DEFINING THE VISION FOR HARMONIZED AND INTEROPERABLE INFORMATION SYSTEMS FOR HEALTH FOR EUROPE

04

Introduction

Reliable and timely health information is the foundation of effective public health action, working towards the goal of universal health coverage. It is imperative for countries aiming to use their limited resources wisely *(108)*. Data and information are needed to inform policy decisions, in the design of programme interventions, and for monitoring and evaluation but may be unavailable or not fit for purpose *(109)*. The rapid provision of reliable information is equally key to dealing with emergent diseases and other acute health events, ultimately saving lives *(110)*.

There are three key elements that, if designed well, interlink to provide the high quality and relevant evidence required to advance meaningful public health action. These are health information, health research and knowledge translation and are discussed in this chapter, followed by a discussion of the initiatives being taken by WHO and its Member States at the regional level to encourage a harmonized and interoperable information system for Europe that will underpin sustainable change to achieve the goals of Health 2020 and the SDGs.

Developing information systems for health

Measuring in public health

In public health, "data" usually refers to statistics reported from health care facilities, survey data or data collected through observational studies. Distinctions can be made between routinely reported data and data that are collected at certain times or over a specific period of time as part of a special study or survey. Both routine and non-routine data, as well as data from research systems, are required and contribute to a fuller picture of any given public health issue *(111)*.

When data are analysed and interpreted, their *use* characterizes them as information, i.e. "facts that have been arranged and/or transformed to provide the basis for interpretation and conversion into knowledge" *(112,* p. 61*)*.

There is a general bias towards quantitative data and information, such as descriptions of health status and mortality rates. Statistical associations between health outcomes and risk or protective factors are also frequently used in assessments of the effectiveness of public health interventions *(113)*. While statistics are undeniably valuable – being described as "the eyes of the policy-maker" by one senior official *(114)* – approaches in the WHO European Region such as Health 2020 *(4)* and health in all policies *(113)*, suggest that the concepts of *health data* and *health information* should be expanded *(113,* p.13*)*.

In order to fully capture the nature of health concerns and ultimately change public health outcomes, health data and information need to move beyond strict quantitative formats to re-

flect social and environmental determinants of health and other data, as suggested in the previous chapter on new sources of evidence (see Chapter 3).

In this respect, the active engagement of civil society in participatory and voluntary e-governance processes are necessary to create information, and ordinary citizens may also be central data producers and interpreters; e.g. in crowdsourced public health research *(115)*.

Data from existing sources can also be used to generate new information. An example of this so-called "secondary use" of data *(116)* is the development of summary measures for population health. This is an important approach that attempts to simplify complex information about diseases such as risk factors, the likelihood of resulting disability or other harm (morbidity), or death (mortality). Box 4.1 outlines some of the commonly used summary measures.

Box 4.1. Overview of summary measures of health

There are various summary measures that can be used, based on health expectancies or health gaps, including:

- Healthy life years

- Disability-adjusted life expectancy

- Disability-adjusted life years.

These measures can be developed to compare population health across communities and over time and provide a fuller picture of which diseases, injuries and risk factors contribute to poor health in a specific population. This is probably the most common use of summary measures.

This information can then be used to assist in decision-making, including the prioritization of funding and the allocation of other resources, and assess which information or sources of information are missing, uncertain or of low quality.

Source: Devleesschauwer B, Maertens de Noordhout C, Smit GSA, Duchateau L, Dorny P, Stein C et al. *(117)*.

The disability-adjusted life year (DALY) has emerged as the most important summary measure of population health *(117)*. By integrating DALYs into official national data collection systems, comparable estimates based on recent local data can be made, as has been done in the Netherlands and Australia *(117)*. However, limitations with regard to harmonization, timeliness, inclusiveness and accessibility of databases may present obstacles to effective integration and secondary usage *(118)*. To catalyse the secondary use of data, it is necessary to reduce the burden of data collection on health care providers to ensure timely reporting, as well as to find workable ways to access health insurance data and utilize new health technologies. But to improve the use of all this available data and health information, it is vital to include a systems perspective.

Health information systems and information systems for health

Health information systems that provide reliable and timely health information are essential not just for measuring the health impact of policies and interventions, but also to be able to track progress towards implementing universal health coverage and reaching international health targets. However, few countries have sufficiently strong, effective and well-used health information systems that support adequate monitoring of progress towards achieving the SDGs. A good health information system has four key functions:

- data generation
- compilation
- analysis and synthesis
- communication and use.

Health information systems enable decision-makers at all levels to identify problems and needs, and make evidence-informed decisions. They can be considered as the backbone of health systems as they enable the performance and effectiveness of health systems to be regularly monitored and hence guide the development of strategies to improve *(119)*.

A systemic and systematic way of thinking about health information creates a more integrated approach. Recently, the concept of information systems for health has been introduced, which offers a more comprehensive perspective. They are "an integrated effort for the convergence of interconnected and interoperable systems, data (including health and vital statistics), information, knowledge, processes, standards, people, and institutions, supported by information, digital and communication technologies that interact (or help) … for better policy- and decision-making processes in public health systems" *(120,* p. 29*)*.

Information systems for health focus on the *use* of information in decision-making, building on the foundation of solid and reliable health information systems while taking a broader approach that includes data from non-health sources and technology, such as promoting innovation and the use of affordable applications for digital health[8], including telemedicine, m-health and e-learning. They provide a national – rather than a health – perspective, and involve other sectors (e.g. educational, economic) in relation to health in all policies *(113)*.

Consistent integration and accessible and open data must be central to each area of the information system for health, with data collected in

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8   The terms eHealth and digital health are used interchangeably in this report, reflecting their evolution and the discussion among Member States at the 71st World Health Assembly.

a well-coordinated manner to minimize overlaps and allow datasets to be combined *(121)*.

From data to practical health information

The transformation of data into health information[9] is mediated by many social and economic factors *(118)*, such as financial constraints on collecting public health data. These factors may impair the quality of the resulting information, while new developments may facilitate information-creation processes, e.g. information technology advances that enable large volumes of data to be processed and analysed in shorter periods of time *(122)*.

In order to gain a deep conceptual understanding of factors that influence health systems and policies, policy-makers require in-depth, detailed descriptions of why policies and interventions are or are not effective. These need to address questions on the usability, meaningfulness, feasibility and appropriateness of these policies and interventions.

Despite the strength of summary measures like those described in Box 4.1, scientific criteria alone are rarely sufficient to persuade policy-makers, who must also consider policy context, stakeholder perceptions and societal values *(123)*. Thus, data should be presented so as to emphasize their relation to past trends, current policy priorities and fiscal considerations, with the further development of data and information collection oriented towards outcomes *(121)*.

Presentation is key; this ranges from "the most common static graphs, charts and maps through to infographics and complex interactive graphs. However, visualization is not a straightforward task and it is essential that the underlying information is represented accurately and consistently throughout" *(124,* p. 15*)*. Presentation can add value to health information packaging "by using application tools such as models and simulations to fill gaps and present scenarios" *(124,* p. ix*)*.

Information can also be conveyed indirectly through secondary channels such as the media. Providing data in flexible and customizable formats can further facilitate the use of health information *(118)*. The European Health Information Gateway (see Box 4.2) can assist countries in many of these areas.

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9   "Health information" refers to all information, data, research and evidence that determines health and facilitates policy-making. The activities necessary to obtain health information and bring this information into the health policy-making process can be described as "public health monitoring and reporting". The term "health information systems" includes all activities and resources related to public health monitoring and reporting. It also includes some less tangible elements necessary for operating a health information system, such as governance mechanisms and legal frameworks, interinstitutional relationships and values.

Box 4.2. The WHO European Health Information Gateway – a wealth of information at your fingertips

"The countries of the WHO European Region have benefited greatly from the rapid expansion of the Gateway. Open, transparent, well-organized and comparable health information allows not just for international comparisons but more importantly for using it in shaping policy decisions and more effective management at the country level. This is what we are doing extensively in Malta where we have placed digital health high on the agenda."

The Honourable Christopher Fearne, Deputy Prime Minister of Malta and Minister of Health.

The European Health Information Gateway is a platform for disseminating health information in its broadest sense. It is one of the key products of the WHO European Health Information Initiative to improve access to relevant and integrated health information. A bilingual platform, it allows easy access and search in English and Russian through data, qualitative information and reference documents on a variety of topics in public health. In addition to interactive data visualizations and an intelligent search engine, the Gateway also offers an application programming interface to enable advanced users to connect directly to its data warehouse, and a WHO European Health Statistics mobile application.

The Gateway has been designed with the ambition to bring the information closer to its users, to allow integrated access to health information, to enable dynamic comparisons and exploration across countries and indicators, to make the information understandable through blog commentaries, and to make the information reusable and shareable as graphics, datasets, embeddable parts of webpages and social media messages. By March 2018, the Gateway had been available to the public for two full years, during which time it experienced a quadrupling of traffic and a rapid gain in popularity in the Russian-speaking part of the Region. The Gateway is frequently evaluated for functionality and user-friendliness (usability) by a variety of audiences, from national health information counterparts, WHO country offices, WHO staff and external academic users. The feedback is considered in the planning of monthly development cycles. This approach to Gateway development allows major issues to be quickly addressed and improvements regularly implemented, thus making rapid steps forward in its development, while keeping it aligned with the needs of its audiences.

At the time of writing, the Gateway has integrated 12 databases into the platform, including the European Health for All (HFA) database, and has several more datasets queued for inclusion during 2018. The HFA database is the Region's collection of indicator data that are directly collected from the European Member States or from other international organizations, and it was established in the late 1980s. The Gateway allows integrated search across all

Box 4.2 contd.

databases, but at the same time also provides advanced specialized tools for targeted datasets, such as the "HFA explorer" and "SHIELDS". The HFA explorer is an advanced data exploration tool for the 1200 indicators in the family of the HFA databases, and enables a concentrated look into the indicators that have been established in the European Region for monitoring the health situation. SHIELDS (Synergistic Health In Emergencies Ladder Development Scale) is a practical platform to present the monitoring and evaluations and to steer, enhance, monitor and upscale those capacities of Member States to implement the International Health Regulations 2005.

Enhancing research systems for health

Health research and new types of evidence

As we have seen, data and health information play an important role in decision-making, but research findings are also necessary to identify what works and how it works in order to guide policy and action towards an improvement in health and well-being. Health information and health research are not merely complementary; these systems are interdependent. A well-functioning health information system feeds into health research, while a strong health research system can identify systemic problems and potential improvements.

Health research has been broadly defined as "the generation of new knowledge using the scientific method to identify and deal with health problems" *(125,* p. xvii*)*. It encompasses a wide variety of branches and methods of research, including: biomedical; clinical; public health; basic; applied; researcher driven; health system driven; quantitative; and qualitative *(126)*.

The application of scientific knowledge has supported many global achievements in health, social and economic development. Nonetheless, some of the world's most pressing public health problems persist. In addition, the production of scientific knowledge is subject to the increasing influence of commercial and political interests, unethical research practices *(127)* and the continued existence of major inequities in the research process, neglecting the diseases of the poor (i.e. the 10/90 gap). This contributes to increasing distrust and a loss of confidence in research and the research community *(128)*. As a consequence, greater efforts are needed

to support and manage robust health research processes, as well as to improve the uptake of the evidence among decision-makers. Such support and management are part of WHO's constitutional core mandate *(129)* and are central aspects of the Action plan to strengthen the use of evidence, information and research for policy-making in the WHO European Region *(39)*.

In the health sector, a broad distinction is often made between biomedical and clinical research versus health system research. Most financial investment is oriented towards the former, as the Commission on Health Research for Development identified nearly three decades ago, stressing that "problems not classified as diseases, such as health information systems, costs and financing, and the wasteful misuse of drugs" *(125,* p. xviii*)* are neglected fields. Nevertheless, despite the dominance of biomedical and clinical research, international attention in recent years has increasingly focused on health system questions, and how health systems and services address population needs *(130)*. This recent trend acknowledges that "biomedical discoveries cannot improve people's health without research to find out how to apply them specifically within different health systems, population groups, and diverse political and social contexts" *(128,* p. xv*)* and this requires sound multidisciplinary scientific investigation with input from the social sciences *(131)*. Ultimately, the results of health systems research should support decisions that are informed by knowledge that has been validated by scientific methods *(132, 133)*.

In health research, different forms of evidence do not carry the same weight. Initially, observa-

tional techniques of epidemiology were used to construct applied research methods but during the 1990s, the use of randomized controlled trials (RCTs) became the hallmark of good quality evidence as the RCT minimized the biases found within the observational design *(134)*. In recent years, however, there have been calls to widen the evidence bases for policy decisions *(135)*. The conclusions from RCTs can be difficult to generalize outside of the study's parameters; knowing what works in specific scenarios may not be help-

ful if it is unclear why an intervention works and under what circumstances *(136)*.

Methodologies that address the same issue through different, but equally important, perspectives may eventually provide more meaningful and effective solutions *(137)*. These concerns have transformed the traditional hierarchy of evidence into more adaptive frameworks "within which different types of research evidence" are integrated for policy decision-making (Box 4.3.); *(138*, p.155*)*.

Box 4.3. The evolution of the evidence hierarchy pyramid over time

Instead of looking at the evidence hierarchy in the traditional pyramid – with systematic reviews at the top, followed by RCTs and then case series and reports at the bottom – the new paradigm for considering health systems research evidence for policy decisions uses systematic reviews to critically examine the methodological quality of the underlying evidence. The clean straight lines drawn between the different study types within the traditional evidence pyramid are now blurred by the fact that well-designed and well-conducted observational studies may supersede poorly conducted RCTs. Qualitative evidence (featuring at the bottom of the traditional evidence pyramid in the form of case studies) is increasingly recognized as an important input to policy-making. Similar to systematic reviews, systematic and transparent methods are now being applied to develop qualitative evidence syntheses. As a consequence, it has been suggested that more than one evidence hierarchy would be required, depending on the types of research questions, rather than applying one single evidence hierarchy to all contexts *(139)*.

Source: Noyes J *(139)*.

Health research capacity in the Region and the need for national health research systems

There is widespread acknowledgement of the importance of having strong health research processes that drive national health systems towards equity and improved health. At the same time, it is understood that health research in many countries does not currently fulfil its potential (140−143). The challenge is how to address this shortfall. WHO therefore developed a framework by which countries can analyse their national health research from a systems perspective. It defines the health research system as "the people, institutions, and activities whose primary purpose is to generate high quality knowledge that can be used to promote, restore, and or maintain the health status of populations. It can include the mechanisms adopted to encourage the utilization of research" (144, p. 816). The framework outlines four main functions of an effective health research system: stewardship, financing, creating and sustaining resources, and producing and using research.

In the European Region, WHO has commenced work to support countries in assessing their national health research systems, developing national strategies to strengthen the production of local evidence for local decision-making, and optimizing current interventions. The first regional meeting on strengthening national health research systems took place in November 2017 in Sofia, Bulgaria. Member States reaffirmed their commitment to the Action plan to strengthen the use of evidence for policy-making through the adoption of the Sofia Declaration (see Box 4.4).

Box 4.4. Sofia declaration on national health research systems

Through the Sofia Declaration, the participants of the European Health Research Network request that the WHO Regional Office for Europe:

- continues to support the WHO European Health Information Initiative as a fundamental basis for strengthening evidence, information and research in the WHO European Region
- supports the building of sustainable capacity, structures and resources in research systems and strategies for health in Member States
- encourages Member States to strengthen research systems and strategies for health to support decision-making
- supports Member States in strengthening the systematic use of research evidence in policy and practice, and closely interlinks the network's activities with the work of the Evidence-informed Policy Network Europe
- encourages Member States to share best practice and experience with research systems and strategies for health
- advocates for the network to increase its membership
- encourages similar initiatives in other WHO regions.

Source: WHO Regional Office for Europe (145).

The newly established European Health Research Network, which issued the Sofia Declaration, operates under the auspices of the WHO European Health Information Initiative and provides technical assistance and capacity-building opportunities with activities that contribute to the implementation of the Action plan to strengthen the use of evidence for policy-making. These include the development of national strategies to strengthen and fund national health research institutions; the establishment or strengthening of national and institutional ethics review boards; and the provision of open access to information *(39)*.

Reorienting health research to strengthen health systems

Despite widespread recognition of the importance of health and in particular public health research, this area has typically been under-funded compared with biomedical research *(146,147)*. Key priorities in health research should be identified and more funds allocated to develop new methodologies and innovations to deal with the changing environments within which health systems operate *(148)*. However, solely promoting more health research will not improve the issues outlined thus far. It is clear that the links and dynamics between research and policy-making are complex *(149)*.

To increase its societal value and usability, research needs to be designed strategically to align with contemporary public health policy priorities. This means moving away from research driven by incentives that do not necessarily address local needs or health priorities. To ensure that national health research systems respond more effectively, closer feedback loops from health systems to researchers should be established. This requires

explicit priority-setting exercises for both health research and the allocation of funding *(150)*.

Another route forward is to reorient focus from generating new knowledge to assimilating what is already known through systematic reviews. Although they are increasingly being used to inform health system decisions, they do not attract the same level of academic credit or public attention as primary (especially biomedical) research *(128)*. Systematic reviews rely on a rigorous and transparent methodology, and offer a range of advantages over single studies. The likelihood of being misled by research findings is lower with a systematic review that synthesizes multiple studies, with bias generally decreased in comparison to an individual study. Confidence in what can be expected from an intervention is thereby higher, offering generally more precise conclusions *(151)*. Furthermore, using existing systematic reviews is time-effective, as the research literature has already been systematically and transparently identified, selected, appraised and synthesized *(152)*. Systematic reviews are increasingly considered to be an effective lens through which to critically review a whole body of evidence that can include a variety of study types and thus better inform policy decisions.

Engaging policy-makers and researchers, together with those who finance, regulate, and provide health care services, to collectively prioritize and fund relevant research that includes systematic reviews should increase their production, relevance and the likelihood of implementation for policy decisions. This in turn should contribute to improved health and well-being as only effective interventions and efficient systems are put into practice *(153)*.

Knowledge translation and evidence-informed policy-making

Challenges and barriers to the use of research

No matter how well the systems of health information and research may function, they are a means to improve the degree to which policies are informed by evidence. Governments are responsible for overseeing both health information and health research systems, and ensuring that the needs of policy-making and implementation are considered in order that the information and research may benefit society.

An increased output of evidence alone is insufficient to generate meaningful changes in health policy and practice. "Researchers […] busy filling shelves of a shop front with a comprehensive set of all possible relevant studies that a decision-maker might someday drop by to purchase" *(154,* p.141*)* will rarely impact policy-making.

Evidence-*informed*, rather than evidence-*based*, health policy acknowledges that policy-making is an inherently political process in which research evidence is only one factor that influences decision-making. Scientific evidence often competes with other factors, such as beliefs, personal interests, political considerations, traditions, past experience, and financial constraints *(155,156)*.

Box 4.5. Use of evidence in policy processes

Evidence can influence the policy process in various ways:

- Direct use (i.e. "instrumental" or "engineering") refers to the link between research findings and their applicability to specific problems that policy-makers seek to address.

- Selective use (i.e. "symbolic" or "legitimating") refers to research applied in a political, strategic way to persuade and legitimize predetermined decisions.

- Enlightening use (i.e. "conceptual") refers to research that has informed or influenced how policy-makers think about issues.

Source: Amara N, Ouimet M, and Landry R *(157)*.

There are major barriers to using research evidence for health policy-making *(158)*. In addition to limited access to good quality, timely research, evidence is sometimes considered to be irrelevant or to lack value in policy processes characterized by power, political or budgetary struggles. In other instances, evidence might not be considered because policy-makers and other stakeholders are either unaware of what is available or lack the necessary research literacy. If evidence is not presented in easily digestible formats that allow for simple translations into policy and effectively communicated, then it is unlikely that the evidence will feed into policy. The absence of personal contact between researchers and policy-makers is also considered a key barrier, yet opportunities to create relationships of mutual trust and engagement are rare *(159)*.

These barriers should be addressed if countries are committed to fostering a culture and environment in which evidence is routinely used to underpin both policy and practice.

Evidence to policy: linking evidence to action

Acknowledging this research–policy gap *(160)*, the concept of knowledge translation has gained prominence on the international health agenda. WHO defines knowledge translation as: "The exchange, synthesis, and effective communication of reliable and relevant research results. The focus is on promoting interaction among the producers and users of research, removing the barriers to research use, and tailoring information to different target audiences so that effective interventions are used more widely" *(161,* p.140*)*.

Worldwide, and particularly in the WHO European Region with the recent adoption of the Action plan to strengthen the use of evidence for policy-making *(39)*, there is a growing commitment to establish new knowledge translation mechanisms and scale up those that are already in place *(162–164)*.

Over the last decade, several initiatives attempted to improve the evidence-to-policy interface. Most of these initiatives focused on strengthening the capacity to supply research evidence ("push activities") as opposed to encouraging decision-makers to use scientific knowledge ("pull activities") *(165)*. More recently, however, knowledge exchange and more integrated efforts have increased in importance, reflecting a transition from the traditional linear view of knowledge translation to a more realistic, complex, dynamic and interactive process of co-creating feasible and research-informed policy options *(166)*.

WHO's work to strengthen country capacity by bridging the research–policy gap is conducted primarily through the Evidence-informed Policy Network (EVIPNet). Its overarching model is that of integration, which combines various components of push, user-pull and exchange, acknowledging that the different approaches are not mutually exclusive nor meant to be considered in isolation.

Box 4.6. Integrated knowledge translation efforts by developing an EVIPNet evidence brief for policy and its impact on policy change – the case of Poland

The Polish Parliament passed the Primary Health Care Act in October 2017. This important legislative document was informed by the country's evidence brief for policy (EBP) and by a policy dialogue, both developed with the involvement of EVIPNet Europe. The EBP, entitled *Optimizing the role of general practitioners to improve primary health care in Poland*, sets out three options to address the issue outlined in its opening problem statement. In accordance with this statement, the new Act notes that, among other things, Poland lacks a sustained, system-wide approach to support quality improvement in primary health care. To address this, the Act requires primary health care providers to monitor the quality of care more carefully, including its effectiveness in relation to health outcomes. The Act also provides Poland's Ministry of Health with a legal basis for creating ordinances that specify assessment criteria, in line with the first option presented in the EBP. After a pilot phase, the new Act will provide general practitioners with the opportunity to receive additional remuneration for preventive health care in the form of a fee for service. The Act introduces elements of a pay-for-performance scheme as suggested by the EBP's second option and in alignment with the stakeholder deliberations that took place during the policy dialogue. These discussions also reinforced the importance of establishing a specialized institute to focus on primary health care; this topic will be addressed in future legislative acts.

Rather, the various approaches complement each other, and comprise the portfolio of activities of so-called knowledge brokers such as EVIPNet Europe. Such knowledge brokers need to operate as neutral, trusted and credible intermediaries between research and policy. Researchers typically do not have the relevant skills and may not have the time, resources or incentives to reach out to the policy-making sphere, so the network and its national knowledge transfer platforms can help to filter and interpret evidence, craft meaningful messages, and deliver them to specific target audiences *(167)*.

EVIPNet Europe supports its member countries with diverse activities that broadly encompass the fostering of mutual support and the exchange of experience and best practice, the provision of training and technical assistance, and the creation of a more favourable environment with high-level political commitment across the European Region.

Box 4.7. Republic of Moldova: Evidence brief for policy and policy dialogue on the harmful use of alcohol informs national legislation, a success story for the national EVIPNet

In 2017, the national EVIPNet team finalized the evidence brief for policy (EBP) informing amendments to the alcohol control legislation intended to reduce harmful use of alcohol in Republic of Moldova. The EBP was developed with close mentorship and coaching by the Knowledge to Policy (K2P) Center in Beirut, Lebanon. The WHO Secretariat of EVIPNet Europe and the WHO Country Office of the Republic of Moldova also played active roles in the development of the EBP, providing guidance and technical support.

Following the finalization of the EBP, the Ministry of Health, Labour and Social Protection convened a policy dialogue in August 2017. It aimed to identify additional local sources of evidence and deliberated the next steps for different constituents on strengthening alcohol control policies in Republic of Moldova.

As a result of these discussions and the wide distribution of the EBP results, the Parliament of the Republic of Moldova introduced changes to the alcohol control legislation in September 2017: while beer was previously categorized as food, it became legally recognized as an alcohol product.

As explained in Chapter 3 (Box 3.2), the WHO Regional Office's Health Evidence Network also plays a major role in synthesizing the best available regional evidence that caters to the needs of policy-makers. Its synthesis reports have long been recognized as a core source of evidence for public health decision-making in the Region.

At each stage of the policy cycle, different types of evidence are required *(156)*, and the knowledge translation mechanisms from WHO therefore aim to strengthen the uptake of the appropriate evidence at each phase. To identify problems, for example, and in relation to monitoring and evaluation, health information helps to measure the magnitude of a disease and assess progress in addressing that issue *(168)*. Disaggregated data, such as by ethnicity, gender or socioeconomic sta-

tus, can clarify whether a problem is widespread or pronounced in certain groups. Whereas in the formulation of a policy response, systematic reviews can help to describe the potential impact of options, identify possible detrimental effects, and enumerate the costs and benefits. Finally, operational evidence becomes important when looking to improve the effectiveness and implementation of initiatives *(149)*.

Furthermore, there is increasing recognition that any strategy to improve access to and use of research will have limited effect if it solely targets individuals *(169)*. EVIPNet Europe therefore promotes organizational and system-wide change for countries to systemically embed research into policy-making processes *(160)*.

Box 4.8. Slovenia: the EVIPNet Europe situation analysis forms the basis for launching the first EVIPNet Europe Knowledge Translation Platform

To catalyse the process of institutionalizing evidence-informed policy-making in Slovenia, the EVIPNet country team conducted a situation analysis, published in October 2017. The aim was to map and assess the context in which evidence-informed policy-making takes shape, and to reflect on opportunities to institutionalize a Knowledge Translation Platform in the country. It will help the worlds of research and policy grow together and support responses to policy priorities and to develop unbiased evidence on key health issues. For sustainability and effectiveness, the platform should be adapted to the relevant political, social and scientific characteristics, as well as the specific institutional system and decision-making mechanisms. Once established, it will facilitate the decision-makers' day-to-day work.

Policy to evidence: reorienting health policy to inform health information and research

We have seen that merely increasing the research output is not enough to improve evidence-informed policy-making. It is often assumed that evidence first influences policy, which then translates into practice, but instead of being passive recipients of research that may or may not be relevant and useful, policy-makers and other stakeholders can actively contribute to shaping the research questions.

Diverse forms of expertise, resources and assets can be brought into this process, creating new forms of knowledge, values, and social relations that cross the boundaries of sectors and disciplines *(170)*. Effective knowledge brokering can facilitate this process by building networks between policy-makers, researchers and civil society. By this means, health research systems are brought closer to both the health system and policy spheres. Fig. 4.1 illustrates this non-linear approach: health research may interact with practice first and, at a later stage, impact policy. An example of this in action is the way that the rise of smartphone applications for mental health has arguably led the formation of mental health policy *(171)*.

Figure 4.1. Knowledge brokering proactively ensures the interactions between research, policy and health systems
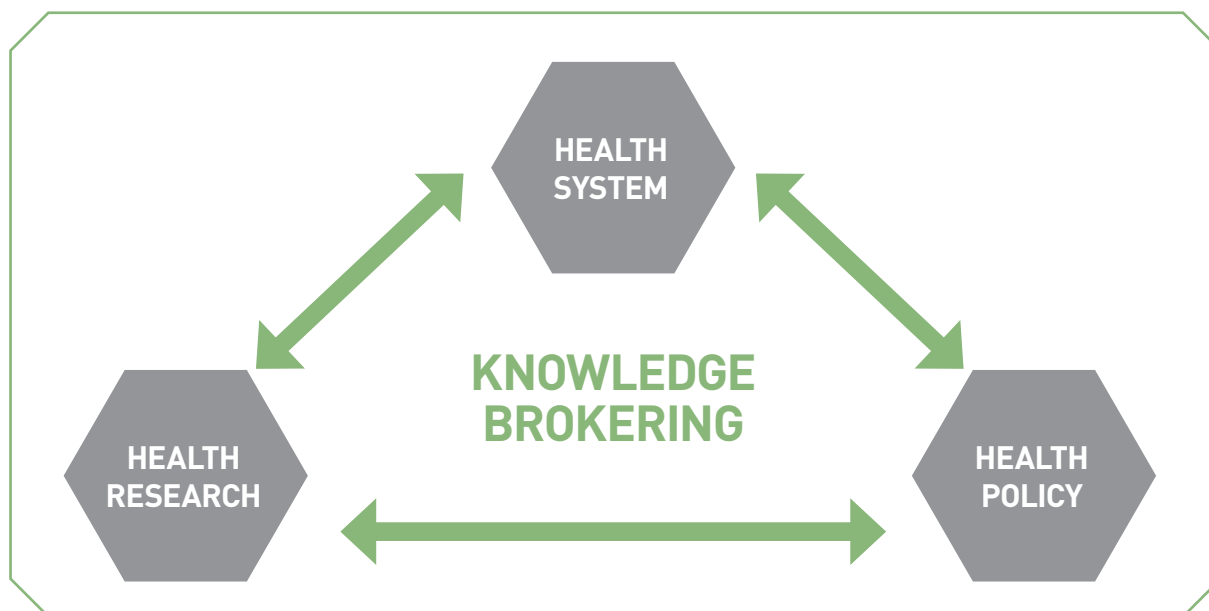
Source: Van Kammen J, de Savigny D and Sewankambo N *(172)*.

Countries that are committed to strengthening evidence-informed policy-making should thus further invest in fostering knowledge-brokering skills, and establishing structures and mechanisms that are conducive to the use of research. At the same time, they must ensure that a wider cultural shift occurs to normalize the consideration of evidence whenever strategic policy decisions are made. One route to achieving this is via a coordinated health information system for Europe to increase the uptake and use of research.

Harmonization and interoperability

The mechanisms that strengthen the three key systems discussed above – health information, research and knowledge translation – align with the implementation of the Action plan to strengthen the use of evidence for policy-making *(39)*. As suggested in this chapter, these systems should be better integrated and coordinated to reach their full potential for transforming health and well-being outcomes.

Health information systems can support cross-country learning through international comparisons and sharing information on effective policy interventions. Dedicated information platforms are regularly

maintained by international organizations such as WHO, the European Commission and the Organisation for Economic Co-operation and Development. The WHO European Health Information Initiative (EHII) fosters international cooperation among these organizations to strengthen the exchange of expertise, build capacity, and harmonize processes in data collection and reporting. Establishing information standards is a prerequisite to fostering data comparability across countries and time *(173)*.

The EHII is the main platform for the coordination of health information, research and knowledge transfer throughout the Region but systemic links need to be further enhanced and the Action plan to strengthen the use of evidence for policy-making more strategically implemented.

The EHII has been given the mandate to enhance population health in the WHO European Region by improving the information that underpins regional policy. It is strategically positioned to influence the WHO European landscape, as it has the express endorsement of and commitment from the Region's Member States; the action plan states expressly that Member States wish to see it implemented under the umbrella and guidance of

the EHII. Moreover, the EHII is committed to policy engagement and the promotion of dynamic information networks to create an environment that supports the systematic and transparent uptake of evidence.

Implementation of the action plan, as advanced by the EHII, is based on a set of common principles:

- Integration and harmonization of health information
- Country stewardship and ownership
- Multisectoral collaboration
- Linking evidence-informed policy-making and user-centredness
- Creating a culture of evaluation and iterative processes.

One of the expressed goals of the EHII is the eventual harmonization and integration of health information in the WHO European Region. However, Member States and international organizations all have different and often long-standing traditions of health information collection and reporting, often based on very different mandates enshrined in their respective constitutions. This goal is therefore a rather ambitious one.

Conclusion

Strengthening the key systems within an overarching information system for health is an ambitious and challenging ideal, but the only realistic way to increase the availability and power of data, information and research to influence policy and positively change societal outcomes, particularly in the era of Agenda 2030. Further, such a system ultimately leads to a more efficient use of resources, as policy actions can be more confidently targeted to solve specific problems.

The Action plan to strengthen the use of evidence for policy-making and the EHII are unique to the

WHO European Region. When the action plan and its resolution were formally adopted by its Member States at the 66th Regional Committee for Europe, Member States voiced their hope that both would provide inspiration to other WHO regions and the world. If the principles outlined in this chapter are followed, similar health information initiatives could be nurtured in a variety of contexts – in transparent and resilient ways – to improve the capacities of both policy-makers and citizens. This would require an even closer collaboration between the international organizations operating in this field.