

TECHNICAL SPECIFICATION

ISO 17120

First edition
2004-09-15

Health informatics — Country identifier standards

Informatique de santé — Normes d'identificateur de pays

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO/TS 17120:2004](https://standards.iteh.ai/catalog/standards/sist/c042aab5-5530-4317-ba85-4ff7e75d0c5b/iso-ts-17120-2004)

<https://standards.iteh.ai/catalog/standards/sist/c042aab5-5530-4317-ba85-4ff7e75d0c5b/iso-ts-17120-2004>



Reference number
ISO/TS 17120:2004(E)

© ISO 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 17120:2004](https://standards.iteh.ai/catalog/standards/sist/c042aab5-5530-4317-ba85-4ff7e75d0c5b/iso-ts-17120-2004)

<https://standards.iteh.ai/catalog/standards/sist/c042aab5-5530-4317-ba85-4ff7e75d0c5b/iso-ts-17120-2004>

© 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 Normative references | 1 |
| 3 Country identifier standards | 1 |
| 3.1 General | 1 |
| 3.1.1 ISO 3166 | 1 |
| 3.1.2 ITU | 2 |
| 3.2 Rationale | 2 |
| 3.3 Liaison | 2 |
| Annex A (informative) Technical introduction | 3 |
| Annex B (informative) Overview of ISO 3166 | 6 |
| Annex C (informative) Overview of ITU country identifier standards | 8 |
| Annex D (informative) Overview of other agency country identifier standards | 9 |
| Annex E (informative) Strength and weakness analysis: ISO and ITU for health informatics | 11 |

(standards.iteh.ai)

[ISO/TS 17120:2004](https://standards.iteh.ai/catalog/standards/sist/c042aab5-5530-4317-ba85-4ff7e75d0c5b/iso-ts-17120-2004)

<https://standards.iteh.ai/catalog/standards/sist/c042aab5-5530-4317-ba85-4ff7e75d0c5b/iso-ts-17120-2004>

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.

[ISO/TS 17120:2004](https://standards.iteh.ai/catalog/standards/sist/c042aaf5-5530-4317-ba85-487e7510c5f5/iso-ts-17120-2004)

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 17120 was prepared by Technical Committee ISO/TC 215, *Health informatics*.

Introduction

Mechanisms to identify countries and their sub-divisions exist in many forms and for many uses. From statistical aggregation to telecommunications use, from internet top-level domains to member country lists, and from healthcare information to athletic records, there is a need for the consistent, comparable, and codified identification of countries. These mechanisms are “standard” in the sense that a formal list of names and codes is kept and used by multiple individuals or groups, and processes are in place for maintenance of these lists. This Technical Specification provides a description, review, and recommendation, all within a healthcare information context, of two internationally recognized standards that are in use today for country identifiers and their subdivisions.

Annexes A, B, C, D and E of this Technical Specification are for information only. These annexes provide an overview of various country identifier standards used internationally, and provide guidance around the use of such standards for purposes of developing other health informatics standards. A review of various international organizations and their application or use of country identifier codes has also been included.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO/TS 17120:2004](https://standards.iteh.ai/catalog/standards/sist/c042aab5-5530-4317-ba85-4ff7e75d0c5b/iso-ts-17120-2004)

<https://standards.iteh.ai/catalog/standards/sist/c042aab5-5530-4317-ba85-4ff7e75d0c5b/iso-ts-17120-2004>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO/TS 17120:2004

<https://standards.iteh.ai/catalog/standards/sist/c042aab5-5530-4317-ba85-4ff7e75d0c5b/iso-ts-17120-2004>

Health informatics — Country identifier standards

1 Scope

This Technical Specification specifies country identifier standards suitable for use within health informatics applications and standards development by health informatics planners, developers, implementers and analysts.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3166-1:1997, *Codes for the representation of names of countries and their subdivisions — Part 1: Country codes*

ISO 3166-2:1998, *Codes for the representation of names of countries and their subdivisions — Part 2: Country subdivision code*

ISO 3166-3:1999, *Codes for the representation of names of countries and their subdivisions — Part 3: Code for formerly used names of countries*

ITU-T Recommendation E.164.1, *Criteria and procedures for the reservation, assignment, and reclamation of E.164 country codes and associated Identification Codes (ICs)*

3 Country identifier standards

3.1 General

3.1.1 ISO 3166

ISO 3166-1 shall be the primary reference standard for use in health care to identify countries when systems, applications or data formats require country identifiers.

ISO 3166-2 shall be the primary reference standard for use in health care to identify subdivisions of a country where systems, applications or data formats require such subdivision identifiers. Where relevant to local or administrative health care requirements, other subdivision identifiers may also be considered.

ISO 3166-3 shall be the primary reference standard for use in health care for historic data for those country names that are no longer current and where systems, applications or data formats require such historic country and subdivision identifiers.

3.1.2 ITU

The International Telecommunication Union's ITU-T Recommendation E.164.1 shall be the reference standard for use in health care to identify countries where a telecommunications patient contact requires country identifiers.

3.2 Rationale

The rationale for the standards identified in 3.1.1 and 3.1.2 as country identifier reference standards is as follows:

- these two standards together provide both the full jurisdictional and geographic capability for country identification;
- these standards enable country identification for person based and service based health care use;
- these two standards complement one another for purposes of location identification and contact identification and for jurisdictional and geographical identification;
- these standards allow for flexibility in use and implementation through the availability of alpha-2, alpha-3 and numeric-3 codes and enables stability and neutrality through the availability of the numeric-3 coding;
- geographical aggregation of health data from multiple countries can be accommodated outside the above standards, without affecting these standards or their use;
- these standards have in place politically neutral maintenance agencies;
- a process for updates between editions of the primary reference standard ISO 3166 (all parts) is in place through web based formal newsletters issued by the maintenance agency.

<https://standards.iteh.ai/catalog/standards/sist/c042aab5-5530-4317-ba85-4ff7e75d0c5b/iso-ts-17120-2004>

3.3 Liaison

Ongoing liaison between ISO/TC 215 and the ISO 3166 Maintenance Agency (ISO 3166/MA) with respect to the use of ISO 17120 and ISO 3166 (all parts) in health care as technical reference standards shall continue, in order to:

- improve communications for the health care sectors within all countries respecting the use and maintenance of this Technical Specification;
- address with ISO 3166/MA issues of code reassignment, user assigned code registration and timely revisions.

Annex A (informative)

Technical introduction

A.1 Overview

Countries are both political and geographical entities. Reference to countries may be for their jurisdictional relevance (political, administrative) or their physical location (geographical). The context of use of a country identifier standard is useful in determining the applicability, adoption, or agreement for a standard. Whether that use is for identification, contact or analysis purposes, different country identifier standards may be applicable.

Two methods are being undertaken to address the context for a country identifier mechanism in health care. The first, scenarios or “story boards”, provide the overall context and need for this standard and relate the country identifier work to real and understandable healthcare situations. The second, use cases, provide very specific tests and a formal validation capability for a standard. The following short use case and scenario supports the use of this Technical Specification in health informatics standards development.

It is as important to understand what is excluded in this Technical Specification as it is to know what is included. This Standard is not relevant in health care for very specific patient locations or in any way for patient identifiers. It is not meant to serve as an exact geographical locator such as given in a geographical positioning system. While acknowledging that country boundaries are inherently geographic, it is clear that this country identifier technical reference standard does not apply to the location or identity of any specific patient, beyond the identification of the country or sub-division of that patient.

[https://standards.iteh.ai/catalog/standards/sist/c042aab5-5530-4317-ba85-](https://standards.iteh.ai/catalog/standards/sist/c042aab5-5530-4317-ba85-4ff7e75d0c5b/iso-ts-17120-2004)

[4ff7e75d0c5b/iso-ts-17120-2004](https://standards.iteh.ai/catalog/standards/sist/c042aab5-5530-4317-ba85-4ff7e75d0c5b/iso-ts-17120-2004)

A.2 An elderly man becomes ill while on vacation

A.2.1 Scenario

Mr. Jones was a resident of Australia and was on vacation in Canada. Mr. Jones became extremely ill with a communicable disease and collapsed from exhaustion. He was taken by ambulance to the emergency department of a public hospital in Toronto. After being assessed by the emergency room physician, Mr. Jones was hospitalized. As a hospital inpatient, Mr. Jones continued to receive health services until his health improved and he could be discharged. These events trigger a number of activities that require information about “countries”.

First, Mr. Jones' country of residence is of interest to the hospital administration because it will need to determine how the health service will be paid. Because Mr. Jones is a non-resident of Canada, the services he receives are not eligible for payment under Canada's national health program. The hospital therefore needs to know the country location of Mr. Jones' insurer, either public or private, so that a reciprocal billing arrangement can be initiated.

Second, Mr. Jones was diagnosed as having “beaver fever”, a waterborne communicable disease known as Giardiasis that has to be reported to the national health authorities in Canada and to the World Health Organization as part of their international disease tracking activities. This information is stored in electronic databases for easy retrieval. As part of the disease investigation process, the public health nurse in Toronto learned that Mr. Jones had in the previous 2 weeks been on a camping trip in the Rocky Mountains in both the north-western United States of America and in British Columbia, Canada. He had regularly consumed fresh mountain water in these locations. While there was no conclusive location for the source of the disease, the public health nurse recorded that it was most likely either Montana, Idaho or Washington in the United States of America, or British Columbia or Alberta in Canada. The country location and their subdivisions is important for disease tracking purposes.

Finally, researchers at the Banff Centre for Environmental Health Research in Alberta, Canada have been studying the prevalence of Giardiasis for the past decade. These researchers routinely access international epidemiological data to study the prevalence of Giardiasis, the suspected source location of the disease, as well as the type of people, such as tourists, who contract the illness. Epidemiologists are therefore interested in country locations and their subdivisions with respect to the suspected source of the disease, as well as the residence of the index case and, in some instances, contacts.

A.2.2 Use case

The use case information supporting evaluation and validation of country identifiers in health care provides multiple, formalized points of view and ensures the Technical Specification fits health care use. Current points of view (with the accompanying scenario relationship) for use cases and for consideration with the above scenario include:

- Patient (Mr. Jones)
- Public health or physician provider (Emergency physician, public health nurse)
- Payer/Funder of health services (Australian health services insurer)
- Researcher (WHO, Banff Centre for Environmental Health Research)
- Government (Province of Ontario, Canada)
- Manufacturer/System vendor (Hospital emergency computer system vendor, product supplier)
- Investigator/Insurer (Private insurance company)

In all of these points of view there are two primary units of observation — that of the person, and that of the service or case — in understanding the use of country identifiers. For instance, in identifying or funding a person or sharing service information for that person, a political (jurisdictional) context for country identifiers is most relevant. For contacting or tracing an individual, either a political or a geographic context may be useful in correctly identifying location. For aggregating, analyzing, locating or meeting other broad social or culturally-related health care analysis needs, again both political and geographical contexts for country identifiers are relevant.

The three primary uses referred to in the scenario above, and the associated various points of view, provide the context of the standard mechanism for country identifiers. A full, high-level use case from the service provider and service recipient point of view is provided below.

USE CASE DESCRIPTION ISO/TC 215/WG 1/CI-UC01

Service provider for service recipient from out of country

Created by: Jane Curry/Don Newsham

Created on: 1999-10-25

Version: 0.1

Status: Version Complete

Identification:

- Brief Description: This use case will identify the service recipient (patient) presenting for a health service to a service provider (physician) resulting in a diagnosis of a communicable disease. To a certain extent this use case is a high level use case with multiple sub-cases included.
- Primary Actor(s): Service Provider/Service Recipient.

Pre-conditions:

- The service recipient has contracted Giardiasis (beaver fever).

Triggers:

- Out-of-country individual presents for health service [triggers a jurisdictional country identification requirement (political) for the health funding rules that apply to this person to receive and pay for health services].
- A communicable disease is diagnosed [triggers a physical country identification requirement (geographical) for the disease tracing and notification of a communicable disease].

Main success scenario:

Assumptions

- Disease is a reportable/notifiable disease

Flow

- 1) Patient presents at Emergency Department to the physician;
- 2) Patient notifies physician that he is from out of country;
- 3) Special payment/funding requirement is identified and country of residence is identified (ISO 3166-1 and possibly ISO 3166-2 if subdivision is recorded);
- 4) Doctor diagnoses patient with a communicable disease;
- 5) Doctor must notify national tracking agency of patient and country of origin (ISO 3166-1);
- 6) Doctor must notify international disease tracking agency and possibly country of residence disease tracking agency (if by email, basis is ISO 3166-1, if by phone basis is ITU E164.1);
- 7) Patient pays or arranges to pay from the insurer of his country the cost of the health service;
- 8) Follow up clinical information is phoned to patient upon return to country of residence, requiring country code to contact patient (ITU E164.1).