The public health workforce: An assessment in the Netherlands

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CHAPTER 2
Enumeration of the public health workforce in the Netherlands; insight in the size and composition is limited

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Chapter 2

INTRODUCTION

In the Netherlands, preventive care as delivered by public health has provided an important contribution to population health. Examples include organised programs to prevent infectious diseases, preventive youth health care, municipal health policies, and programs for early detection of cancer. Bearing in mind the importance of public health for population health, it is noteworthy that important data are still lacking on this sector, e.g. how many people work in public health, and the types and levels of their competencies.

It is known that the Dutch registry of healthcare professionals in 2011 included 38,677 health care physicians, of whom 2122 were occupational health physicians, 1050 insurance physicians and 934 were public health physicians (in comparison: there were 11,870 registered general practitioners). Whether these public health physicians actually work in public health and which and how many other professionals (e.g. health promotion specialists and epidemiologists) are active in this sector is unknown.

This is remarkable because the workforce is one of the five relevant parts that define the quality of public health. (1) Insight into the size and composition of the public health workforce is necessary to support public health workforce planning and development and to improve the quality and appropriateness of public health services. For physicians such guidance has been available for some time: for example, the Advisory Committee on Medical Manpower Planning ('Capaciteitsorgaan') estimates the expected need for physicians and, based on this estimate, makes recommendations for the required training inflow of physicians. Unfortunately, other occupations in public health lack such systematic guidance.

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In the Netherlands, the Public Health Act ['Wet Publieke Gezondheid'] describes public health as ‘…the health protecting and health promoting measures for the population or specific groups thereof, including disease prevention and early detection of diseases’. (2) The focus on preventive measures through collective interventions distinguishes public and preventive care (public health) from providing medical care (curative sector).

The need to gain insight into the public health workforce (and their competencies) and what the future demand of public health professionals will be, has increased considerably over the last 10 years. This resulted in the production of 7 inventories, each from different parts of public health, for example a specific professional group such as health promotion specialists, or a specific organization, e.g. the municipal health service.

This study examines whether these inventories, when combined, provide sufficient insight into the size and composition of the public health workforce.

ABSTRACT

Objective
To gain insight into the size and composition of the public health workforce in the Netherlands, to guide development and improve the future quality and provision of public health.

Design
Document analysis.

Method
Analysis of the estimates presented in 7 reports published between 2003 and 2010 in the Netherlands, presenting workforce descriptions, occupations and roles, definitions, and total numbers.

Results
Based on our comparison of the data in the reports, we estimated the total size of the Dutch public health workforce at 12,000 fte. However, this estimate is inaccurate because the definition of the workforce, the occupations selected and the methods of data collection differed between the reports. Moreover, definitions of the workforce ranged from all municipal health services to a broad selection of related facilities and organizations. The number of roles/occupations in each report ranged from 1-15. A registry exists only for public health physicians.

Conclusion
Despite 7 reports covering 7 years, we still have limited insight into the size and composition of the public health workforce in the Netherlands. Therefore, it is not possible to assess whether the capacity is sufficient now and in the future to fulfil the required quality and provision of public health services.
**Table 1** Characteristics of the 7 reports showing the size and composition of the occupational groups in public health care in the Netherlands in the period 2003-2009.

<table>
<thead>
<tr>
<th>Title</th>
<th>Organisation</th>
<th>Year</th>
<th>Description</th>
<th>Role or function</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge infrastructure public health</td>
<td>Advisory Council on Health Research (RGO)</td>
<td>2003</td>
<td>Inventory of the Dutch public health knowledge infrastructure</td>
<td>Researchers</td>
<td>Questionnaire study among universities, other research institutions and municipal health services</td>
</tr>
<tr>
<td>Workforce planning public health</td>
<td>Netherlands Public Health Federation (NPHF)</td>
<td>2007</td>
<td>Development of tool to assess the public health workforce to support public health workforce planning</td>
<td>Health promotion specialists, public health nurses, inspectorate child care, epidemiologists</td>
<td>Questionnaire study among organisations of public health professionals</td>
</tr>
<tr>
<td>Future developments health promotion and prevention</td>
<td>The Netherlands Institute for Health Promotion and Disease Prevention (NIGZ)</td>
<td>2008</td>
<td>Analysis of future developments for health promotion and prevention</td>
<td>Health promotion specialists</td>
<td>Online questionnaire distributed among health promotion specialists working within selected organisations</td>
</tr>
<tr>
<td>Benchmark data municipal health services</td>
<td>National Association of Local Public Health Services (GGD Nederland)</td>
<td>2008</td>
<td>Listing of all employees working at municipal health services in the Netherlands</td>
<td>Public health nurses, physicians, social workers, psychiatric nurses, health promotion specialists, health scientists, epidemiologists, social workers, ambulance staff, environmental public health specialists, medical technical workers, information officials, psychologists, quality officers, preventive dental care officers, occupational therapists, other roles</td>
<td>Questionnaire distributed among human resource departments of all municipal health services</td>
</tr>
</tbody>
</table>

**The Netherlands organisation for health research and development: public health knowledge infrastructure (ZonMw)**

Assessment of the current public health knowledge infrastructure in order to support distribution and implementation of public health knowledge

<table>
<thead>
<tr>
<th>Title</th>
<th>Organisation</th>
<th>Year</th>
<th>Description</th>
<th>Role or function</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capaciteitsplan 2010, sub-report Social Medicine</td>
<td>The Advisory Committee on Medical Manpower Planning (Capaciteitsexp)</td>
<td>2010</td>
<td>Estimation and advice on training inflow of public health physicians, occupational health physicians and insurance physicians</td>
<td>Profile-physicians of the Royal Dutch Medical Association, (KNMG), public health physicians, occupational health physicians, insurance physicians</td>
<td>Compulsory registry of Profile-physicians of the Royal Dutch Medical Association, (KNMG), public health physicians, occupational health physicians, insurance physicians</td>
</tr>
<tr>
<td>Roles, occupations and training in public health</td>
<td>Board for the Professions and Training in Health Care (BIOG)</td>
<td>2010</td>
<td>List of current roles, occupations and educational programmes in public health, in order to explore future needs</td>
<td>Profile-physicians of the Royal Dutch Medical Association, (KNMG), public health physicians, occupational health physicians, insurance physicians, public health nurses, Masters of Public Health, epidemiologists, health promotion specialists</td>
<td>Existing data sources, organisations of professionals and websites</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title</th>
<th>Organisation</th>
<th>Year</th>
<th>Description</th>
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</thead>
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<td>Questionnaire distributed among human resource departments of all municipal health services</td>
</tr>
</tbody>
</table>
METHODS

Due to the lack of a central registration of all roles/occupations in the public health sector, we searched for inventories made during the last 10 years. We used (internet) search engines and also asked members of the Netherlands Public Health Federation for existing data. Inventories were selected that specifically addressed public health, or the areas of expertise mentioned in the Dutch Public Health Act, i.e. social medicine, epidemiology and health promotion. From the periodically updated inventories, the most recent data were selected. Of all available inventories we examined how the workforce was described, which definitions or descriptions of the roles/occupations were used, and the numbers of persons associated with each of these occupations. Subsequently, an estimate was made of the total size of each occupation recorded in full-time equivalents (fte). To do this, all data from all the available documents were pooled, grouped by role or occupation, and analyzed for accuracy and comparability.

In order for this research (and possible follow-up) to have adequate representation within the field of public health, the Public Health Federation assigned an advisory board consisting of representatives from the broad field of public health. Prior to starting this research, the advisory board evaluated and approved the study. It also contributed to evaluation of the available documents, and commented on the results.

RESULTS

The 7 available inventories compiled by different organizations were published between 2003 and 2010. (3-9) Table 1 presents details of these documents and the methods by which their data were collected. The inventories differed in their selection of roles/occupations, ranging from 1 professional group up to 15 functions and/or occupations. Four of the 7 inventories included multiple occupations or roles and, in total, more than 40 different roles and occupations were reported.

Definition of the public health workforce

Table 2 presents an overview of the descriptions of the public health workforce, as used in the inventories. Of the 7 documents, 4 referred to the description of public health as stated in the Public Health Act. Two documents did not describe the workforce but, instead, described a specific occupational group (e.g. public health physicians) or a specific organization (e.g. municipal health organizations). The Netherlands Institute for Health Promotion and Disease Prevention [NIGZ] chose a selection of organizations which include employees that perform work that fits a job description that aims for health promotion.
Table 3 | Overview of the size and composition of professionals included in seven reports

<table>
<thead>
<tr>
<th>Professionals</th>
<th>Advisory Council on Health Research (RGO)</th>
<th>Netherlands Public Health Federation (NPHF)</th>
<th>The Netherlands Institute for Health Promotion and Disease Prevention (RIZZ)</th>
<th>National Association of Local Public Health Services (GGDNL)</th>
<th>The Netherlands organisation for health research and development (ZonMw)</th>
<th>The Advisory Committee on Medical Manpower Planning (Capaciteitsorgaan)</th>
<th>Board for the Professions and Training in Health Care (BBOG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physicians</td>
<td>670</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Profile-physician preventive Youth healthcare</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Profile-physician Infectious disease control</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Profile-physician Forensic medicine</td>
<td></td>
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<tr>
<td></td>
<td>Profile-physician Tuberculosis control</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Profile-physician Environmental public health</td>
<td></td>
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<tr>
<td></td>
<td>Profile-physician indication &amp; advise</td>
<td></td>
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<tr>
<td></td>
<td>Profile-physician policy &amp; advise</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Public health physician*</td>
<td>914</td>
<td>965</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Occupational health physician*</td>
<td>1968</td>
<td>2167</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Insurance physician*</td>
<td>933</td>
<td>1072</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurses</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Public health nurses</td>
<td>1990</td>
<td>1500</td>
<td>2400</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Researchers</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Researcher public health, university</td>
<td>152</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>Researcher other, university</td>
<td>120</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Researcher public health, other research institution</td>
<td>405</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>Researcher municipal health service</td>
<td>54</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domains</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Infectious disease control</td>
<td></td>
<td></td>
<td></td>
<td>750</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Domains

- Preventive youth healthcare
- Hygiene care
- Forensic medicine
- Environmental public health
- Public mental health care
- Epidemiology
- Health promotion
- Healthy public policy advise
- Medical Emergency Preparedness and Planning

Other

- Environmental medical officer
- Assistant physician
- Health promotion specialist
- Epidemiologist
- Master of public health
- Policy advisor
- Medical technical officer
- Speech therapist
- Ambulance staff
- Information official/ documentalist
- Preventive dental care officer

TOTAL

| Physicians | 731 | 2975 | 1119 | 6600 | 6880-6950 | 4427 | 9807 |

*Number of working physicians
We arrived at this estimate through the following steps:

1. The sum of all researchers (from the registry of the Advisory Council on Health Research, RGO), plus public health physicians (from the registry of the Advisory Committee on Medical Manpower Planning, Capaciteitsorgaan) plus health promotion specialists (from the registry of the Institute for Health Promotion and Disease Prevention, NIGZ);

2. The municipal health service benchmark, [GGD NL] mapped all their employees, including physicians and health promotion specialists. After subtraction of these latter two categories from the total number of employees in the municipal health services, the estimate of the number of municipal health workers was added to the result of step 1;

3. The Board for the Professions and Training in Health Care (CBOG) used the numbers of the above-mentioned registries, but also presented numbers of ‘masters of public health’; this latter group was added to the result of step 2.

Data from the Netherlands Organization for Health Research and Development (ZonMw) were not used in the calculations, as this inventory only made use of data derived from other documents.

The documents from the Advisory Committee on Medical Manpower Planning (Capaciteitsorgaan) and the Board for the Professions and Training in Health Care (CBOG) reported only absolute numbers instead of ftes; these absolute numbers were used to compile the total estimate.

**DISCUSSION**

By combining data from the 7 documents published between 2003 and 2010, we estimated the size of the public health workforce at 12,000 fte. However, this is an inaccurate estimate due to lack of similarities in: i) definition of the workforce, ii) the selection of occupations/roles and their descriptions, and iii) differences in the methods of data collection between the registries.

**Definition of the work field**

The considerable variation in registries illustrates the difficulty in defining the public health workforce. Of the 7 inventories, 4 used the Public Health Act to define the workforce. However, in this Act, the description of public health does not translate to specific occupation or roles, or to specific organizations. The ‘traditional’ working fields within public health (e.g. preventive youth healthcare, infectious disease control, and health promotion), and their roles and organizations, are another optional starting point for defining the workforce. Although some registries used this as a starting point, this resulted in insufficient insight, as some public health tasks are organized within the curative sector.

Examples of this include the preventive activities carried out by general practitioners, and the health counselling and screening of pregnant women by midwives. The roles and organizations outside the public health sector were not consistently included in the registries that took the ‘traditional’ working fields within public health as a starting point.

Many of the differences between the registries can be traced back to differences in definition of the public health work field. For example, the report of the Advisory Council on Health Research (RGO) was aimed at researchers and included researchers in the broad domain of public and occupational health, while other reports, such as that from the Netherlands Institute for Health Promotion and Disease Prevention (NIGZ), ignored medical care as a sector in which health promotion specialist may work.

Policy functions within local or national government, the Health Care Inspectorate and health insurers were not included in the registries, unless these employees are qualified and registered as public health physicians, a qualification that is not necessarily required for working in these roles.

**Selection of occupations and roles**

The registries differed in the selection of occupations and roles; a total of over 40 different roles and occupations were mentioned. Also, because for very few occupations where the definitions were specified beforehand, it is unclear whether the same names for certain roles were used and if they were used to describe the same roles and tasks. For example, it remains unclear whether the task description ‘epidemiologist’ in the registry of the municipal health services is the same as or similar to the ‘epidemiologist’ as used in the report of the Board for the Professions and Training in Health Care (CBOG). Also, several names of occupations and educational titles are used interchangeably, such as public health policy advisor and ‘Master of Public Health’. Without specific criteria or definitions it is impossible to establish whether the categories are in fact distinct or, to some extent, overlap each other.

**Data collection**

The lack of proper registration of occupations and roles in the public health care is another barrier to proper sizing of the public health workforce. A compulsory register is only available for physicians, public health physicians and so-called profile physicians of the Royal Dutch Medical Association (KNMG).

**Limitations**

A limitation of our approach is the selection of documents that are explicitly related to public health or specific areas of expertise mentioned in the Public Health Act. Therefore, it is possible that data of professionals working in, for example, occupational health, e.g. occupational health nurses or occupational health psychology have been missed. If this information was not included in the documents (although it was available) then our estimated 12,000 fte is probably an underestimation of the actual size of the public health workforce.
Requirements for a realistic assessment

Our research shows that 7 existing reports (and all the data combined) do not provide sufficient insight into the capacity of the public health workforce. To assess the public health workforce properly, a clear definition of the public health work field is needed. A few Anglo-Saxon countries have defined the work field by identifying essential public health operations (or core functions) for public health. Core functions are services that necessarily belong to public health and are essential to achieve the aims of public health. In the various countries involved, the idea of defining core functions was based on consensus among a relatively large group of professionals.

Core functions can be translated into core competencies; these can be applied for several purposes, such as assessing the quality of local health services and the development of public health education programs. American and English studies on the ‘public health workforce’ show that essential public health operations can also be used as basis for workforce assessment. (10,16)

RECOMMENDATIONS

In the Netherlands, essential public health operations have not yet been defined. Defining the essential public health operations, based on consensus of large groups of professionals from the workforce, will probably be a good starting point for assessing the public health workforce. In this way, the workforce will be defined based on content characteristics, i.e. separately from specific occupations or roles, and irrespective of the institute or organization in which they are performed.

CONCLUSIONS

Despite analysis of 7 reports covering 10 years, we have limited insight into the size and composition of the public health workforce in the Netherlands. Therefore, it is not possible to assess whether the current capacity, in relation to the required quality and performance of public health, will be sufficient now and in the future.

Therefore, we advise to take first steps to acquire this insight by clearly defining the scope and essential public health operations.


15. Public health practice in Australia today, the Australian Health Ministers’ Advisory Council in June 2000