

Short communication

REGIONAL POPULATION HEALTH MONITORING AT THE NORTH RHINE-WESTPHALIA CENTRE FOR HEALTH, GERMANY

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ABSTRACT

A federal country such as Germany requires capacity for population health monitoring, not only at the national level but also at the regional and local levels. North Rhine-Westphalia (NRW), one of the 16 states in Germany, has a long history of regional monitoring of population health. We describe the development and organization of the regional health information

system in NRW to augment the exchange of good practices at the subnational level.

Since 1997, population health monitoring in NRW has been regulated by law. Its comprehensive data and information base is continuously maintained and updated for regular monitoring and reporting activities, as well as for supporting local actors in population health monitoring.

Despite the introduction of well-established tools for population health monitoring, NRW still faces several challenges in regional population health monitoring. Regular knowledge exchange in European networks with a regional public health focus is required to overcome these challenges.

Keywords: REGIONAL POPULATION HEALTH MONITORING, HEALTH INFORMATION SYSTEM, HEALTH INDICATORS, HEALTH REPORTS, KNOWLEDGE EXCHANGE

BACKGROUND

Political and administrative decisions on health are made at the national level in many countries. A subdivision of responsibilities in decision-making on health care, social care or health promotion between the national and subnational levels is common in Europe – not just for federally organized countries (1). This division of responsibilities requires capacity for routine regional population health monitoring to enable evidence-informed decision-making.

Unfortunately, knowledge exchange and capacity-building activities in population health monitoring are scarce and rarely focus on the subnational level. Moreover, information on subnational health information systems in European countries is often not available in English, which restricts the exchange of good practices. To overcome this lack of knowledge exchange, we describe the development of regional

capacity in population health monitoring in North Rhine-Westphalia (NRW), Germany, followed by a description of the building blocks of the NRW system.

LOCAL CONTEXT AND INITIAL MILESTONES

NRW is one of the 16 states (NUTS-1 level (NUTS: Nomenclature of Territorial Units for Statistics)) in Germany and has about 17 million people. The population size of its 53 municipalities (NUTS-3 level) ranges from about 100 000 to about 1 million inhabitants.

The development of capacity for population health monitoring in NRW started in the 1980s when demands for regional health-related policy advice were increasing (2). In 1990, for the first time in Germany, a regional health report was published by a predecessor of

today's NRW Centre for Health. In 1991, a set of health indicators was defined, which still forms the basis of regional population health monitoring in all states of Germany. In addition to activities at the regional level, the promotion of local population health monitoring started in 1992. In 1997, population health monitoring activities in NRW and its municipalities were formalized in the Public Health Service Act (ÖGDG) (3). This law stipulates population health monitoring and regular reporting as the basis for health-related policy planning.

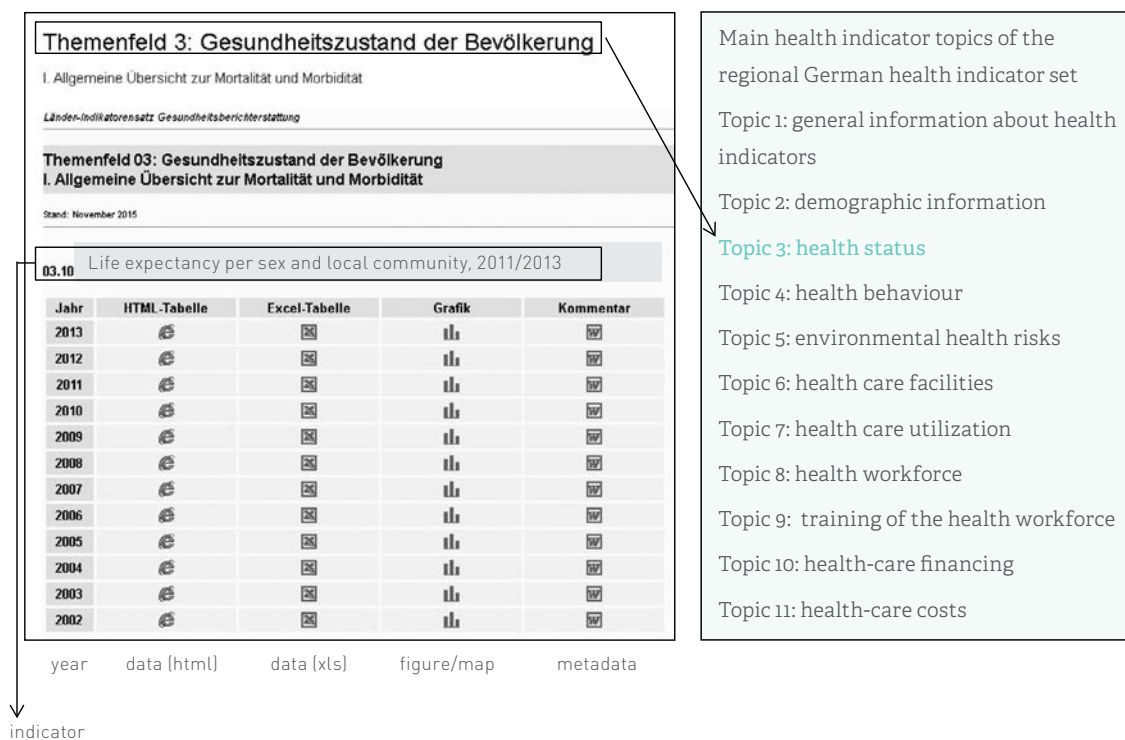
Since then, the regional public health institute (now the NRW Centre for Health, www.lzg.nrw.de), which is a subordinate agency of the health ministry in NRW, is responsible for population health monitoring in the region as well as for preparing the state health report. Population health monitoring is based on systematic and continuous data collection, maintenance of a comprehensive indicator set, and regular monitoring of the population's health status, health determinants, and health care system capacities. The target groups are policy-makers, stakeholders, local public health authorities and the public at large.

THE INFORMATION BASE

HEALTH INDICATORS

In 2003, NRW coordinated the task of revising and updating the set of common indicators for the German states (4). The latest version of this set has 350 indicators. The metadata of each indicator include the option to assess comparability to other European indicator sets (as examples, the World Health Organization European Health for All database, European Core Health Indicators). The NRW Centre for Health regularly updates these indicators with NRW data from about 30 data providers. Around 80 of these indicators are also available at the local level (NUTS-3) and can be used for local monitoring and health reporting. Since 2007, all of these health indicators have been available online (5). They are provided as downloadable tables and graphs, and are accompanied by metadata to facilitate their use and interpretation (Fig. 1).

FIG. 1. ONLINE REPOSITORY OF REGIONAL HEALTH INDICATORS IN NORTH RHINE-WESTPHALIA, GERMANY, USING THE INDICATOR LIFE EXPECTANCY AS AN EXAMPLE



Source: NRW Centre for Health (https://www.lzg.nrw.de/themen/gesundheit_berichte_daten/gesundheitsindikatoren/indikatoren_laender/themen3_1/index.html)

TOOLS FOR ANALYSIS

The NRW Centre for Health supports local population health monitoring and reporting by providing an annually updated software data tool called GBE-Stat. This contains hospital discharge statistics, mortality statistics, rehabilitation and retirement statistics, disability statistics, data on long-term care, statistics on incapacity to work, and data from the epidemiological cancer registry in NRW. The software enables individual selection of ICD-10 codes and retrieval of mortality and prevalence rates (and also incidence rates for data from the cancer registry) by year, local entity, sex and 5-year age groups. It provides age-standardized rates, time trends and maps.

HEALTH INTERVIEW SURVEYS

Since 2003, annual telephone health interview surveys (computer-assisted telephone interviews (CATI)) have been conducted in NRW. About 2000 participants – a representative sample of German-speaking adults living in NRW – are interviewed each year. Information on self-assessed health, existing chronic diseases, impairments, and utilization of health care and preventive services is collected along with sociodemographic characteristics, which facilitates the analysis of inequalities in terms of social determinants of health. Moreover, flexible modules are added depending on topics of current interest in public health and policy.

CHILD AND ADOLESCENT HEALTH

Information on child and adolescent health is provided by yearly local school health examinations that aim to assess whether or not a child is sufficiently healthy to attend school. In addition to visual and hearing acuity, the kinetic and cognitive development as well as the health status of each child is examined by physicians and specially trained nurses. Data from standardized school entrance examinations cover the total population aged 5–6 years in the year before school entry. From a population health monitoring perspective, the data are extremely valuable for assessing the health and developmental status of children in NRW and for allocating public health resources related to child health at the local level. Documentation and analysis of these data are some of the most long-standing tasks of the NRW Centre for Health, with the first computer-supported analysis dating back to 1966 (6). To assure quality, the local data undergo plausibility checks at the NRW Centre for Health.

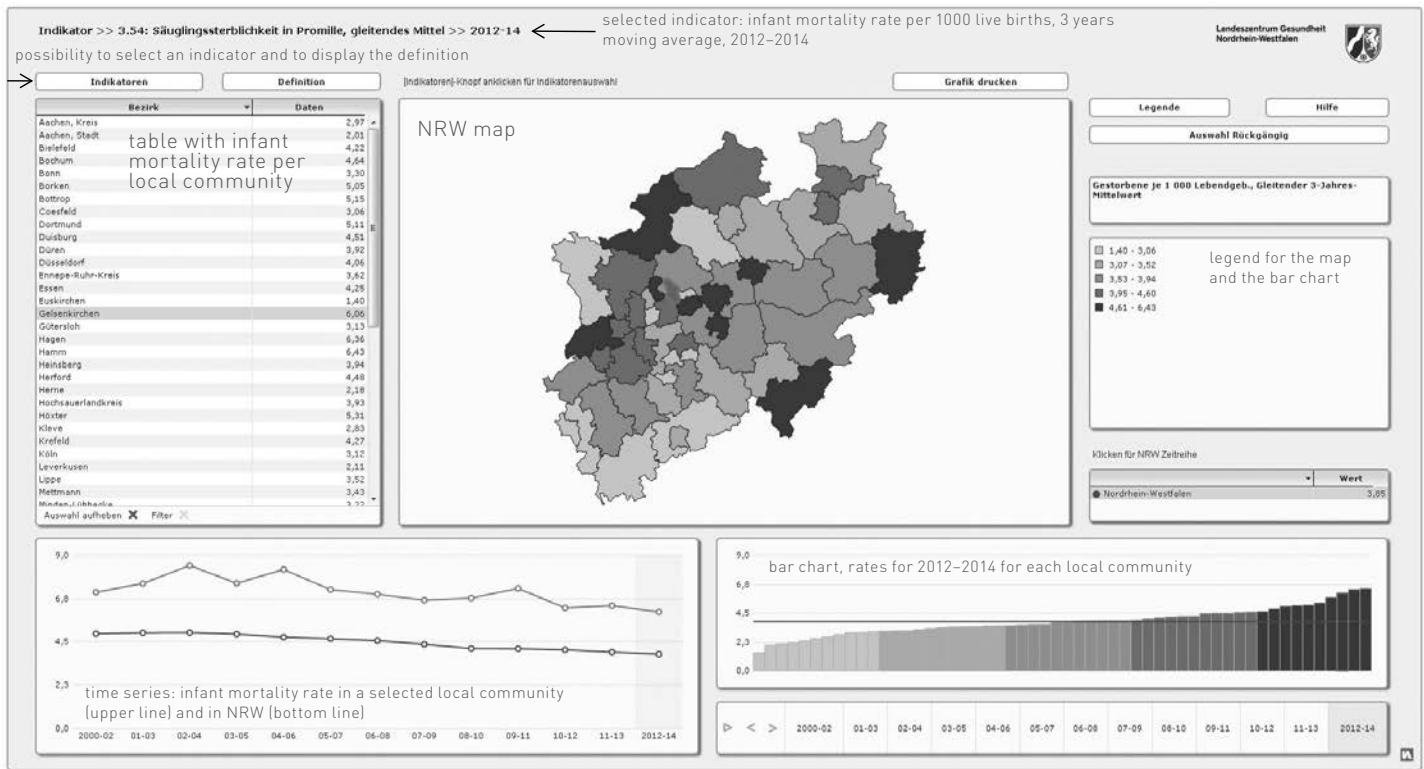
After the data are checked and analysed, the results are shared with the municipalities as interactive reports. Extracts from these reports are also published on the NRW Centre for Health website (7). The interactive reports contain more than 800 tables for each municipality. They are the information base for local health-reporting activities on child health. The data are also used for calculating 11 regional health indicators and, as required by Section 34 of the Infectious Disease Control Act (IfSG) (8), for reporting the vaccination status of pupils via the NRW Centre for Health to the national level.

MONITORING AND REPORTING ACTIVITIES

Updates of the health indicators are closely linked to the regular assessment of changes over time, space or population groups. To support the monitoring of time trends and health inequalities in NRW, interactive maps and visualization tools are provided online (9). The tools enable comparison of data between different municipalities as well as comparison of data from a municipality with the NRW average (Fig. 2). Moreover, selected NRW data can be compared with those of other German states.

The NRW Centre for Health supports the state health ministry on an ad hoc basis with up-to-date information on the health status and existing health inequalities, and publishes general as well as specific health reports. The NRW state health reports address challenges to the health status of the population such as health inequalities between the municipalities in NRW or increases in chronic diseases such as diabetes or depression. These reports are prepared by the NRW Centre for Health on behalf of the state ministry of health. They comprise a core part that provides general health information and a flexible part on selected topics such as multimorbidity, migrant health or regional variations in health. Special health reports address topics that are particularly relevant for population health with respect to their potential for prevention and quality of care. In the near future, reporting activities of the NRW Centre for Health will include short topic-specific online health reports that will be regularly updated, attractively displayed and linked to various NRW health indicators.

FIG. 2. INTERACTIVE MAP AND VISUALIZATION TOOL IN NORTH RHINE-WESTPHALIA, TOOL: INSTANTATLAS™



Source: NRW Centre for Health (<https://www.lzg.nrw.de/nocms/gesundheitsberichterstattung/nrw-kreisprofile/SM/atlas.html?select=05111000>)

SUPPORT FOR LOCAL ACTORS

The support for local public health authorities demands more than the provision of local data and information. To support knowledge exchange among the 53 NRW municipalities, a common online database was established that enables sharing of local public health reports. Moreover, the NRW Centre for Health organizes working group meetings for experts who are active in local population health monitoring. These meetings provide the opportunity to exchange experiences and information between local actors. An annual population health monitoring conference for local-level actors is conducted for sharing and discussing current trends in population health monitoring. Topics covered during the past conference were, for example, population health monitoring at the sublocal level and intersectoral public (health) reporting.

ACTIVITIES AT THE EUROPEAN LEVEL

The NRW Centre for Health – as well as its predecessor institutes – has been involved in past regional health information projects that were cofunded by the European Commission, especially during the 2000s. These projects offered ample opportunities to discuss regional population health monitoring issues, which was of added value for regional activities (for example, selection of indicators, presentation of health information) and for international comparisons. The ISARE and I2SARE projects, to give but one example, focused on selecting and assembling relevant health inequality indicators in the regions of Europe (1). Among others, ISARE/I2SARE defined NUTS levels relevant for regional comparisons at the international level. In Germany, in the context of NRW, the first regional level of interest is NUTS-1 followed by NUTS-3. Unfortunately, regional health data provided by Eurostat are routinely provided at the NUTS-2

level, which is irrelevant for regional population health monitoring in Germany. This example shows the relevance of representing the regional level in an international setting and the constant need for exchange. However, possibilities for regional exchange are diminishing. According to our knowledge, the Public Health Monitoring and Reporting section of the European Public Health Association, the World Health Organization European Health Information Initiative, the World Health Organization Regions for Health Network (of which the NRW Centre for Health is a member), and the World Health Organization European Healthy Cities Network are currently the only European public health networks that support knowledge exchange on population health monitoring. Only the last two of these networks focus on regional and local issues.

ADDED VALUE OF REGIONAL POPULATION HEALTH MONITORING

Inequalities in population health often have an impact at the local level, which underlines the necessity of having health indicators for regional/local population health monitoring. The indicator shown in Fig. 2 offers a practical example: the highlighted community had the highest infant mortality rates in NRW at the beginning of this century. This observation led to the formation of a multidisciplinary working group in the respective municipality in 2006, and the initiation of various actions that aimed to reduce infant mortality and sudden infant deaths (10). During 2012–2014, the community documented the lowest infant mortality rate in 10 years, even though it remained higher than that at the NRW level (Fig. 2).

THE CHALLENGES AHEAD

The NRW health information system has a long history of, and various tools and resources for, population health monitoring but it also faces several challenges. These include acquiring data for small-scale health monitoring, and supporting the development of suitable monitoring and reporting routines at the local level, establishing routine monitoring approaches for health inequalities based on the social determinants

of health, and developing information and tools for intersectoral decision-making as well as the capacity to keep the pace with new trends in knowledge translation and data visualization.

CONCLUSION

Regional population health monitoring in NRW comprises a comprehensive information base, tools to facilitate health monitoring, and health reports that explain current trends and differences in population health. It also serves as a platform for capacity-building and knowledge exchange. However, the list of challenges shows that much still needs to be done and that regional population health monitoring in NRW could benefit from experiences in other regions. To strengthen regional capacities in population health monitoring, the support of international networks on regional public health matters and a strong focus on subnational activities in population health monitoring are highly important.

Acknowledgements: We are grateful for the suggestions and comments received by the editors and the two reviewers. We would like to thank the data providers for supporting us in the maintenance of regional health indicators, and the local actors in NRW for their close cooperation.

Source of funding: None declared.

Conflicts of interest: None declared.

Disclaimer: The views expressed in this publication are those of the authors alone, and do not necessarily represent the decisions or policies of the World Health Organization

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