
**Health informatics — Health indicators
conceptual framework**

Informatique de santé — Cadre conceptuel d'indicateurs de santé

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO/TS 21667:2004](https://standards.iteh.ai/catalog/standards/sist/aa417452-ccc4-462f-8591-f6e9db2ee96c/iso-ts-21667-2004)

[https://standards.iteh.ai/catalog/standards/sist/aa417452-ccc4-462f-8591-
f6e9db2ee96c/iso-ts-21667-2004](https://standards.iteh.ai/catalog/standards/sist/aa417452-ccc4-462f-8591-f6e9db2ee96c/iso-ts-21667-2004)



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO/TS 21667:2004](#)

<https://standards.iteh.ai/catalog/standards/sist/aa417452-ccc4-462f-8591-f6e9db2ee96c/iso-ts-21667-2004>

© ISO 2004

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Terms and definitions	1
3 Health indicators conceptual framework	2
3.1 Framework	2
3.2 Equity framework dimensions	2
3.2.1 Health status	2
3.2.2 Non-medical determinants of health	3
3.2.3 Health system performance	4
3.2.4 Community and health system characteristics (contextual information)	5
3.2.5 Equity	6
Annex A (informative) Correspondence with OECD health indicator initiatives	7
Annex B (informative) Rationale for a common health indicators conceptual framework	9
Annex C (informative) Background to the health indicators conceptual framework	10
Annex D (informative) Health status	12
Annex E (informative) Non-medical determinants of health	13
Annex F (informative) Health system performance	15
Annex G (informative) Community and health system characteristics (contextual indicators)	16
Annex H (informative) Equity	17
Bibliography	18

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.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

- an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;
- an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

<https://standards.iteh.ai/catalog/standards/sist/aa417452-ccc4-462f-8591-16e9db34cc96/iso-ts-21667-2004>

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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

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 be sensitive to variations over time and across jurisdictions.

In order for them to be useful for monitoring health or health system performance, however, explicit criteria must be applied for choosing and defining health indicators. The selection must be based on some agreement about what is to be measured, and for what purpose, and informed by a clear conceptual framework. This implies a common framework, to be used internationally, for structuring the way we measure health and health system performance. Here, a comprehensive, high-level taxonomy of the key types of indicators that are useful for assessing population health and health services is described.

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 could, and in fact should, lead to greater potential for generating internationally comparable health data in the long term, in order to permit consistent reporting, dissemination and analysis.

This initiative can also be seen as complementary to work currently underway by other organizations — the OECD, for example. 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, non-medical determinants of health in the context of other essential factors.

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO/TS 21667:2004](https://standards.iteh.ai/catalog/standards/sist/aa417452-ccc4-462f-8591-f6e9db2ee96c/iso-ts-21667-2004)

<https://standards.iteh.ai/catalog/standards/sist/aa417452-ccc4-462f-8591-f6e9db2ee96c/iso-ts-21667-2004>

Health informatics — Health indicators conceptual framework

1 Scope

This Technical Specification establishes a common health indicators conceptual framework for the field of health informatics. It is intended to foster a common vocabulary and conceptual definitions for a framework which

- defines the appropriate dimensions and subdimensions required to describe the health of the population and performance of a health care system,
- is sufficiently broad (high-level) to accommodate a variety of health care systems, and
- is comprehensive, encapsulating all of the factors that are related to health outcomes and health system performance and utilization, and regional and national variations.

This Technical Specification does not identify or describe individual indicators or specific data elements for the health indicators conceptual framework. As a next step, it has been proposed that a subsequent work item address the metadata, or the characteristics and common attributes, of actual indicators that might be contained in the health indicators conceptual framework.

The definition of benchmarks and/or approaches used in the definition of benchmarks is outside the scope of this Technical Specification. standards.iteh.ai/catalog/standards/sist/aa417452-ccc4-462f-8591-f6e9db2ee96c/iso-ts-21667-2004

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 compliment to currently existing frameworks. For example, if a particular health indicators framework currently focuses only on health system performance, the comprehensive approach suggested here may serve to augment and/or supplement the currently used model(s).

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.

2 Terms and definitions

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

3.1

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 is to be informative and also sensitive to variations over time and across jurisdictions.

3 Health indicators conceptual framework

3.1 Framework

The health indicators conceptual framework, composed of four dimensions and their subdimensions and considering equity, shall be as outlined in Table 1.

NOTE See Annex C for background information relating to the framework of Table 1.

Table 1 — Health indicators conceptual framework

Dimensions	Sub-dimensions					Equity
1 Health status	Well-being	Health conditions	Human function	Deaths		
2 Non-medical determinants of health	Health behaviors	Socioeconomic factors	Social and community factors	Environmental factors	Genetic factors	
3 Health system performance	Acceptability	Accessibility	Appropriateness		Competence	
	Continuity	Effectiveness	Efficiency		Safety	
4 Community and health system characteristics	Resources		Population	Health system		

iTeh STANDARD PREVIEW

3.2 Equity framework dimensions (standards.iteh.ai)

3.2.1 Dimension 1 — Health status

ISO/TS 21667:2004

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

Table 2 — Health status

Subdimensions	Description	Examples of indicators
Well-being	Broad measures of the physical, mental and social well-being of individuals	— Self-rated health — Self-esteem
Health conditions	Alterations or attributes of the health status of an individual which may lead to distress, interference with daily activities, or contact with health services; it may be a disease (acute or chronic), disorder, injury or trauma, or reflect other health-related states such as pregnancy, aging, stress, congenital anomaly, or genetic predisposition ^[45] .	— Arthritis — Diabetes — Chronic pain — Depression — Food and waterborne diseases — Injury hospitalization

Table 2 (continued)

Subdimensions	Description	Examples of indicators
Human function	Levels of human function are associated with the consequences of disease, disorder, injury and other health conditions; they include body function/structure (impairments), activities (activity limitations, and participation (restrictions in participation) ^[45] .	<ul style="list-style-type: none"> — Functional health — Disability days — Activity limitation — Health expectancy — Disability free life expectancy
Deaths	A range of age-specific and condition specific mortality rates, as well as derived indicators.	<ul style="list-style-type: none"> — Infant mortality — Life expectancy — Potential years of life lost — Circulatory deaths — Unintentional injury deaths

iTeh STANDARD PREVIEW

3.2.2 Dimension 2 — Non-medical determinants of health

(standards.iteh.ai)

The dimension of non-medical determinants of health is described in Table 3. See Annex E for further information.

[ISO/TS 21667:2004](#)

<https://standards.iteh.ai/catalog/standards/sist/aa417452-ccc4-462f-8591-13e7402e790c/iso-ts-21667-2004>

NOTE In order to enable a better understanding of geographic or temporal variations in health status and health system performance, a variety of non-medical determinants of health have been included in the framework. Non-medical determinants of health are those that fall outside of the sphere of medical/health care, generally speaking, but that have been shown to affect health status and, in some cases, access to health care services.

Table 3 — Non-medical determinants of health

Subdimensions	Description	Examples of indicators
Health behaviors	Aspects of personal behavior and risk factors that epidemiological studies have shown to influence health status.	<ul style="list-style-type: none"> — Smoking rate — Physical activity
Socioeconomic factors	Indicators related to the socioeconomic characteristics of the population that epidemiological studies have shown to be related to health.	<ul style="list-style-type: none"> — Unemployment rate — Low income rate — High school graduation
Social and community factors	Measures the prevalence of social and community factors, such as social support, life stress, or social capital that epidemiological studies have shown to be related to health.	<ul style="list-style-type: none"> — School readiness — Social support — Housing affordability — Literacy
Environmental factors	Environmental factors with the potential to influence human health.	<ul style="list-style-type: none"> — Water quality
Genetic factors	Factors outside those normally influenced by individual behaviors or by the social, economic or physical environment; genetic factors determine predisposition to certain conditions.	<ul style="list-style-type: none"> — Rates of genetically determined diseases (e.g. Down's syndrome)

3.2.3 Dimension 3 — Health system performance

The dimension of health system performance is described in Table 4. See Annex F for further information.

iTech STANDARD PREVIEW
(standards.itech.ai)

<https://standards.itech.ai/catalog/standards/sist/aa417452-ccc4-462f-8591-f6e9db2ee96c/iso-ts-21667-2004>

Table 4 — Health system performance

Subdimensions	Description	Examples of indicators
Acceptability	All care/services provided meet the expectations of the client, community, providers and paying organizations, recognizing that there may be conflicting, competing interests between stakeholders, and that the needs of the clients/patients are paramount ^[5] .	— Patient satisfaction
Accessibility	The ability of clients/patients to obtain care/service at the right place and the right time, based on respective needs ^[5] .	— Waiting times — Practice availability — Availability of dentists
Appropriateness	Care/service provided is relevant to the clients'/patients' needs and based on established standards ^[5] .	— Inappropriately used surgery — Appropriate use of ACEI at discharge for heart failure
Competence	An individual's knowledge and skills are appropriate to the care/service being provided ^[5] .	—
Continuity	The ability to provide uninterrupted coordinated care/service across programs, practitioners, organizations, and levels of care/service, over time ^[5] .	—
Effectiveness	The care/service, intervention or action achieves the desired results ^[5] . STANDARD PREVIEW (standards.iteh.ai) https://standards.iteh.ai/catalog/standards/sist/aa417452-ccc4-462f-8591-f6e9db2ee96c/iso-ts-21667-2004	— Cancer survival — Recurrence of hernia after repair — Smoking cessation during pregnancy (effectiveness of maternal health care) — Chronic care management: admission rates for asthma, diabetes, epilepsy
Efficiency	Achieving the desired results with the most cost-effective use of resources ^[5] .	— Avoidable hospitalizations — Cost per casemix-adjusted separation — Cost-effective prescribing
Safety	Potential risks of an intervention or the environment are avoided or minimized ^[5] .	— Hospital-acquired infection rate

3.2.4 Dimension 4 — Community and health system characteristics (contextual information)

The dimension of community and health system characteristics contains contextual information which may be useful for the interpretation of indicators, and is described in Table 5. See Annex G for further information.