de afstemming van de regionale VTV met

de Nederlandse Vraag-Aanbod-Analyse-Monitor (VAAM) met het oog op een samenhangende informatievoorziening voor beleid en planning in de publieke gezondheidszorg en eerstelijnszorg op lokaal en regionaal niveau. De VAAM is een internetapplicatie die op basis van sociodemografische gegevens het aanbod en de vraag naar eerstelijnszorg voor verschillende zorgaanbieders schat in een klein geografisch gebied. De resultaten lieten zien dat afstemming van de informatievoorziening in de VAAM en de regionale VTV door hun gebruikers wel wenselijk wordt gevonden, maar op dit moment nog maar beperkt mogelijk is. Geconcludeerd werd dat voor het verbinden van de publieke gezondheidszorg en de eerstelijnszorg in eerste instantie beter geïnvesteerd kan worden in de dialoog tussen gemeenten en eerste lijn dan in het (nog) verder aanvullen en detailleren van de lokale informatie.

Deel III Het gebruik van regionale epidemiologische informatie in beleid en onderzoek

De onderzoeksvraag *‘Wat is het gebruik en de bruikbaarheid van regionale epidemiologische informatie in lokaal beleid en in wetenschappelijk onderzoek?’* wordt behandeld in Hoofdstuk 7, 8 en 9.

Het gebruik van regionale epidemiologische informatie in lokaal volksgezondheidsbeleid

Hoofdstuk 7 geeft inzicht in de mate waarin epidemiologische GGD-rapportages worden gebruikt tijdens de ontwikkeling van de gemeentelijke nota's volksgezondheidsbeleid en de factoren die dit gebruik beïnvloeden. Een vragenlijst werd ontwikkeld en uitgezet onder gemeenteambtenaren volksgezondheid omdat zij het beste inzicht hebben in de beleidsprocessen. De vragenlijst was ontworpen om drie types van gebruik te meten: 1) instrumenteel gebruik, waarbij onderzoek op een specifieke en directe wijze tot actie leidt, 2) conceptueel gebruik, waarbij onderzoek leidt tot een beter begrip van het onderwerp en de gerelateerde problematiek, en 3) symbolisch gebruik, waarbij onderzoek wordt gebruikt om een standpunt of gedragslijn voor andere redenen die niets met het onderzoek te maken hebben te rechtvaardigen (politiek gebruik) of wanneer het gegeven dat er onderzoek plaatsvindt wordt benut om inactiviteit op andere fronten te rechtvaardigen (tactisch gebruik). De resultaten lieten zien dat conceptueel gebruik van epidemiologische informatie meer voorkomt bij de ontwikkeling van lokaal gezondheidsbeleid dan instrumenteel of symbolisch gebruik. Instrumenteel en symbolisch gebruik namen toe wanneer gemeenteambtenaren betrokken waren in het onderzoeksproces, terwijl conceptueel gebruik toenam wanneer onderzoekers in het beleidsproces waren betrokken.

Het gebruik van regionale epidemiologische informatie voor wetenschappelijk onderzoek

Hoofdstuk 8 beschrijft een meer klassieke epidemiologische studie ter illustratie van de bruikbaarheid van epidemiologische gegevens van de GGD voor wetenschappelijk onderzoek dat relevant zou kunnen zijn voor lokaal volksgezondheidsbeleid. De gegevensbestanden van twee enquêtes in de algemene populatie, verzameld door de GGD'en in de eerder genoemde twee pilot regio's om de gezondheidssituatie in de gemeenten te monitoren, werden gebruikt om onze kennis te verruimen over de rol van een Type D (distressed) persoonlijkheid als een verklaring van sociaaleconomische gezondheidsverschillen. De studie had tot doel om te kwantificeren wat de bijdrage van een Type D persoonlijkheid is aan de associaties tussen een lage sociaaleconomische status en verschillende leefstijlgerelateerde risicofactoren en gezondheid. Ondanks dat er geen etiologische gevolgtrekkingen gemaakt kunnen worden door de cross-sectionele opzet van de studie, duiden de resultaten erop dat een Type D persoonlijkheid geen verklaring biedt voor sociaaleconomische gezondheidsverschillen, maar meer een additionele risicofactor is. Preventie in populaties met een lage sociaaleconomische status (SES) zou dan meer effect kunnen hebben wanneer er rekening mee wordt gehouden dat personen met een lage SES in combinatie met een Type D persoonlijkheid het hoogste risico hebben op ongunstige gezondheidsuitkomsten en dat Type D persoonlijkheden, ongeacht hun SES, een specifieke wijze van benaderen nodig hebben.

Hoofdstuk 9 illustreert eveneens de bruikbaarheid van de epidemiologische gegevens van de GGD'en voor wetenschappelijk onderzoek. Het beschrijft een studie die werd opgezet om te onderzoeken of verschillen in eenzaamheidscores tussen personen met en zonder een Type D (distressed) persoonlijkheid varieerden naar slachtofferschap van huiselijk geweld. Ook hier waren de gegevens afkomstig van een enquête in de algemene populatie, verzameld door een van de pilot GGD'en om de gezondheidssituatie in de gemeenten te monitoren. De resultaten van deze studie duiden erop dat bij slachtoffers van huiselijk geweld en bij Type D persoonlijkheden eenzaamheid vaker voorkomt. Bovendien hebben slachtoffers met een Type D persoonlijkheid een extra risico op emotionele eenzaamheid. Dit impliceert dat instanties voor slachtofferhulp zich meer bewust zouden moeten zijn van de persoonlijkheid van het slachtoffer als prognostische factor voor ongunstige gezondheidsuitkomsten, maar ook dat deze instanties persoonlijkheid zien als een factor welke relevant is voor de interventie die wordt aangeboden.

Algemene discussie

Hoofdstuk 10 vat de belangrijkste bevindingen van de studie integraal samen. Vervolgens wordt hierin gereflecteerd op de methodologische beperkingen en sterke punten van de studie. Daarna worden aanbevelingen gegeven voor de praktijk van regionale volksgezondheidsrapportages en voor toekomstig onderzoek en ontwikkeling op dit terrein.

Belangrijkste conclusies van de studie

1. Een regionale variant van de nationale VTV kon worden ontwikkeld in twee Nederlandse pilot regio's. Het empirische model voor regionale volksgezondheidsrapportages kan worden gekarakteriseerd door 1) producten, 2) inhoud en vormgeving en 3) proces en organisatie.
2. Kwaliteitscriteria voor regionale volksgezondheidsrapportages in Nederland kunnen worden gekarakteriseerd door twee belangrijke dimensies: 'product', variërend van 'productie' tot 'inhoud', en 'context', variërend van 'wetenschap' tot 'beleid'. De uiteindelijke lijst bevatte 97 criteria, gegroepeerd in 13 clusters. De drie belangrijkste clusters waren 1) 'oplossingsgericht', 2) 'beleidsrelevantie' en 3) 'beleidsimpact'.
3. Voor meer beleidsimpact kan de regionale variant van de nationale VTV verder worden verbeterd door de bekendheid van (gedeelten) van de regionale VTV te vergroten, het aantal behandelde onderwerpen uit te breiden, de samenwerking tussen de betrokken disciplines en organisaties te behouden en te investeren in de dialoog tussen lokale beleidsactoren.
4. Bij de ontwikkeling van lokaal gezondheidsbeleid komt conceptueel gebruik van epidemiologische informatie meer voor dan instrumenteel of symbolisch gebruik. Instrumenteel en symbolisch gebruik namen toe wanneer gemeenteambtenaren betrokken waren in het onderzoeksproces, terwijl conceptueel gebruik toenam wanneer onderzoekers in het beleidsproces waren betrokken. De bruikbaarheid van de epidemiologische gegevens van de GGD voor wetenschappelijk onderzoek kon worden gedemonstreerd door het beantwoorden van twee wetenschappelijke onderzoeksvragen met bestaande gegevens van de GGD-enquêtes.

Methodologische beperkingen en sterke punten

De methodologische beperkingen komen vooral voort uit het pioniers- en praktijkgestuurde karakter van deze studie omdat (regionale) volksgezondheidsrapportages een nieuw en zich ontwikkelend wetenschappelijk terrein in epidemiologie en beleid van publieke gezondheid bleek te zijn. Dit maakt vergelijkingen met andere wetenschappelijke studies moeilijk. Desondanks komen ook de sterke punten van deze studie voort uit het pioniers- en praktijkgestuurde karakter ervan. Deze studie

draagt bij aan evidence-based regionale volksgezondheidsrapportages door kennis hierover beschikbaar te maken voor wetenschap en praktijk. De meest opvallende bijdragen van deze studie aan de huidige kennis zijn 1) het theoretisch kader voor regionale volksgezondheidsrapportages, 2) de ontwikkeling en kwantificering van uitkomstmaten voor het gebruik van regionale epidemiologische informatie in lokaal volksgezondheidsbeleid, en 3) het uitgewerkt voorbeeld van een empirisch model voor een regionale volksgezondheidsrapportage dat beschikbaar werd gemaakt voor gebruik door anderen door de RIVM toolkit voor een regionale VTV (www.toolkitvtv.nl). De inzichten die in deze studie zijn ontwikkeld kunnen andere volksgezondheidsonderzoekers inspireren om de eigen (regionale) volksgezondheidsrapportages te verbeteren. Bovendien kunnen de resultaten van deze studie leiden tot meer wetenschappelijke interesse om te werken aan een grondige evidence-base voor regionale volksgezondheidsrapportage.

Aanbevelingen voor de praktijk

Om de kennisbasis voor evidence-based publieke gezondheid op lokaal niveau te versterken kunnen de volgende drie aanbevelingen worden gedaan voor de praktijk van regionale volksgezondheidsrapportages. Allereerst kan het empirische model voor regionale volksgezondheidsrapportage dienen als een praktijkvoorbeeld voor de makers van regionale volksgezondheidsrapportages. Vooral het procesmodel (zie Figuur 2.2) kan dienen als een context-onafhankelijk denkkader om in iedere onderzoeksstap de interactie met beleidsmakers en andere relevante actoren te organiseren en te optimaliseren als een belangrijke randvoorwaarde voor de beleidsimpact van de regionale volksgezondheidsrapportage. Ten tweede kunnen de domeinen en criteria in het ontwikkelde theoretische kader door de makers van regionale volksgezondheidsrapportages gebruikt worden als een checklist om de kwaliteit van de rapportage te verbeteren en om als basis te dienen voor de discussie met de beoogde gebruikers over het reikwijdte en de ambitie van de rapportage. De domeinen en criteria kunnen ook worden gebruikt voor de beoordeling van de kwaliteit van de volksgezondheidsrapportages van GGD'en. Ten derde zouden de makers van regionale volksgezondheidsrapportages moeten onderkennen dat voor het schrijven van een regionale volksgezondheidsrapportage met beleidsimpact op lokaal niveau meer nodig is dan alleen epidemiologen.

Aanbevelingen voor onderzoek

Om de kennisbasis voor evidence-based regionale volksgezondheidsrapportages te versterken, kunnen de volgende drie aanbevelingen worden gedaan voor toekomstig wetenschappelijk onderzoek. Allereerst zouden de criteria en domeinen in het theoretische kader voor regionale volksgezondheidsrapportages vertaald moeten

worden in meetbare indicatoren, door hiervoor standaarden te formuleren met overeenkomstige vragen. Ten tweede zou het theoretische kader voor regionale volksgezondheidsrapportages internationaal gevalideerd moeten worden. Ten derde zou verder onderzoek gericht moeten worden op de effectiviteit van regionale volksgezondheidsrapportages voor het beïnvloeden van lokaal beleid, misschien zelfs op de kosteneffectiviteit ervan, om een evidence-base op te bouwen voor regionale volksgezondheidsrapportages, een product dat nota bene zelf bedoeld is om evidence-based werken in de publieke gezondheid te bevorderen.

Tot slot

Hoofdstuk 10 besluit door te stellen dat regionale volksgezondheidsrapportages in Nederland een krachtig hulpmiddel kunnen zijn voor het bereiken van een evidence-based publieke gezondheid op het lokale niveau. Zelfs in tijden van drastische bezuinigingen op het budget van GGD'en zouden regionale volksgezondheidsrapportages en de ontwikkeling van verder onderzoek naar de effectiviteit hiervan juist gekoesterd moeten worden omdat (meer effectieve) regionale volksgezondheidsrapportages een verantwoorde basis vormen voor beleidsmakers in de lokale publieke gezondheid om de best mogelijke keuzes te maken voor gezondheidswinst bij de verdeling van de schaarse middelen.

Dankwoord

Dankwoord

Net als een regionale volksgezondheidsrapportage is een proefschrift schrijven een heel proces. En ook hier is de input van vele actoren in dat proces mede bepalend voor de kwaliteit ervan. Nu het proefschrift er (bijna) ligt, is de tijd gekomen om dit proces te evalueren. En dan constateer ik bij mezelf een grote dankbaarheid. Voor de mogelijkheid om werkzaam te zijn in de context van beleid, praktijk én onderzoek, zowel lokaal, regionaal, nationaal als internationaal. Maar bovenal ben ik dankbaar voor de steun die ik daarbij in de afgelopen jaren heb ervaren van allerlei mensen om me heen. Het zijn er teveel om ze op deze plek allemaal te noemen. En toch waag ik een poging. En verontschuldig me gelijk voor als ik iemand hiermee te kort doe.

Als eerste wil ik Frans Damen bedanken. Als afdelingsmanager Gezondheidsbevordering van de GGD'en Hart voor Brabant én West-Brabant was hij vanaf het eerste begin enthousiast over een structurele samenwerking met Tranzo en wilde daarin graag investeren. En ook al zag hij mij liever als zijn opvolger, hij respecteerde mijn wens om te promoveren en bood me bovendien hiervoor alle ruimte en mogelijkheden. Dit had ook voor hem persoonlijke consequenties, maar dat had hij er graag voor over. Frans, weet dat ik me dat heel goed gerealiseerd heb. Jij was een ware leider.

Hans van Oers introduceerde binnen de Academische Werkplaats het idee van een regionale VTV voor beide GGD'en. Ik herinner me nog het gesprek waarin ik hem toevertrouwde dat ik graag zelf wilde promoveren. Meteen suggereerde Hans dat de regionale VTV een goed onderwerp hiervoor zou zijn. En hoewel ik dat met hem eens was, had dit dan wel de consequentie dat ik voor beide GGD'en ook de projectleiding op me zou nemen. Een complex innovatietraject in twee GGD'en leiden, gecombineerd met een promotietraject terwijl ik ondertussen mijn nieuwe team in een kantelende afdeling Gezondheidsbevordering als Kenniscentrum moest inrichten en vormen. Hier was ik aanvankelijk toch ook heel huiverig voor. En terecht. Het is maar goed dat je soms niet overziet waar je aan begint. Hans, net als Frans heb je nooit aan me getwijfeld. Tenminste, niet dat ik het in de gaten had. In de eerste jaren was je een rots in de branding en kon ik vol vertrouwen bouwen op jouw ervaring en kennis als ex-GGD'er en VTV'er. Later werd je steeds meer een zeer gewaardeerde collega. We voerden niet alleen discussies over het promotieonderzoek, maar steeds meer ook over de overeenkomsten tussen en de samenhang van de epidemiologische functie van de GGD en het centrum VTV bij het RIVM. De verbinding tussen lokaal, regionaal en landelijk is wat ons betreft wel tot stand gekomen. Daarbij bewonder ik je lange termijn visie en je vermogen om tot de essentie van de zaak te komen. Dat het daarbij ook erg gezellig was, maakte het zelfs nog aangenamer.

Als coördinator van de Academische Werkplaats was het niet meer dan logisch dat Ien van de Goor mijn co-promotor zou worden. Vooral in de laatste jaren van het promotie onderzoek heeft Ien daarin voor mij een hele belangrijke rol gespeeld. Haar wetenschappelijke blik is voor mij van onschatbare waarde geweest. Telkens wist ze met haar kritische houding mij zover te krijgen dat ik de wetenschappelijke verslaglegging op een hoger, abstracter, plan tilde. Ik gun het Ien dan ook van harte dat ze nu bijzonder hoogleraar (en promotor) is geworden, ze heeft het verdiend! Ien, je gaf me vaak aan dat ik niet moest twijfelen aan de wetenschappelijke kwaliteit van mijn werk. Dank daarvoor. Jouw betrokkenheid bij 'onze' Academische Werkplaats is enorm en betekent veel voor mij. Net als Hans zag ik jou steeds meer als een zeer gewaardeerde collega. Daarbij herinner ik me vooral de buitenlandse congressen waarin we veel plezier hadden tijdens allerlei diepzinnige en onzinnige gesprekken. Onze overeenkomsten in werkhouding en de combinatie van werk en privéleven gaven hiervoor meer dan voldoende aanleiding. De verbinding tussen onderzoek en praktijk is wat ons betreft wel tot stand gekomen. Daarbij bewonder ik je vermogen om je nog enorm op te winden over alle onrecht op allerlei terreinen. Ik hoop nog heel lang met je te kunnen samenwerken.

Natuurlijk bedank ik ook Henk Garretsen. We kennen elkaar al heel lang en onze hernieuwde ontmoeting was mede aanleiding voor de oprichting van 'onze' Academische Werkplaats. Als epidemioloog, Brabander en liefhebber van carnaval, dansen, PSV en de Rolling Stones hadden we natuurlijk al veel gemeen. Nu delen we ook nog de liefde voor Tranzo en het werken aan de verbinding tussen praktijk en wetenschap. En dat we nu collega's zijn, is natuurlijk erg 'gezellig'. Henk, heel erg bedankt voor je enthousiasme en de mogelijkheden die je me biedt. Je bent doodgewoon heel bijzonder. Dankzij jouw leiding is Tranzo een top departement; ik prijs me gelukkig dat ik daarvan deel uitmaak en hoop dat nog heel lang te doen.

De leden van de projectgroep 'regionale VTV' wil ik graag bedanken voor het enorme werk dat zij hebben verricht in de eerste twee jaar van mijn onderzoek. Zo'n complex innovatietraject in zo'n korte tijd afronden is geen sinecure. Toch hebben we het samen voor elkaar gekregen. Ina Klingenberg, Peggy van den Hoogen, Eveline van Eck, Susanne Hogendoorn, Sylvia Soeterboek, Marcella Boverhof, Bert Hesdahl en Marjan de Kluijver: hartelijk dank hiervoor. Emmy van den Heuvel wil ik bedanken voor haar werk aan het Regionaal Kompas Volksgezondheid en de Gemeentelijke Rapporten bij de GGD Hart voor Brabant, Wendy Jeeninga voor het uitvoeren van de procesevaluatie en Ingrid Bodeutsch voor het ondersteunen bij de brainstormsessies. En natuurlijk mag ik mijn RIVM-collega's hierbij niet vergeten. Vooral Henriëtte Giesbers, René Poos, Fons van der Lucht en Carola Schrijvers hebben veel werk voor de regionale VTV's verricht. Het was een plezier en een voorrecht om met jullie samen te werken!

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Tijdens het onderzoek kreeg ik steeds meer collega's van de Academische Werkplaats. Het was me een waar genoegen om met samen hen te werken aan de verbinding tussen praktijk en wetenschap; dank allen hiervoor. De verbinding met Joyce de Goede was echter een heel bijzondere. Niet alleen werkte zij mee aan de basis van de regionale VTV's, haar promotieonderzoek was bovendien onlosmakelijk verbonden met het mijne. Daarnaast bevonden we ons allebei in de positie van 'science-practitioner'. Al deze verbanden gaven aanleiding tot vele bevlogen discussies. Joyce, bedankt voor je humor en inspiratie. Je was en bent een genot om mee te werken!

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Mijn paranimfen zijn mij heel dierbaar. Ellen Anzion en Erica van der Putten zijn collega's en vriendinnen vanaf het moment dat ik in 1990 bij de GGD Brabant-Noordoost als junior-epidemioloog aan de slag ging. Zij waren getuige van mijn persoonlijke en professionele ontwikkeling. Ik ben zeer vereerd dat jullie ook nu aan mijn zijde staan. En ik ben jullie heel dankbaar, gewoon, door er voor mij te zijn.

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Marja van Bon-Martens

Oss, 25 april 2011

About the author

About the author

Marja van Bon-Martens was born on September 8th 1964, in 's-Hertogenbosch, the Netherlands. She attended secondary school in 's-Hertogenbosch (Gymnasium β , Jeroen Bosch College) where she passed her exam in 1982. From 1982 to 1986 she studied Medicine at Nijmegen University.

Directly after obtaining her Master's degree, she started as a staff member at the Department of Epidemiology, Nijmegen University (1986-1990) and Preventicon, Utrecht University (1990) in the field of population screening. During this period, she followed several courses in Epidemiology and Biostatistics.

In 1990 Marja started working for the Regional Health Service (RHS) Brabant-Noordoost as an epidemiologist. In this position, she was engaged in all kinds of epidemiological research to support regional and local policy-making, such as health surveys, incidence studies, analysis of existing registrations, development of regional and local health profiles, and evaluation of interventions. During this period, she also followed the one year post-graduate Epidemiology programme of the Institute of Epidemiology & Biostatistics, Erasmus University Rotterdam, under the authority of the Ministry of Welfare, Health and Culture (1992-1993). As a result, she was registered by the Netherlands Epidemiological Society as a Master of Science in Epidemiology in 1993. In the period 1997-2004 she held the position of Secretary of the Epidemiology Section of the Association of Netherlands RHSs. Since 1996 she holds different positions in (the predecessor of) the Local and National Health Monitor project. In 2009, she became a board member of the Netherlands Epidemiological Society.

Since 2001, when the RHS Brabant-Noordoost merged with the RHSs region 's-Hertogenbosch and Midden-Brabant into the RHS Hart voor Brabant, Marja started working as a team manager for the team 'Epidemiology, Local Health Policy and Screening' until 2005 and since then for the team 'Knowledge Centre for Public Health'. In 2003 she took the initiative for the Academic Collaborative Centre for Public Health Brabant as a long term alliance between practice and science, together with Tranzo, Tilburg University (Henk Garretsen) and the RHS West-Brabant (Frans Damen and Ina Klingenberg). Since 2005 she started to work there as a science-practitioner to write a PhD study proposal on the development of regional Public Health Status and Forecasts reports. This proposal was granted by ZonMw (the Netherlands organisation for health research and development) as part of the Academic Centres of Public Health Programme and has led to the research presented in this thesis.

In addition to her professional activities, Marja works as a volunteer for the SCVO (Stichting CarnavalsViering Oss). She is married to Marc van Bon, who is an entrepreneur in internet services. Together, they have two daughters: Ilse (1992) and Claire (1995).

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