

Availability of national health services delivery data across the WHO European Region: scanning survey results





WHO European Framework for Action on Integrated Health Services Delivery



Availability of national health services delivery data across the WHO European Region: scanning survey results

WHO European Centre for Primary Health Care Health Services Delivery Programme Division of Health Systems and Public Health



Abstract

This publication describes the results of a data availability scanning survey on the sources and availability of data on health services delivery. The survey was initiated with integrated health services delivery focal points at the annual meeting of this network in June 2017. This work was conducted in the context of developing a monitoring tool for the WHO European Framework for Action on Integrated Health Services Delivery, endorsed by Member States in the European Region in 2016. The survey found that information is available on the health workforce and financing across the Region. Information on equipment and infrastructure at the health facility level is less readily available and, for regional monitoring purposes, likely needs to be supplemented by survey data. Information on the performance of health services delivery can be gathered from existing information systems, except for long-term care. Data on patient experience are collected in a few countries on an ad hoc basis and are not linked to other databases. Key informants to supplement information on the performance and capacity of health services delivery can be identified from existing associations of patients and health professionals, since these are available across countries.

Keywords

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Contents

Acknowledgements Abbreviation Tables, boxes and figures	ii iii iii
Context	1
Sources of data on health services delivery Survey objectives	1
Survey methods	4
Development of the survey	4
Data collection process	6
Characteristics of the responding countries Response rate	6 7
Survey findings	9
Availability of sources of information on the capacity to deliver health services	9
Health workforce	9
Health financing	10
Equipment in health facilities	10
Existence of patient associations	11
Availability of sources of information on the performance of health	
services delivery	11
Data on primary care, inpatient hospital care, mental health hospital care and	4.4
long-term care Databases of health insurance records	11 13
Disease registries	13
Medicines in primary and secondary care	14
Survey data	15
Information on health outcomes and impact	15
Conclusions	16
References	17
Annex. Scanning survey questions	19

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Abbreviations

OECD Organisation for Economic Co-operation and Development

Tables, boxes and figures

Tables		Page
Table 1	Data sources for monitoring health services delivery	2
Table 2	Countries covered by the WHO European data scanning survey and OECD health records surveys	6
Table 3	Response rate and number of responding countries on health information systems	8
Table 4	Response rate and number of responding countries on the existence of specific sources of information	8
Boxes Box 1	Resolution calling for performance monitoring	1
Figures Fig. 1	Countries of the WHO European Region for which information is available from the WHO European data scanning survey or OECD health records surveys	7
Fig. 2	Availability of information sources on the primary health care workforce	9
Fig. 3	Availability of information from national social and health accounts and year of last update	10
Fig. 4	Availability of information on equipment at the facility level and year of last update	10
Fig. 5	Existence of cancer, diabetes and heart disease patients' associations recognized as legal entities	11
Fig. 6	Availability and characteristics of data information systems in primary care and inpatient hospital care	12
Fig. 7	Availability and characteristics of data information systems for mental health hospital care and long-term care	12
Fig. 8	Availability and characteristics of databases of health insurance records	13
Fig. 9	Availability and characteristics of health information systems for cancer registries	13
Fig. 10	Availability of an essential medicine list and year of last review	14
Fig. 11	Availability and characteristics of health information systems for prescription medicines in primary care and secondary care	14
Fig. 12	Availability and characteristics of survey data on patient experiences and from population surveys	15
Fig. 13	Availability and characteristics of health information systems for mortality data	15

Context

In 2016, WHO European Member States endorsed the Framework for Action on Integrated Health Services Delivery at the 66th session of the WHO Regional Committee for Europe. The Framework is aligned with the European health policy Health 2020 (adopted in 2012) and commitments for health system strengthening put forward in 2008 in the Tallinn Charter: Health Systems for Health and Wealth and the 2015 priorities for strengthening people-centred health systems.

With the endorsement of the WHO European Framework for Action on Integrated Health Services Delivery, Member States tasked the WHO Regional Office for Europe to monitor health services delivery transformations (Box 1), specifically through intensified measurement of all relevant and existing indicators.

Box 1. Resolution calling for performance monitoring

Resolution EUR/RC66/R5 requests the Regional Director:

To monitor the implementation of the European framework for action on integrated health services delivery and report on progress to the Regional Committee every five years, commencing with its 70th session in 2020 (1).

In response, in late 2016, the Regional Office began to develop a tool for monitoring health services delivery in the approach of the Framework for Action on Integrated Health Services Delivery. A planning document describes the processes for this work from the endorsement of the Framework in 2016 to the first reporting back to Member States on a baseline of services delivery in 2020 (2).

Sources of data on health services delivery

Sources for monitoring health services delivery have benefited from advances in information technology, making electronic information systems, patient records and registries increasingly common across the Region. Data on health services delivery has also accelerated over the past two decades as interest in studying and measuring health services delivery has surged. This has been credited to consensus on the importance of services delivery as a core function of systems and as a link between health system performance and population health outcomes (2). The range of comparable and timely sources of data and information on health services delivery has, in effect, continued to broaden.

Table 1 lists some relevant health services delivery monitoring data sources available in the Region. These sources can be organized along two dimensions: by scope (international or country-specific) and type (database, survey or report). Internationally published sources include WHO regional and global initiatives, reporting of the Organisation for Economic Co-operation and Development (OECD), the European Union and other international organizations.

The sources of data at the country level are specific to each country's information infrastructure. In general, information on the structures of primary care can be gathered from national human resources and facility databases. Financial flows can be extracted from the international classification of national health accounts.

Existing assessments and reports on the design and organization of services offer insights that capture these aspects related to the model of care. Several sources are available on the performance measures of services delivery, such as data in hospital and primary care databases, information on patients' experiences collected as part of population-based surveys and satisfaction surveys and information from disease-specific registries. Other outcome and impact data can be extracted from hospital, primary care, prescription and mortality databases.

Table 1. Data sources for monitoring health services delivery

Sources	Databases or sources	Surveys	Reports
Interna- WHO tional	European Health for All database (3) Global Health Observatory (4) Antimicrobial Medicines Consumption Network (5) European database on human and technical resources for health (6) Health 2020 database (7) Global tuberculosis data repository (8) European mortality database (9) Global health estimates database (10) WHO universal health coverage data portal (11)	WHO STEPwise approach to surveillance survey (17) Global country capacity and response on non-communicable diseases survey (18) Global survey on eHealth (19) Self-assessment tool for the evaluation of essential public health operations (20)	Health system reviews: health systems in transition series (24) Ambulatory care sensitive conditions series (25) Better non-communicable disease outcomes: challenges and opportunities for health systems series (26)
Other	OECD health statistics (12) OECD health care quality indicators (13) International Narcotics Control Board (14) European Core Health Indicators (15) European Centre for Disease Prevention and Control (16)	OECD health systems characteristics survey (21) OECD health information infrastructure for health care quality governance survey (22) Commonwealth Fund international survey of primary care physicians (23)	OECD reviews of national health care quality (27) OECD reviews of health systems (28)
Country-specific	health accounts human resources databases provider registries health information systems disease registries prescription databases patient registries health insurance records	health facility surveys surveys of health professionals population surveys	

Source: WHO Regional Office for Europe.

Survey objectives

In the process of adapting the WHO European Framework for Action on Integrated Health Services Delivery from a policy to a monitoring tool, a scanning survey on the availability of data on health services delivery was developed. The survey aimed ultimately to better assess the range and consistent availability of known data sources at the country level. This effort is aligned to the initial request of Member States to give priority to monitoring services delivery based on existing measures and data sources.

This publication presents the findings of the sources of data on health services delivery explored across the Region through the data scanning survey. The results will inform the development of the monitoring tool and the selection of indicators that give priority to data availability as one of its core criteria.

Survey methods

Development of the survey

The WHO European Centre for Primary Health Care developed the data scanning survey. Technical experts from the OECD and the WHO Collaborating Centre for Quality and Equity in Primary Health Care Systems, Academic Medical Centre, University of Amsterdam reviewed the survey.

In 2012, the OECD Health Care Quality Indicators Expert Group assessed health information infrastructure in OECD countries (29). As part of the study, members of the Expert Group participated in a questionnaire that explored the design of electronic health record systems. Among other things, the survey sought information on the types of data available at the national level, the existence of records for patients or people, the use of unique patient identifying numbers for linking records and whether the information collected was standardized according to international coding.

In 2016, an updated version of the OECD survey was administered to report on the status of implementing electronic health records. The information collected was analysed in a 2017 OECD Health Working Paper (22). On the availability of data resources in countries, the paper includes data for health records at the primary care and hospital levels and whether these records contain information on medication and patient experience. The survey does not include information on cancer registries, mortality databases, formal long-term care, mental health hospitals or population health surveys.

Building on these results, in 2017, the WHO European Centre for Primary Health Care adapted the OECD questionnaire into a data scanning survey for the WHO European Region. In addition to scoping information on databases of health records, the survey sought information on: the existence of organized groups of practitioners and human resources databases; expenditure on health and essential medicines; and health insurance records.

The WHO European data scanning survey was developed and structured to capture:

- the existence and status of databases with information on human resources, equipment, financing, medicine and health insurance records;
- the presence of organized groups of practitioners and patients that could serve as potential key informants on integrated health services delivery; and
- the existence of databases that include information on health records, patient experiences, population health, prescribed medicine and mortality.

The Annex presents the complete version of the data scanning survey.

The survey sought details on sources of information in the following areas.

- Health workforce. Availability of both registries of health professionals and records on health personnel at the facility level and whether information is available specifically at the primary care level.
- Infrastructure. Availability of data on equipment at the facility level.
- **Health insurance records**. Availability of health records from health insurance systems and whether these can be linked with other databases of health records.
- **Health expenditure**. Availability of national social or health accounts and the last year of update.
- **Medicines**. Availability of a review of an essential medicine list and the last year of update.

The survey also explored the existence of organized groups for the following. These groups were investigated given their role and importance to services delivery and transforming integrated health services delivery.

- **Professional associations**. Existence of professional associations and representatives or labour unions of general practitioners or family medicine doctors.
- Patient associations. Existence of patient associations, as a legal entity, for three groups of diseases: cancer, diabetes and heart diseases.

A final section of the survey was structured similar to the questionnaire of the OECD Health Care Quality Indicators Expert Group on electronic health record systems. Consistency was sought to enable the data from the OECD's questionnaire to be comparable to supplement the responses to this data scanning survey.

In this part of the survey, information was sought on the availability of nine databases, regardless of their integration at the national level:

- hospital inpatient dataprimary care datacancer registry data
- data on prescription medicines in primary care and secondary care
- mortality data
- data on long-term care
- data on mental hospital inpatients
- patient experience data
- data from population health surveys.

Additional information was sought across these databases on the characteristics of the databases including infrastructure for linking data through patient or person records and unique patient identification number, adherence to international coding regardless of the system used and collection of socioeconomic information on individuals.

Data collection process

The WHO European data scanning survey was discussed during the 4th Annual Meeting of Integrated Health Services Delivery Focal Points in June 2017 in Almaty, Kazakhstan.

As a first step, the focal points from Member States participating in the meeting were requested to provide responses to a paper-based version of the survey (Annex) during the two-day meeting. As a second step, the respondents were sent a follow-up request by email, offering them the opportunity to correct and validate their answers electronically and complete any missing information.

As a third step, to ensure that additional Member States were given an opportunity to participate in the survey, the same electronic survey was sentby email to the integrated health services delivery focal points of the Member States that did not participate in the Annual Meeting.

Finally, to include those Member States that either did not provide answers during the integrated health services delivery focal point annual meeting, nor could be engaged in the third step, the survey was sent electronically to WHO country office representatives, who were asked to solicit feedback from the respective ministries of health and/or national experts.

Characteristics of the responding countries

In total, information on 48 countries was received or compiled and analysed. Table 2 presents the distribution of countries. The responses of 39 Member States were received from June 2017 to April 2018. This was supplemented by data from the OECD survey covering nine countries in 2016.

The 48 countries for which information is available are uniformly distributed across the WHO European Region (Fig. 1). When data from the WHO European data scanning survey and the OECD surveys are combined, there is information on 10 of the 12 (83%) countries from the Commonwealth of Independent States, all 16 countries from central and Eastern Europe and 22 of the 25 countries (84%) from the rest of the WHO European Region.

Table 2. Countries covered by the WHO European data canning survey and OECD health records surveys

^aOECD electronic health record survey 2012.

Sources: WHO European data scanning survey, 2017 and OECD 2012 and 2016 (22).

^bOECD electronic health record survey 2016.

Data not available for Andorra, Cyprus, Monaco, Republic of Moldova and Uzbekistan.

¹ The Commonwealth of Independent States is a country group for statistical purposes that includes Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

WHO scanning survey, 2017

WHO scanning survey, 2017

No information

Fig. 1. Countries of the WHO European Region for which information is available from the WHO European data scanning survey or OECD health record surveys

Sources: WHO European Data Scanning Survey 2017 and OECD 2012 and 2016 (22).

Response rate

Table 3 and Table 4 summarize the sample for each question, with details on the response rate and the number of countries providing answers. Data on the structure of health information systems were collected for all countries through the WHO European data scanning survey and OECD reports. Information on the characteristics of health system databases was sought in the OECD surveys, and 48 countries are therefore in the sample for this part of the analysis.

Information is available for most of the databases on the existence of specific databases, whether data are collected at the individual level and whether these data can be linked with other database systems either through a unique patient identifier, a specific health system identification number or a national identification number. More than 90% of the countries surveyed provided responses on all databases, except for data on: the availability of long-term care (83% response rate), mental hospitals (88% response rate), patient experience at the individual level (88% response rate) and the existence of population health survey databases (83% response rate).

Sources of data unique to the WHO European data scanning survey have been collected from 39 countries. Almost all countries responded to all questions, yielding response rates above 95%, except for questions related to patient organizations for cancer and heart disease (90% and 87% response rates, respectively).

Table 3. Response rate and number of responding countries on health information systems

Health information system	Number of countries in the survey	Existence		Data at the individual		Unique pat identifiers	
	n	n	%	n	%	n	%
Primary care data	48	48	100	44	100	41	98
Hospital-level data	48	48	100	46	100	45	98
Long-term care data	48	40 ^b	83	24	100	22	100
Mental hospital data	48	42 ^b	88	37	100	35	100
Cancer registry data	48	45	94	38	97	36	97
Data on prescription medicines in primary care	48	48	100	37	95	35	100
Data on prescription medicines in secondary care	48	48 ^b	100	36	100	34	100
Mortality data	48	44	92	41	93	39	92
Patient experience data	48	43	90	14	88	11	96
Population health survey data	48	40	83	34	92	26	96

^aThe response rate is the percentage of countries providing answers of the total number of countries eligible to answer the specific question; n is the number of countries responding to the specific question.

Table 4. Response rate and number of responding countries on the existence of specific sources of information

Specific sources of information	Number of countries in the survey	Sources ex	ist
		nª	%
Health insurance records exist	39	39	100
Information is collected about a person's socioeconomic status or vulnerability (such as pensioner status, war veteran, employment status, etc.)	39	33	100
Data are linked with medical records	39	32	97
Registries of health professionals exist	39	39	100
Data are disaggregated for primary care services	39	34	100
Availability of records on health personnel at the facility level	39	38	97
Data on the availability of equipment at the facility level	39	37	95
National social or health accounts exist	39	37	95
(Essential) medicines list review exist	39	38	97
Existence of organized groups of general practitioners or family medicine doctors (such as professional associations, professional representatives and/or labour unions)	39	39	100
Patient organizations exist for the following diseases: Cancer	39	35	90
Diabetes	39	38	97
Heart disease	39	34	87

^a The response rate is the percentage of countries providing answers of the total number of countries eligible to answer the specific question; n is the number of countries responding to the specific question.

^b The sample size used in analysing this indicator throughout the report is smaller than reporte here because one Member State indicated that reporting this indicator is not applicable.

Survey findings

Availability of sources of information on the capacity of health services

Information on the capacity of primary care can be drawn from various databases on the health workforce, financing and equipment. Representatives from patients' associations can provide further information on questions on the selection of services.

Health workforce

Overall, information on the health workforce is available across the Member States surveyed (Fig. 2). Registries of health professionals are available in 34 countries, and the data are disaggregated at the primary care level for 29 countries. Records on health personnel at the facility level are available in 34 countries. Information on the health workforce and other information related to the activities of health professionals can also be obtained from key informants. This can be drawn from organized groups of general practitioners, which reportedly exist in 37 countries.

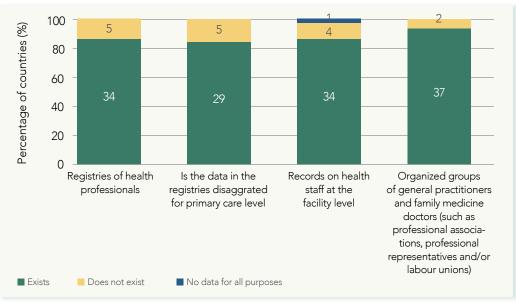


Fig. 2. Availability of information sources on the primary health care workforce

Source: WHO European data scanning survey, 2017.

Health financing

National social or health accounts exist in 33 countries. The data are up to date (2015 or 2016 figures) in 24 countries; two databases were updated three to five years ago; and three are older than five years (Fig. 3).

100 100 Percentage of countries (%) Percentage of countries (%) 80 80 60 60 40 40 20 20 0 0 National social or National or social health health accounts accounts: year of last update 2014, 2013, 2012 2015, 2016 Exists Does not exist ■ No data for all purposes exist Older than 2012 ■ No data for all purposes exist

Fig. 3. Availability of information from national social and health accounts (left) and year of last update (right)

Source: WHO European data scanning survey, 2017.

Equipment in health facilities

Data on equipment at the facility level are available for 25 countries (Fig. 4). According to the respondents, the data are up to date (less than two years old) in 19 countries. In one country, the data are between three and five years old, and in one other country the information is reported to be older than five years.

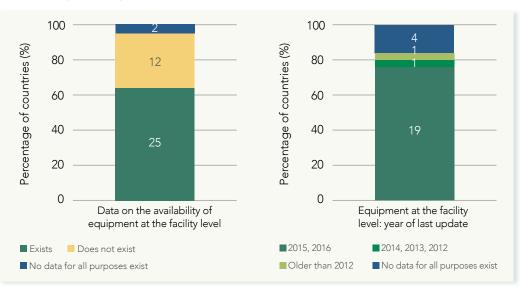


Fig. 4. Availability of information on equipment at the facility level (left) and year of last update (right)

Source: WHO European data scanning survey, 2017.

Existence of patient associations

Patients can be used as key informants, especially when they are representatives of organized entities. The existence of patient associations varies depending on the disease (Fig. 5). Diabetes patients' associations exist in 33 countries, cancer patients' associations in 30 countries and heart disease patients' associations in 26 countries.

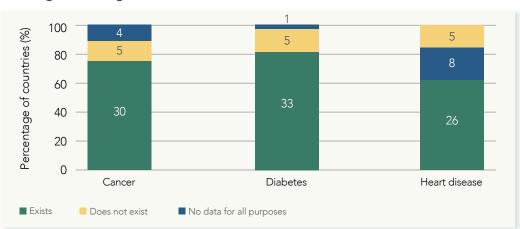


Fig. 5. Existence of cancer, diabetes and heart disease patients' associations recognized as legal entities

Source: WHO European data scanning survey, 2017.

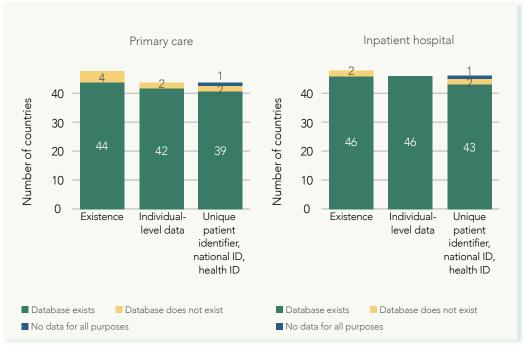
Availability of sources of information on the performance of health services delivery

Data related to outputs and outcomes in primary care can be drawn from existing health information systems, databases specific to primary care, hospital inpatient databases, mental health hospitals, long-term care databases, disease registries, prescription databases and surveys.

Data on primary care, inpatient hospital care, mental health hospital care and long-term care

Data on primary care and inpatient hospital care are available across the Region (Fig. 6). Data on primary care are available in 44 countries and data on hospital inpatient care in 46 countries. For primary care, individual-level data is available in 42 countries, and 39 databases allow the data to be linked to other information systems through a unique patient identifier. Hospital inpatient data contains individual records in all databases, and 43 of them allow the data to be linked across the information systems.

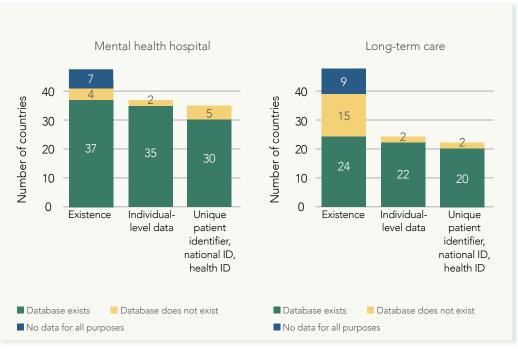
Fig. 6. Availability and characteristics of data information systems in primary care (left) and inpatient hospital care (right)



Source: WHO European data scanning survey, 2017 and OECD 2016 (22).

Mental health hospital databases are available in 37 countries, with 35 countries collecting individual-level data; in 30 countries, these data can be linked with other information system databases (Fig. 7). Long-term care data are available in 24 countries, with 22 databases collecting individual-level data and 20 countries allowing these data to be linked with other data information systems (Fig. 7).

Fig. 7. Availability and characteristics of data information systems for mental health hospital care (left) and long-term care (right)



Source: WHO European data scanning survey, 2017 and OECD 2016 (22).

Databases of health insurance records

Data on the utilization of and access to health services can also be extracted from records of health insurance. Across the Region, 33 countries have databases of health insurance records (Fig. 8). Information on a person's socioeconomic status or vulnerability is collected in 30 countries, and 21 databases allow the data to be linked to medical records.

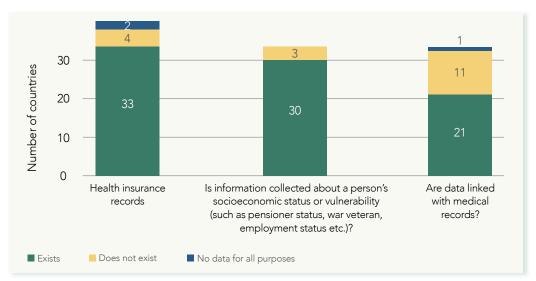


Fig. 8. Availability and characteristics of databases of health insurance records

Source: WHO European data scanning survey, 2017.

Disease registries

Patient registries constitute an additional source of information on services offered in primary care, clinical practice and patient outcomes. Across the Region, 39 countries have cancer registries, of which 37 have data at the individual level (Fig. 9). In 29 countries, these data can be linked with other data across information systems.



Fig. 9. Availability and characteristics of health information systems for cancer registries

Source: WHO European data scanning survey, 2017.

Medicines in primary and secondary care

Essential medicine lists have been developed and adapted in 35 countries (Fig. 10). The list was last reviewed in the previous two years in 24 of the countries; in one country the list is three to five years old; and in seven countries the list is older than 5 years.

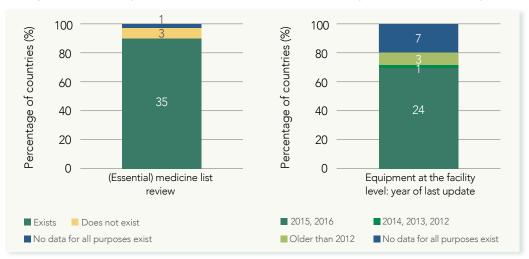


Fig. 10. Availability of an essential medicine list (left) and year of last review (right)

Source: WHO European data scanning survey, 2017.

Prescriptions databases exist in 39 countries at the primary care level and in 36 countries at the secondary level (Fig. 11). In primary care, databases contain individual-level information in 35 countries, and in 34 the data can be linked to other databases. In secondary care, individual-level information is being collected in 34 countries, and the data can be linked to other databases in 33 countries.

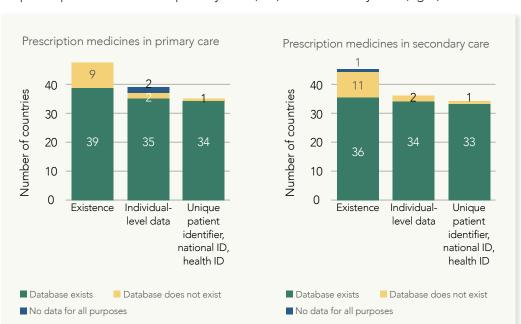


Fig. 11. Availability and characteristics of health information systems for prescription medicines in primary care (left) and secondary care (right)

Source: WHO European data scanning survey, 2017 and OECD 2016 (22).

Survey data

Patient experience data are collected in 16 countries; in 12 of these, they contain individual-level information, and in six of these, the data can be linked with other information systems (Fig. 12). Population survey data including general health information are available in 37 countries (Fig. 12); individual-level data are being collected in 27 countries, and in 19 countries this information can be linked to other information systems.

Patient experience data Population surveys 8 40 40 Number of countries Number of countries 30 30 27 20 20 37 27 10 10 16 0 0 Individual-Individual-Unique Existence Unique Existence level data patient level data patient identifier, identifier, national ID, national ID, health ID health ID ■ Database exists ■ Database exists Database does not exist Database does not exist ■ No data for all purposes ■ No data for all purposes

Fig.12. Availability and characteristics of survey data on patient experiences (left) and from population surveys (right)

Source: WHO European data scanning survey, 2017 and OECD 2016 (22).

Information on health outcomes and impact

Mortality databases exist in 44 countries and include individual-level information in 41. In 31 countries, this information can be linked with other databases in the system (Fig. 13).



Fig.13. Availability and characteristics of health information systems for mortality data

Source: WHO European data scanning survey, 2017 and OECD 2016 (22).

Conclusions

Monitoring the WHO European Framework for Action on Integrated Health Services Delivery through a detailed snapshot on the status of health services delivery across the Region requires querying and analysing a wide range of databases and sources of information.

The WHO European data scanning survey found that information on the health workforce is available across the Region, either from health facility records or from registries for health professionals. The existence of associations of health professionals (or similar professional groups) reported can also be further explored as a source of possible key informants. For information on financing, most countries have up-to-date systems of national health accounts. In contrast, collecting reliable information on the availability of technology, diagnostics and infrastructure may be more difficult. Data on the availability of equipment at the facility level are not readily available throughout the Region, and when they are available, they are not regularly updated. Thus, for monitoring purposes, exploring other sources of information, such as surveys of health facilities, may be necessary to obtain more robust evidence.

The existence of patient associations reported in the scanning survey results can be relied on to identify patient representatives to serve as a key source of information for monitoring care contact. The existence of such organizations varies by disease. For instance, associations of diabetes patients exist in 33 countries in the Region, associations of cancer patients in 30 countries and associations of heart disease patients in 26 countries. Whether comprehensive disease-specific information can be collected depends on whether relevant patient associations exist in a sufficient number of countries.

Indicators on the performance of health systems can be collected from existing health information systems. Data on primary care, inpatient hospital care and mental health hospital care are available throughout the Region. In contrast, data on long-term care are available in 24 countries. Assessing the performance of long-term care requires seeking alternative sources of information, such as population, patient or provider surveys or health insurance records.

Although databases are available in the Region, they can be linked with other health system data in less than half the countries. This has implications for understanding the continuity of care and coordination across settings. In such instances, analysis will have to rely on survey data.

Aspects related to the people-centredness and accessibility of health services can only be assessed through patient-reported experiences. These are documented in 16 countries, mostly on an ad hoc basis and thus not representative at the national level. Despite this variability in the available data, measures on patient experiences are considered highly relevant and, in a forward-looking perspective, merit being included in exploring and mapping in further detail the current monitoring conducted by countries.

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Annex. Scanning survey questions

Please indicate whether the following national data sources exist in your country by circling **Y** (yes), **N** (no) or **DNK** (do not know). If yes, please specify the latest available year as relevant. This exercise is for information scanning only and will inform the development of a data collection process for monitoring the WHO European Framework for Action on Integrated Health Services Delivery.

Availlability of databases and existing assessments			
1. Registries of health professionals	Υ	Ν	DNK
Are the data disaggregated for primary care services?	Υ	Ν	DNK
2. Records on health staff at the facility level	Υ	Ν	DNK
3. Data on the availability of equipment at the facility level	Υ	Ν	DNK
If yes, year of last update:			
4. Health insurance records	Υ	Ν	DNK
Is information collected about a person's socioeconomic status or vulnerabilities (such as pensioner status, war veteran, employment status etc.)?	Υ	N	DNK
Are data linked with medical records	Υ	Ν	DNK
5. National social or health accounts	Υ	Ν	DNK
If yes, year of last update:			
6. (Essential) medicines list review	Υ	Ν	DNK
If yes, year of last update:			

Existence of organized groups			
 Organized groups of general practitioners or family medicine doctors (such as professional associations, professional representatives and/or labour unions) 	Y	N	DNK
2. Patient associations recognized as a legal entity for the following diseases:			
Cancer	Υ	Ν	DNK
Diabetes	Υ	Ν	DNK
Heart disease	Υ	Ν	DNK

Please indicate in the boxes Y (yes), N (no) or DNK (do not know). Consider the items in the left column with the types of data listed.

	Types of data	rta Ta								
Characteristic	Hospital inpatient data	Primary care data	Cancer registry data	Data on prescription medicines in primary care	Data on prescription medicines in secondary care	Mortality data	Long-term care data	Mental hospital inpatient data	Patient experience data	Population health survey data
National or integrated database available										
Adherence to international coding										
Records for patients or people (individual-level data)										
Unique patient identification numberª										
National ID system to link the data										
National health service ID system to link the data										
Patient information collected (such as residence, profession etc.)										

^a Can be used to electronically link and retrieve a health record across multiple databases.

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.

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