

September 2019

Thematic brief on Information Systems

Multisectoral action in developing information systems for health

Synergy between sectors: developing information systems for health through government joint actions

The unanimous high-level support for Health 2020 and 2030 Agenda for Sustainable Development empowers whole-of-society intersectoral action to improve health information systems, as highlighted in the action plan to strengthen the use of evidence, information and research for policymaking in the WHO European Region (1).

Health information is the foundation of strong health systems, as all WHO Member States agreed in the 2007 World Health Assembly resolution WHA 60.27 (2). In the European Region, many stakeholders – such as countries, public health institutes and organizations – are active in this field.

Nevertheless, much of the evidence and knowledge gathered are still dispersed, incomplete and difficult to access, and health information activities are often funded through ad hoc projects rather than sustainable structures. Much of the current international data collection is poorly harmonized, resulting in a high reporting burden for countries and discrepancies in data. Further, health information tends to be poorest where health is the poorest. This inequality in health information across the European Region is a problem in itself, since it leads to underestimating the health inequalities described.

These problems can only be overcome by strengthening multisectoral action. Together, harmonized health information systems and equitable socioeconomic progress across the Region can be achieved.

Key messages

The goal of Health 2020 is to significantly improve the health and well-being of populations, reduce health inequalities, strengthen public health and ensure people-centred health systems that are universal, equitable, sustainable and of high quality.



Setting the scene: health information systems in the WHO European Region

Health information systems are a set of interacting elements from the health ecosystem and other sectors (home and social affairs, environment, etc.) with the goal of producing information aimed to support decision-making at each level of well-being and the health system (3).

Solid health information provides a foundation for public health policymaking, and health information systems are designed to manage health data, including determinants of health, inputs to the health system, health outcomes and health inequities. These data are converted into meaningful information that enables the development of knowledge. These systems are part of a complex sociotechnical system, and from this perspective, information systems have four components: tasks, people, roles and technology.

Health information systems are essential to improve the health and well-being of populations, reduce inequalities, strengthen public health sector and ensure people-centred care. Information systems capture, process and represent health data to help clinicians and policy-makers in making better decisions (*4*). Specifically, the WHO Regional Office for Europe has provided advice and assistance to 10 countries in establishing governance mechanisms for health information systems and electronic health (eHealth) and in developing, assessing and evaluating strategies and policies to support these.

As part of this process, health information is usually captured by automated systems and personal tracking devices but also by clinical systems such as electronic health records, which make patients' information available instantly and securely to authorized users (5). Of the countries in the European Region, 59% have a national electronic health record system, and 69% of these have legislation on its use. Electronic health records provide clinical decision support in the format of alerts and reminders to improve care (6). In general, clinical information is collected using standard terms, such as those used by the International Classification of Diseases, to facilitate analysis and grouping. However, unstructured data are also collected in progress notes, and about 80% of the information in electronic health records is available as free text (7).

In addition, capturing health data from non-traditional sources is essential to have a holistic view of the population. Demographics, genetics, social and family history, lifestyle, socioeconomic and environment, and many other types of data sources are examples in this category (8). When integrated with traditional data, these types of data can provide significant insights into member behaviour (9). Using these data effectively requires that health-care organizations understand which specific data element can deliver value in solving population health problems (*10*). For this reason, health information systems are now also known as information systems for health. These systems incorporate quantities of data from different sources that enable efficiency and accountability in health care (*11*).

Further, the processing and analysis of information is generally centralized. During this process, information is combined and aggregated to produce reports that decision-makers can use. Data science (artificial intelligence, machine learning and cognitive computing) is becoming a reality and is transforming how data are collected and analysed (12-16). Artificial Intelligence is a broad scientific discipline with its roots in philosophy, mathematics and computer science that aims to understand and develop systems that display properties of human intelligence. Machine learning is a subdiscipline of artificial intelligence in which computer algorithms learn associations of predictive power from examples in data. These tools, together with other more traditional and already used digital tools such as mobile health (mHealth) and telemedicine can significantly influence health information and health-care outcomes (17).



The Sustainable Development Goals

All 193 Member States of the United Nations adopted the United Nations 2030 Agenda for Sustainable Development at the United Nations Sustainable Development Summit in 2015. The 17 Sustainable Development Goals are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. They build on the successes of the Millennium Development Goals while including new areas such as climate change, economic inequality, innovation, sustainable consumption and peace and justice. The Goals are interconnected and require multisectoral and intersectoral action - the key to success for any one Goal involves tackling issues more commonly associated with another.

The WHO Regional Office for Europe has developed a joint monitoring framework (JMF) for reporting on indicators under the SDGs, Health 2020 and the Global Action Plan for the Prevention and Control of Noncommunicable Diseases (NCDs) 2013–2020¹, that was adopted at the 68th Session of WHO Regional Committee for Europe. At the global level the results framework of the WHO Thirteenth General Programme of Work 2019–2023 (GPW13) also monitors the achievement of the SDGs.²



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Health 2020: a framework for action

The goal of Health 2020 is to significantly improve the health and well-being of populations, reduce health inequalities, strengthen public health and ensure people-centred health systems that are universal, equitable, sustainable and of high quality.

All Member States of the WHO European Region have agreed to monitor progress against six common targets:

- Reduce premature mortality in the European Region by 2020
- . Increase life expectancy in the European Region

. Reduce health inequalities in the European Region

Enhance the well-being of the European Region population

Ensure universal health coverage and the right to the highest attainable level of health

6. Set national goals and targets related to health in Member States

What makes societies prosper and flourish can also make people healthy: policies that recognize this have more impact. Building awareness and capacity to make health objectives part of society's overall socioeconomic and human development is essential. All policy fields, including health, need to reform their ways of working and use new forms and approaches to policy at the global, national and local levels.

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Information systems for health as a determinant of health

Almost 90% of the determinants of health arise outside health-care and clinical settings. The latest estimate places the relative weight of the five categories of determinants of health and their importance on the burden of diseases and deaths. The categories are: individual behaviour and habits, social circumstances, genomics and biology, health care and the environment (18). Information systems for health and digital health can contribute to each of these categories. Information systems are key to improving a population's health. Measuring health outcomes and implementing digital interventions can improve health care.

Collecting information from clinical systems is not enough to achieve a comprehensive health information system. Other sectors generate information that needs to be integrated into the health sector: information about births and deaths from civil registries; social and economic information generated by census, including the social determinants of health; and personal health information generated by electronic devices and social media platforms. All these components and more are relevant when health information is measured, which is necessary for information systems.

Health information systems: life cycle and key sectors

A simplistic view of a health information life cycle has four phases: capture, store, use and data disposal. Each phase has challenges and opportunities.

HEALTH DATA CAPTURE

Every successful organization relies on high-quality data. If the information collected is not of high quality, the rest of the phases will be affected. Health information systems collect health data by using electronic medical records and other information systems that are part of an organization such as the central statistics office and civil registries. Efforts should be coordinated with entities and government initiatives that are in charge of developing and maintaining these types of systems. Coordinating the work with health information technology industries and defining what data standards are going to be incorporated into the system are also fundamental.

STORAGE

The information system strategy will influence where data is physically stored, the specific data sets that require special treatment and the level of security assigned to them. Knowing this enables the system to have the appropriate agreements in place with third parties, manage costs more effectively and implement security restrictions more efficiently. The roles of the general public, patient associations and advocacy groups are essential in this phase.

ANALYSIS AND USE

In this phase, it is fundamental to define who will be in charge of analysing the data, what type of reports are going to be generated and who will have access to these reports. The legal basis for data use underpins access rights. As the health system transforms, new processes need to be put in place to migrate data responsibilities.

DISPOSAL

This is the last phase, which includes deleting information and removing fingerprints from the health information system. This phase needs to be carefully implemented in coordination with national laws and regulations.

All these phases should be considered as part of a broad strategic health information system framework.

Strategic areas Non-health sectors affecting health

- Modernization, digitalization and data-sharing initiatives
- · National ministries and secretaries and social security
- Health information technology industry and software development organizations
- Universities and academic centres
- Professional organizations
- Private health sector
- International organizations
- Donors

Phase 4: Data disposal

Non-health sectors involved in this phase

National ministries and secretaries

- Information and communication technology
- Justice

Health professional associations Patient associations and advocacy groups

in this phase **Digitalization initiatives**

Phase 1: Data capture

National ministries and secretaries

Non-health sectors involved

- Information and communication technology
- Civil registries
- Justice
- Economy and finance •
- Social security

Health information technology industry International organizations

Cross-cutting aspects

- Age, sex, and gender
- Ethics
- Legal status
- Socioeconomic status

Phase 3: Data analysis and use

Non-health sectors involved in this phase

National ministries and secretaries

Information and communication technology

Health information technology industry Universities Patient associations and advocacy groups Private health sector

Phase 2: Data Storage and Security

Non-health sectors involved in this phase

National ministries and secretaries

Information and communication technology

Legislative sector Health information technology industry **Professional organizations** Patient associations and advocacy groups

Intersectoral policies and interventions to develop information systems for health to address the determinants of health

As reflected in Fig. 1, given the diversity of government actors involved in health information systems, interventions within and outside the health sector are needed to address the underlying determinants of health. The following charts include examples of adequate joint actions throughout the different phases to improve the quality of the information systems.

Strategic areas

CHALLENGES	MAIN SECTORS INVOLVED	JOINT ACTIONS TO IMPROVE INFORMATION
Lack of an overarching coordination mechanism and of a long-term vision and strategy	Strategic level and actors mentioned in the different phases	A strategic plan should be developed to coordinate efforts within the sectors outside health that have impact on Health Information adoption
Getting appropriate funding to support health information system projects	Economy and finance ministries, donors	Resources allocated to plan and implement health information system projects
Improving digital literacy, informatics and data science education	Universities and colleges	Defining training needs and educational offer related to health information systems closely with universities will increase the number of professionals trained to work in the field
Professional degree certification	Education ministry	Universities and colleges train health-care professionals and certify education. Health information systems need this information to define roles and access privileges to electronic systems
Availability of high-quality software	Health information technology industry, software development organizations	Coordination with software development organizations or the chamber of professions related to implementing information systems will be fundamental to achieving high-quality systems
Definition of the type of mechanism to identify patients and the use of patient identifiers	Civil registries, justice ministry	The mechanism by which patients will be identified needs to be defined and coordinated with civil registration, and other ministries are essential to accomplish this aim

Health data exchange	Health information technology industry, digital government or other modernization national initiatives, international organizations	The exchange of health information should be facilitated with the use of standards and following the definitions of international organizations
Improving the communication with social security and similar national agencies	Social security sector	The social security agencies require plenty of health information. Also, health information systems have data requirements from the social sector, and therefore coordination is essential
Improving the efficiency of funding health and health care	Private health insurance companies and other payers	When different payment methods exist in one country, there is always the risk of inefficiency. Coordination and communication between the public and private sectors is key to overcoming fragmentation in the health system

Data capture

CHALLENGES	MAIN SECTORS INVOLVED	JOINT ACTIONS TO IMPROVE INFORMATION
Increasing the rate of data capture electronically instead of on paper	Legislative sector	Laws and regulations should support the adoption of health information systems. Legislation on electronic health records, secondary use of health data, the value of the digital signature and patients' rights are some of the domains that need to be covered. The adoption of electronic health records and other clinical systems with proven efficacy should be supported
Increasing the rate of data capture electronically instead of on paper	Digital government or other national modernization initiatives	National and regional digital government projects should support the development of information systems for health. In some countries, national digital health strategies play this role
Expanding the implementation of digital signature in the health sector	Digital government or other modernization initiatives	The articulation between modernization initiatives at the national level together with the expansion of health information systems is key to developing the technology required in certain situations, for example when signing an electronic order
Improving the integration between civil registration and birth and death certificates	Civil registries	Coordinate work on the use of standard terms and classifications. Integrate the use of health and clinical systems and birth and death registration processes
Agreement on health data standards	Health information technology industry and vendors, professional organizations, international organizations	Achieving high-quality data requires standards. The standards to be implemented should be agreed with all the sectors that will be affected by adopting these standards, but key actors will be health information technology vendors and professional organizations

Intersectoral policies and interventions to develop information systems for health to address the determinants of health

Data storage and security

CHALLENGES	MAIN SECTORS INVOLVED	JOINT ACTIONS TO IMPROVE INFORMATION
Physical location of health data: cloud- based versus local storage	Legislative sector, health information technology industry and vendors	Defining where the data should be stored, who can access the data and how data should be stored should be coordinated with the legislative sector, reviewing current legislation and generating new legislation accordingly. Health information technology companies should participate in the discussion, providing options for the technology available
Health data accessibility for secondary use	Legislative sector, professional organizations, patient advocacy groups	Laws and/or regulations should govern where the data should be stored, who can access the data, how data should be stored and security mechanisms

Data analysis and use

CHALLENGES	MAIN SECTORS INVOLVED	JOINT ACTIONS TO IMPROVE INFORMATION
What type of information is needed	Health information technology industry and vendors, professional organizations	Health professional organizations should help in defining the reports that are needed to make decisions
Health data accessibility for secondary use	Legislative sector, professional organization, patient advocacy groups	Laws and/or regulations should govern where the data should be stored, who can access the data, how data should be stored and security mechanisms
Lack of reporting by private health facilities	Private health sector	To ensure high-quality data, private health facilities should also be part of the information system, providing health data from the people who receive care in these facilities
Dissemination of information products and analysis is weak	Professional organizations, universities	Data science and analysis skills and competencies should be incorporated into health professional educational

programmes

and analysis is weak

Data disposal

CHALLENGES	MAIN SECTORS INVOLVED	JOINT ACTIONS TO IMPROVE INFORMATION
Delete incorrect information and change information in clinical databases	Legislative sector, health professional organizations, patient advocacy groups	Policies and regulation should be in place to define when and under which circumstances health data can be changed and deleted. These policies should be defined based on listening to health-care professional organizations and patient advocacy groups
Definition on when a record can be	Legislative sector,	Policies and regulation should be in place to define when and

Definition on when a record can be definitively deleted from the information system

Legislative sector, health professional organizations, patient advocacy groups Policies and regulation should be in place to define when and under which circumstances records can be deleted from the information system. These policies should be defined based on listening to health-care professional organizations and patient advocacy groups



Intersectoral response to other key challenges in developing information systems for health

The main challenges associated with adopting health information systems are distributed in seven categories: financial, technical, psychological, social, legal, organizational and change process (19). The financial category includes those related to the monetary issues involved in implementing health information systems. High costs, lack of resources, and uncertainty about the return on investment for healthcare organizations are some examples of financial challenges countries face. There are also challenges related to the technical issues of health information systems and the technical capabilities of the users and the suppliers. Working on training and education with universities will be key to facing this challenge. Users have concerns regarding the use of systems that are based on their personal experience and cognitive factors. Education can also help with this challenge, but

combining this with change management initiatives should be planned. Health Information systems deal with health information about patients, which should be treated as private and confidential. Clinical users believe that keeping such information safe is very important because otherwise it could create legal issues. However, there is a lack of standardized security standards that can be followed by those involved in using these systems, creating uncertainty. The change process is a challenge as well as a problem. Problems that occur during the change process, such as the lack of a proper organizational culture, lack of incentives, individual and local resistance, lack of community-level participation and lack of leadership are all challenges that need to be addressed while implementing health information systems.

Cross-cutting aspects

To reduce health inequalities and achieve health for all, the joint policies and interventions mentioned above must be performed with full respect for the principle of non-discrimination and, overall, following a human rights approach. Special attention must be given to the treatment of health information. The privacy of the health information and security should be considered an essential aspect of any health information system initiative. Applying an equity lens to health and non-health interventions, promoting understanding and scaling up dialogue among the health sector and the non-health sectors will make countries' health information systems more efficient, improving the quality of the health indicators of a country and thereby benefiting society as a whole.

HEALTH 2020

Reducing health inequalities: to reduce health inequalities, the following should be addressed.

LIFE-COURSE STAGE

- Social protection for women, mothers to be and young families
- Universal, high-quality and affordable early-years education and care system
- Eradication of unsafe work and access to employment and high-quality work
- Coherent and effective intersectoral action to tackle inequalities at older ages

WIDER SOCIETY

- Improved social protection, according to need
- Co-creation and partnership with those targeted, civil society and civic partners
- Action to reduce social exclusion
- A gender equity approach

BROADER CONTEXT

- Promoting equity through tax and transfer payments
- Long-term planning through links with other policies

SYSTEMS

- Greater coherence across sectors
- Comprehensive responses
- · Regular reporting and public scrutiny

United Nations 2030 Agenda for Sustainable Development: a political mandate and transformative call for action

Achieving the Sustainable Development Goals (SDGs) requires working in a transformative way in order to implement a set of coherent, evidence-informed policies that address health, well-being and all their determinants throughout the life course and across all sectors of government and society. Revitalized global and regional partnerships are essential, and will provide the support and momentum to this societal and global effort.

Transformative governance for action in developing information systems for health

The adoption of the Health 2020 health policy framework for the WHO European Region in 2012 by all Member States, with governance for health as a twin strategic objective alongside improved health equity, marked an invigorated strategic approach in the European Region to strengthen governance for health and intersectoral action. This provides an excellent foundation for operationalizing and implementing the 2030 Agenda and the Sustainable Development Goals, which calls for good governance, new models of partnership and scaling up of intersectoral work as the means to achieve global, regional and national goals and targets, and to meet today's complex global challenges.

Moving towards models of governance that deliver through their design health, equity and well-being is an example of the transformative response called for by the 2030 Agenda. Involving, managing, coordinating, developing accountability and coherence, and supporting the implementation of action between diverse actors across all levels of government and beyond are necessary to achieve global, regional and national goals and targets and to effectively address today's complex global challenges.

The transformative approach to improved governance is facilitated through whole-systems approaches at each individual level or node within a system (whole of government, whole of society, whole of city and whole of school) that engage all levels of governance within a system, from the international through the national and the regional to the local.

Capacity for intersectoral governance for health and well-being depends on three key factors:

The right to health and sector mandates for multisectoral and intersectoral action for health and well-being Resourcing and organization for multisectoral and intersectoral action for health and well-being

The capacity of institutions and individuals for designing, implementing and delivering multisectoral and intersectoral action for health and wellbeing

3.

For further information, see the Concept note: assessment tool for governance for health and well- being.

SDGs for action in developing information systems for health



Sustainable Development Goal targets for action in developing information systems for health

GOAL

SUSTAINABLE DEVELOPMENT GOAL TARGET

1 № Poverty Ř¥Ř؆	Sustainable Development Goal 1: End poverty in all its forms everywhere	1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerabil- ity to climate-related extreme events and other economic, social and environmental shocks and disasters
2 ZIRO HUNGER	Sustainable Development Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	 2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons 2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries
3 GOOD HEALTH AND WELL-BEING	Sustainable Development Goal 3: Ensure healthy lives and promote well-being for all at all ages	 9.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100 000 live births 3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births. 3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, waterborne diseases and other communicable diseases. 3.4 By 2030, reduce by one third premature mortality from noncommunicable diseases through prevention and treatment and promote mental health and well-being. 3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol. 3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents. 3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health-care services to guality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all. 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination. 3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate. 3.5 Substantially increase health financing and the recruitment, development, training and retention of the eveloping countries, provide access to affordable essential medicines and vaccines in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries, to appropriate. 3.6 Substantially increase health financing and the recruitment, development, training and rete



Sustainable Development Goal 4:

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all **4.4** By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

GOAL

SUSTAINABLE DEVELOPMENT GOAL TARGET

5 GENDER EQUALITY	Sustainable Development Goal 5: Achieve gender equality and empower all women and girls	5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
6 CLEAN WATER AND SANITATION	Sustainable Development Goal 6: Ensure availability and sustainable management of water and sanitation for all	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
7 селинански кно	Sustainable Development Goal 7: Ensure access to afforda- ble, reliable, sustainable and modern energy for all	7.1 By 2030, ensure universal access to affordable, reliable and modern energy services
	Sustainable Development Goal 11: Make cities and human settlements inclusive, safe, resilient and sus- tainable	 11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations 11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
13 CLIMATE	Sustainable Development Goal 13: Take urgent action to combat climate change and its impacts	13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
16 PEACE JUSTICE AND STRONG INSTITUTIONS	Sustainable Development Goal 16: Promote peaceful and inclusive societies for sustainable develop- ment, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	16.1 Significantly reduce all forms of violence and related death rates everywhere
17 FARTNERSHIPS FOR THE GOALS	Sustainable Development Goal 17: Strengthen the means of implementation and revitalize the Global Part- nership for Sustainable Development	 17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed 17.17 Encourage and promote effective public, public private and civil society partnerships, building on the experience and resourcing strategies of partnerships 17.18 By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographical location and other characteristics relevant in national contexts 17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that

17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

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HEALTH 2020

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> Page 5 Information systems for health as a determinant of health

Health information systems are essential to improve the health and well-being of populations, reduce inequalities, strengthen public health sector and ensure people-centred care

Page 3

Setting the scene: health information systems in the WHO European Region

Health information is the foundation of strong health systems, as all WHO Member States agreed in the 2007 World Health Assembly resolution WHA 60.27

Page 1

Synergy between sectors: developing information systems for health through government joint actions The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

Member States

Albania Andorra Armenia Austria Azerbaijan **Belarus** Belgium Bosnia and Herzegovina Bulgaria Cyprus Czechia Finland Georgia Greece Hungary Italy Kazakhstan Kyrgyzstan <u>Luxemb</u>ourg Norway <u>Pola</u>nd Serbia Slovakia

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