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Health informatics — Health indicators conceptual framework

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National foreword

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 21667 was prepared by Technical Committee ISO/TC 215, *Health informatics*.

This first edition of ISO 21667 cancels and replaces ISO/TS 21667:2004, of which it constitutes a technical revision.

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Introduction

Heightened interest in the measurement and monitoring of the performance of health care systems, as well as accountability and responsiveness to payors and stakeholders is now evident on an international scale. Consequently, many countries have begun the systematic definition and collection of health information for monitoring health system performance. This trend has also concomitantly driven, and is driven by, an enhanced data infrastructure that allows for more explicit and rigorous examination of the health of populations and their health care systems. More often than not, this has taken the form of the collection of specific health indicators with which to describe a variety of health and health system-related trends and factors.

The term *health indicator* refers to a single summary measure, most often expressed in quantitative terms, that represents a key dimension of health status, the health care system or related factors. A health indicator must be informative, and also must be sensitive to variations over time and across jurisdictions. Indicators are able to flag issues that require more in-depth examination to determine causes for variation, and to identify opportunities for improvement, as well as establishing the most effective use of research resources. They may also be used as a rapid means to evaluate the effects of interventions or to make comparisons as health systems evolve.

In order for them to be useful for monitoring health or health system performance, however, explicit criteria must be applied to choosing and defining health indicators. This framework is intended to inform the selection of health indicators that can be used to monitor and manage the health care system and overall performance improvements. The selection must be based on some agreement about what is to be measured, and for what purpose, and be informed by a clear conceptual framework. This implies a common framework, to be used internationally, for structuring the way health and health system performance is measured. This International Standard describes a comprehensive, high-level taxonomy of the key types of indicators that are useful for assessing population health and health services. While, in many cases, health indicators may be best constructed from readily available data, in other situations a *health indicators conceptual framework* may inform additional data collection initiatives that are required for understanding health and health system performance. It is important to note that any data collection must be carried out according to privacy and confidentiality legislation and ethical principles.

Working toward a standard health indicators framework will undoubtedly foster a common language for communication between countries and ultimately lead to greater commonalities for indicator development. This ought to lead to greater potential for generating internationally comparable health data in the long term, and so permit consistent reporting, dissemination and analysis.

This initiative can also be seen as complementary to work currently underway in other organizations, such as the Organization for Economic Cooperation and Development (OECD). The adoption of a common health indicators conceptual framework will further stimulate efforts to develop and collect common health indicators internationally. Furthermore, a harmonized effort to develop an internationally accepted health indicators conceptual framework will not only foster increasingly robust cross-national comparisons and analyses, but may also facilitate the development of comparable data that can be used as a basis for the setting of international benchmarks. The results of such endeavours may be invaluable for informing national health policy related to health expenditures, health human resources requirements or the organization of health and social systems. Ultimately, these developments may facilitate an improved global understanding about variations in health, variations in health care and the effect of other determinants of health in the context of other essential factors. Furthermore, indicator collection, benchmarking and analysis can lead to continuous quality improvement, the identification of factors requiring further analysis and, ultimately, improvements in health within countries and internationally.

NOTE See Annex A for more information regarding the OECD initiative and its relationship to this International Standard's health indicators conceptual framework.

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Health informatics — Health indicators conceptual framework

1 Scope

This International Standard establishes a common health indicators conceptual framework and is intended to foster a common vocabulary and conceptual definitions for the resultant framework. The framework

a) defines the appropriate dimensions and sub-dimensions required to describe the health of the population and performance of a health care system,

b) is sufficiently broad (high-level) to accommodate a variety of health care systems, and

c) is comprehensive, encapsulating all of the factors related to health outcomes and health system performance and utilization, as well as regional and national variations.

NOTE 1 See Annex B for a more complete discussion of the underlying rationale for this framework.

NOTE 2 Many countries have already developed their own models for directing the collection and analysis of health indicators. For the purposes of national reporting, these existing frameworks are not expected to change. Rather, this framework can be viewed as a complement to currently existing frameworks. For example, if a particular health indicators framework currently focuses only on health system performance, the comprehensive approach proposed here can serve to augment and/or supplement the currently used model or models.

NOTE 3 Individual jurisdictions may elect to operationalize the conceptual framework differently. Because the conceptual dimensions represent a high-level taxonomy, this provides considerable discretion and leeway in the selection of specific indicators by individual countries. This focus on a high-level taxonomy also allows for sufficient flexibility for the inclusion of new indicators in the future, as new issues emerge and additional data become available. Because specific data elements are not defined, jurisdictions have the freedom to populate this framework with the most relevant, and available, indicators for their specific situations.

This International Standard does not identify or describe individual indicators or specific data elements for the health indicators conceptual framework; nor does it address needs analysis, demand analysis or the range of activities that need to be supported for health system management.

The definition of benchmarks and/or approaches used in the definition of benchmarks is outside the scope of this International Standard.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
health
resource for everyday life, not the objective of living, and a positive concept emphasizing social and personal resources, as well as physical capacities

[Ottawa Charter for Health Promotion, World Health Organization (WHO), 1986]

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2.2
health indicator
single summary measure, most often expressed in quantitative terms, that represents a key dimension of health status, the health care system, or related factors

NOTE A health indicator must be informative, and also be sensitive to variations over time and across jurisdictions.

3 Health indicators conceptual framework

3.1 Framework

The health indicators conceptual framework shall be as outlined in Table 1. See Annex C for background information relating to the framework outlined in Table 1.

Table 1 — Health indicators conceptual framework

Dimensions	Sub-dimensions				
Health status	Well-being	Health conditions	Human function	Deaths	
Determinants of health	Health behaviours	Socio-economic factors	Social and community factors	Environmental factors	Genetic factors
Health system performance	Acceptability	Accessibility	Appropriateness	Competence	
	Continuity	Effectiveness	Efficiency	Safety	
Community and health system characteristics	Resources	Population	Health system characteristics		

3.2 Framework dimensions

3.2.1 Health status

The dimension of health status is described in Table 2. See Annex D for further information.

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