Economic and Social Council

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Items for discussion and decision: health statistics

Report of the World Health Organization on health statistics

Note by the Secretary-General

In response to a request made by the Statistical Commission at its forty-third session (see E/2012/24, chap. I.A), the Secretary-General has the honour to transmit the report of the World Health Organization (WHO) on health statistics, which summarizes its activities in the field of health statistics. Monitoring the health situation and trends in countries is a core function of WHO. Its work programme is developed on the basis of close interaction with States members of WHO and often associated with a specific resolution adopted in the World Health Assembly. The report describes the work done by WHO in three areas: monitoring levels and trends in health, developing and promoting standards and tools for health information, and strengthening country monitoring and measurement. The report concludes with a brief list of points for discussion by the Commission.

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* E/CN.3/2013/1.

I. Monitoring levels and trends in health

1.   The work of WHO at its headquarters on monitoring levels and trends in health, with special attention to equity, is referred to as the Global Health Observatory. In addition, all six regional offices of WHO maintain regional health observatories with indicators selected in consultation with the respective member States. The present section describes the different components of the Global Health Observatory, focusing on headquarters activities.

A. Health data collection and compilation

2.   WHO collects, analyses and synthesizes a large amount of data on global health situations and trends. These data are collected by different departments that work on particular diseases, risk factors and health systems, and are kept in many separate databases. Over recent years, the Department of Health Statistics and Information Systems has placed substantial priority on regular production of systematic and internally consistent estimates for mortality, incidence, prevalence, burden of disease, risk factor exposures and attributable outcomes. At the same time, there has been increasing effort and demand to harmonize with other United Nations and international agencies through inter-agency groups.

B. Causes of death

3.   WHO has carried out several successive updates of estimates of mortality by cause, age and sex at country level for single years 2000, 2001, 2002, 2004 and 2008. In 2010, WHO and the Child Health Epidemiology Reference Group prepared estimates of deaths by cause for children under 5 for the years 2000-2010. In response to the increasing demand for time series and the increasing emphasis on monitoring and accountability (Millennium Development Goals, non-communicable diseases, other health priorities), WHO is moving towards a two-year revision cycle for comprehensive estimates of trends in deaths by cause. Regional-level trends will be released in early 2013, with further work in 2013 towards the release of country-level estimates, drawing on the work of WHO programmes, the Population Division of the Secretariat and other inter-agency and expert collaborations.

C. Health financing statistics

4.   Health financing is concerned with how financial resources are generated, allocated and used in health systems. The Department of Health Statistics and Information Systems has maintained the global health expenditure database for more than a decade. It provides internationally comparable numbers on national health expenditures. WHO updates the data annually, taking, adjusting and estimating the numbers based on publicly available reports (national health account reports, reports from the Ministry of Finance, central bank, national statistics offices, public expenditure information and reports from the World Bank, the International Monetary Fund, and so forth). The estimates are sent out to the ministries of health for validation prior to publication, but users are advised that country data may still differ in terms of definitions, data-collection methods, population coverage and

estimation methods used. This database is the source for the health expenditure tables in the *World Health Statistics* report and the Global Health Observatory.

D. Dissemination platform

5.   In response to increased demand for transparency and accountability at global and country levels, WHO has established the Global Health Observatory with the aim of improving access to health data, statistics and analyses. The Observatory is an organization-wide resource with strong links to countries and regional offices. It aims to enhance the efficiency, quality and transparency of WHO work in monitoring and analysing the situation and trends on global health priorities (from Millennium Development Goals, mortality and burden of disease, infectious diseases, non-communicable diseases and risk factors, health systems, health equity, environmental health, violence and injuries and substance use). Over 900 indicators and over 60 data sets are available for download from the Observatory, along with a significant range of WHO statistical reports, maps, country profiles and related information products.[1]

6.   The *World Health Statistics* is published every year at the time of the World Health Assembly and contains a wide range of health statistics on mortality, causes of death, morbidity, coverage of interventions, risk factors, health systems and equity in health. It also includes an annual update of progress towards the health Millennium Development Goals, in response to a request by the States members of WHO.

E. Global health estimates

7.   Specific WHO programmes and collaborating agencies collect information and data from States members of WHO and regularly publish updated estimates of trends in key indicators for their topic. Examples include the *Global Tuberculosis Control* report, the *World Malaria Report*, the annual epidemiological reports of the Joint United Nations Programme on HIV/AIDS (UNAIDS), the successive updates of the International Agency for Research on Cancer GLOBOCAN estimates. WHO prepares updated estimates for life tables and all-cause deaths by age, sex and year for its member States on a two-year revision cycle, drawing also on the work of the Population Division.

8.   Global health estimates are prepared and published in the Global Health Observatory on a two-year revision cycle, drawing on the programme-specific statistical work and that of collaborating agencies and expert groups. The estimates include a comprehensive set of disease and injury causes, and selected major health risks and determinants.

F. Clearance process for estimates

9.   The Department of Health Statistics and Information Systems carries out a statistical clearance process for all statements and claims made officially by WHO headquarters about population-level (country, regional, global) estimates for health

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[1] Available from www.who.int/gho/en.

indicators (e.g., mortality, incidence, prevalence, burden of disease, etc.), health determinants (e.g., risk factor prevalence, distributions, etc.), intervention coverage, costs, effectiveness and cost-effectiveness, and health system financing and efficiency.

10. The objective of statistical clearance is to maximize the consistency and quality of statistics published by WHO, which is using a set of criteria for its official statistics, in line with the general principles of statistics. These include public access to data inputs and results at the country level, publicly accessible peer-reviewed replicable methods, expert group mechanisms, a consistency check for mortality data, and country consultation prior to publication. The latter involves a two- to three-month process of interaction in which all input data, methods and results are shared with the member State (through the web), for Ministry of Health and statistical inputs and discussion.

G. Collaboration with other United Nations agencies and expert groups

11. The most successful models of WHO as a global monitoring body emerge when programmes invest in internal capacity and the mobilization of the leading expertise in the field by involving academic institutions and relevant partners and developing inter-agency collaborative groups. Relatively well-resourced expert groups such as the Child Health Epidemiology Reference Group and the UNAIDS Reference Group on Estimates, Modelling and Projections — the Epidemiology Reference Group — are good examples. WHO participates in well-functioning inter-agency collaborations for the regular updating of AIDS statistics (with UNAIDS), child mortality (the United Nations Inter-agency Group for Child Mortality Estimation and the United Nations Maternal Mortality Estimation Inter-agency Group) and is developing closer working relationships with the Population Division regarding all-cause mortality.

II. Standards and tools for health information

A. Classifications

12. WHO is undertaking the revision of the International Classification of Diseases (ICD), to be released in 2015. ICD is the foundation for health statistics. All States members of WHO have committed to report their statistics on mortality and morbidity events to WHO, using the classification, which provides a common language for comparable statistics.

13. A Beta version of ICD-11 was released in May 2012 to compile comments and additional proposals, and conduct field testing before the revision is finalized. The ICD Beta version is presented in a structured wiki-like platform which is moderated and proposals are systematically peer reviewed. In this way, the process is open to many stakeholders to make their input. The result is expected to be a more comprehensive, scientific and user-friendly classification than ever before.

14. The revision process allows integration of new diseases reported because of newly discovered genes and microbes. On the other hand, it is being fully digitalized, so that users can zoom in and out in the classification structure like "Google Maps".

In this way, we can have consistent versions of ICD for use ranging from short mortality reporting by verbal autopsy to detailed research on genomics.

15. Another important aspect of the ICD revision has been the inclusion of traditional medicine conditions. In many parts of the world, traditional medicine is practised but not captured in health information systems. In the first module, traditional medicine conditions commonly used in line with traditional Chinese, Korean and Japanese medicines are classified as disorders and patterns. The inclusion of traditional medicine conditions is not necessarily an approval but a provision of standard tools for their evaluation in terms of their form, frequency and costs. Accompanying classifications will be used to evaluate the efficacy and safety of traditional medicine interventions.

16. The International Classification of Functioning, Disability and Health (ICF) is a framework for organizing and documenting information on functioning and disability, published by WHO in 2001. ICF provides a standard language and a conceptual basis for definition and measurement, and related classifications and codes. It integrates the major models of disability, both the medical model and the social model. It recognizes the role of both the impact of health conditions and the environmental factors in the creation of disability.

17. ICF conceptualizes functioning and disability in the context of health, and therefore does not cover circumstances that are brought about entirely by socioeconomic or cultural factors.

18. ICF covers the life span. A process of updating the classification is managed by WHO and its classifications network; for instance, a current process is merging ICF and the ICF children and youth version. Similar efforts are under way to improve its application in ageing populations.

19. ICF provides a scientific basis for describing, understanding and studying health and health-related states. In ICF terms, health is understood as functioning and any decrement of health is classified as disability in a given domain. This makes ICF a common ruler for monitoring and evaluating the outcomes in clinical studies, as well as a relevant tool to describe the health of populations.

20. Nevertheless, if poverty results in a health condition, for instance malnutrition, related functioning difficulties can be described using ICF. A health condition — whether or not diagnosed — is always understood to be present in ICF applications.

21. ICF has been translated into more than 35 languages and is not only used in the health sector but also in other sectors such as education, labour and social security. One of the main uses is the linking of the policy and legislation with services in the Convention on the Rights of Persons with Disabilities.

B. Health data collection and analysis

1. Health facility surveys

22. WHO has been working with USAID, academic institutions, ministries of health of several countries and global partners on the development of a facility assessment methodology aimed at rapidly measuring and tracking progress in health systems strengthening. The Service Availability and Readiness Assessment (SARA) is designed to generate a set of indicators on service availability and readiness,

which can be used to systematically assess and monitor the availability of health facilities and their readiness to deliver the essential package of health interventions.

23.   General service availability indicators include number and distribution of health facilities, in-patient beds and core medical professionals per 10,000 population, and maternity beds per 1,000 pregnant women. Indicators of service readiness reflect the capacity of facilities to provide interventions across 19 programme areas, including family planning, antenatal care, delivery, newborn, child and adolescent health-care communicable diseases and non-communicable diseases. The tool assesses the essential inputs required to deliver each of the 19 services, including the availability of trained staff and guidelines, functioning equipment, diagnostic capacities, essential medicines and commodities.

24.   SARA builds on previous approaches designed to assess health facility service delivery, and relies on a rapid data-collection and analysis methodology. It can also be combined with a data verification exercise to assess data quality of the facility reporting system (Health Management Information System). The facility survey is implemented a few months prior to a country's annual health sector review, in order to provide objective information and analyses on the state of the service delivery system, thus informing and supporting operational planning and management of health services and resource allocation decisions. During 2012, the tools and related technical materials were finalized and published, and WHO supported facility surveys using the SARA methodology in Sierra Leone, Uganda, the Democratic Republic of the Congo, Libya, Togo and Burkina Faso. Further work is planned on the development of a specialized hospital module and the roll-out of the SARA methodology as a systematic annual assessment of a country's health service delivery system.

2.   Health measurement in surveys

25.   WHO has implemented several strategies to measure health status in its studies consistent with the international conceptual framework embodied in ICF. Self-reported health has been measured as functioning in a given set of domains. In addition, difficulties in day-to-day tasks are also included in the measurement. In these studies, WHO also includes performance tests for mobility, cognition and vision. Other measurements, such as anthropometry, spirometry and blood pressure measurement, are also carried out. Dried blood spots are collected for the measurement of a range of biomarkers.

26.   WHO is currently designing a model disability survey involving all stakeholders. In preparation, an extensive review of ongoing efforts in the area has been carried out. Data sets from a subset of national surveys on disability and from the Washington Group's studies have been analysed. A draft instrument was prepared for presentation at an expert meeting on 5 and 6 December 2012, followed by cognitive and pilot testing before carrying out some national surveys with the final version of the instrument. The final version, along with all training materials, will be made available by WHO.

3.   Verbal autopsy

27.   In 2007, WHO published a verbal autopsy instrument and manual, to assist the standardized collection of information for the ascertainment of the probable cause of death through an interview with the relatives of the deceased. The verbal autopsy is

needed to collect such information in cases where no medical certification of death can be done. This is usually the case for home deaths in many low- and middle-income countries. Recently, WHO has published a draft version of a shorter verbal autopsy instrument with the potential of applying it in community settings as part of civil registration and vital statistics systems. WHO is working with regional commissions on this. There is also work with academic institutions to develop automated diagnoses of the probable cause of death based on the standard verbal autopsy questionnaire.

4. **Data quality assessment and analysis approaches and tools**

28. Health facility data are a critical input into assessing national progress and performance on an annual basis and they provide the basis for subnational/district performance assessment. As part of its efforts to strengthen analytical capacity and data quality for progress and performance reviews, and in collaboration with partners such as the GAVI Alliance and the Global Fund to Fight AIDS, Tuberculosis and Malaria, WHO has developed the health facility data quality report card to examine several dimensions of data quality through a desk review of available data and a data verification survey. The aim of the report card is to ensure systematic assessment of completeness and internal and external consistency of the reported data and intervention coverage rates and to identify any data quality problems that need to be addressed. As part of the approach, the quality of data generated by a health facility-based information system for four-core tracer indicators is assessed.

III. Strengthening country monitoring and measurement

A. Accountability for women's and children's health

29. At country, regional and global levels, WHO and partners have been working to strengthen country health information systems and build strong country capacity for monitoring of results and accountability. The approach builds on the International Health Partnership (IHP+) approach to strengthen one country-led platform for monitoring, evaluation and review of national health strategies.[2] This implies the existence of well-established processes for monitoring progress and performance that include quantitative and qualitative assessment and analyses, supported by a well-functioning country health information system.

30. The approach is supported globally by the Global Fund, GAVI and the World Bank, among others, and has been boosted by the recommendations of the recent Commission on Information and Accountability for the Secretary-General's Global Strategy for Women's and Children's Health. The Commission's recommendations focus efforts to strengthen monitoring of results, civil registration and vital statistics systems and maternal death review systems, expanding the use of innovation and information and communications technology and improving tracking of country and global resources. Strengthening national review and accountability mechanisms and engaging high-level political commitment through advocacy and outreach are also addressed.

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[2] WHO, *Monitoring, Evaluation and Review of National Health Strategies: a country-led platform for information and accountability* (Geneva, 2011).

31.   As part of this effort, 71 of the 75 countries prioritized by the Commission have completed an assessment of the existing accountability and health information systems, and over 60 are expected to develop a road map for a country accountability framework that outlines how the gaps and priorities in accountability and monitoring and evaluation systems will be addressed and implemented over the next three years. Key country priorities include strengthening monitoring and evaluation plans of national health sector strategies, improving birth and death reporting through better use of ICD-10 for hospital reporting and innovative technologies for community reporting, conducting facility surveys to verify data quality and assess service readiness and quality of care, improving health facility data availability and quality for annual monitoring, improving resource tracking through regular production of health accounts, strengthening analytical work in preparation for reviews, including equity analyses and improving data accessibility and transparency through the establishment of national health observatories.

B.   Multi-country study on health and ageing

32.   The World Health Organization Study on Global AGEing and Adult Health (SAGE) is a longitudinal study with nationally representative cohorts of persons aged 50 years and older in China, Ghana, India, Mexico, the Russian Federation and South Africa and comparison samples of younger adults aged 18-49 years in each participating country to study health and health-related outcomes and their determinants with a sample size of 42,464 respondents. SAGE currently has follow-up data on 8,148 respondents. SAGE survey modules have also been administered at eight sites in the International Network for the Demographic Evaluation of Populations and Their Health (INDEPTH) in developing countries, a surveillance enterprise in a combined sample size of over 46,261 respondents. SAGE includes performance tests and the collection of dried blood spots. The performance tests in SAGE include visual acuity (near and distant vision), cognition (verbal fluency, word recall and digit span), mobility (timed walk), grip strength, blood pressure, anthropometry (height, weight, waist and hip circumferences) and spirometry. The assays for haemoglobin, glycosylated haemoglobin (HbA1c), high-sensitivity C-reactive protein (hs-CRP) and the Epstein-Barr virus have been standardized and validated against venous blood samples. Future waves of SAGE are planned for 2013 and 2015-2016. SAGE instruments have been adapted for and are harmonized with other international studies.

IV.   Points for discussion

33.   **The Commission is invited to:**

    (a)   **Note the focus of WHO on strengthening statistical capacity in ministries of health, including cause of death attribution and health facility statistics;**

    (b)   **Comment on the work of WHO on international standards for health data collection and analysis;**

    (c)   **Comment on strengthening the role of national statistical offices to improve country health statistics.**

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