Technical Specification

ISO/TS 22220

Health informatics — Identification of persons, healthcare providers and healthcare organizations

Informatique de santé — Identification des personnes, des fournisseurs de soins de santé et des organisations de soins de santé

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

This third edition of ISO/TS 22220 cancels and replaces ISO/TS 22220:2011 and ISO/TS 27527:2010, which have been technically revised.

The main changes are as follows:

— further elaboration on the sex and gender data elements related to person identification;

— the term "subject of care" has been replaced with the term "person" since it now applies to individual healthcare providers and patients;

— all data elements have been updated;

— three use cases were added, including conformance for each use case.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The healthcare system relies heavily on the ability to uniquely and accurately identify a person, an individual healthcare provider and healthcare organizations when they attend for care. The healthcare system and the digital health technologies that support the healthcare require accuracy and consistency in the collection of, the sharing and the exchange data concerning individual person, an individual healthcare provider and healthcare organization.

More effective communication between healthcare providers is key to securing closer co-operation, improving the handling of persons in terms of quality and continuity of care and prevention, and promoting health system efficiency.

Reliable identification of the individual has always been a critical part of the healthcare process. The ability of computerized systems to support and enhance the manual process of identification is vital, as is the ability of these systems to identify individuals, individual healthcare providers and healthcare organizations when communicating patient information electronically. High quality identification is necessary to ensure that healthcare professionals have access to patient information, facilitating closer co-ordination and continuity of care and improving service in terms of prevention and follow-up. Modern service delivery networks result in greater flows of persons and services across national, functional, jurisdictional and professional boundaries. However, high quality identification can be very complex in a more integrated healthcare environment.

Within healthcare service delivery environments, the process of positively identifying persons entails matching data supplied manually, electronically or through hard documentation by those persons against data the healthcare provider holds about them. This process occurs both manually, increasingly with computer support, and electronically, where systems have to communicate information about individuals securely and accurately. Impediments to high quality identification include variable data quality (see the ISO/TS 16599 series), inadequately considered manual identification processes, differing data capture requirements and mechanisms, and varying data matching methods.

This document identifies the data elements and relevant structure and content of the data used to identify individuals, individual healthcare providers and healthcare organizations in a healthcare setting. In addition, it provides support to the identification of individuals, individual healthcare providers and healthcare organizations in a consistent manner between systems that will support the natural changes in usage and application of the various names used by people over time.

This document addresses the business requirements of identification as well as the data needed to improve the confidence of healthcare providers and person identification. It defines the data used to identify persons and the business processes associated with this activity, whether computerized or manual. It is intended to be used both to support the processes of the identification of persons by individuals and computerized identification in automated matching systems.

Within a healthcare service delivery context, the process of positively identifying individuals entails matching data supplied by those individuals against data the service provider holds about them. The ability to positively identify individuals and to locate their relevant details is critical to the provision of speedy, safe, high quality, comprehensive and efficient healthcare. The benefits of positive identification include:

— less time wasted and inconvenience generated in hunting for or re-gathering information about the individual, which translates to more efficient healthcare;

— more complete and accurate information on which to base potentially life-critical clinical decisions;

— fewer duplicate entries for an individual, leading to less duplication of testing and prescribing;

— safer treatment from having clinical details for the correct individual;

— more complete and accurate information on which to base potential data use and disclosure decisions.

The delivery of healthcare is undergoing a paradigm change, brought about by changing consumer expectations, technological advances, economic pressures, socio-demographic change and changes in the patterns of health and ill health in communities.

These new service directions will necessitate a much greater flow of information on persons and services across functional, jurisdictional, administrative and professional boundaries. In a more integrated healthcare environment, positive identification is no less critical but is much more complex. Population mobility and multiple points of access to the healthcare system led to the accumulation of subject-related data in a variety of fragmented, unrelated repositories. Positive person identification is recognized around the world as a critical success factor for healthcare reform.

Some examples of the many barriers to successfully identifying individuals in healthcare settings are:

— variable data quality and changes in key identifying information over time.

— the patient's capacity to provide information. In a healthcare environment, it is important that the identification system can cope with the fact that people's memories and capacity to communicate vary according to their mental and physical capacity and to their willingness to seek and receive care. Information is often provided by third parties (family and friends) who might know the person by a preferred name rather than by the person's formal name.

— differing data capture requirements and mechanisms and varying data matching methods. This document provides a framework for improving the confidence of healthcare providers and persons alike so that the data being associated with any given individual, and upon which clinical decisions are made, are appropriately associated, and suited to the flexibility of the healthcare setting.

— the need to respect the wishes of the person. If the system is unable to accommodate the wishes of an individual who prefers that others not know their full name, or who prefers to be known by a preferred name or nickname, this patient might not seek healthcare. System planning is required to consider how to communicate the formal name when required to other systems and also to capture and share the preferred name so as not to cause unnecessary stress to the person or confuse family and friends during healthcare encounters.

Where permitted by law, data matching can be undertaken in a variety of contexts and settings, including for administrative purposes. However, the specific focus of this document is the positive identification of persons, individual healthcare providers and healthcare organizations for healthcare service delivery purposes. It is recognized that implementations in different systems and national settings might vary according to local needs.

It is recognized that this document can support national client registry projects in healthcare but does not represent a registry content, structural or operational specification.

The positive and unique identification of persons within and between healthcare organizations is a critical event in health service delivery, with direct implications for the safety and quality of healthcare.

It is important that responsibilities for the quality, capture, storage and use of identifying data for persons, including implementation of this document are clearly and unambiguously assigned within the organization, and documented in relevant policies, procedures and work instructions.

Users of this document can refer to relevant privacy legislation, authentication and authorization specifications and other guidelines so as not to breach personal privacy in their collection, use, storage and disclosure of person information.

Relevant staff can receive training that highlights the nature, importance and health benefits of high-quality procedures for the capture, storage and use of health identifying data and the safety implications of errors and duplications of person and organization information.

Business processes associated with the capture, storage and use of subject identifying data can be designed and continuously improved to ensure that accurate, consistent, and complete data collection, communication and storage practices are used.

There are several data elements defined in this document that are also common terms, such as date of birth. Although the meaning of the data element is evident, all data elements must be defined to include context and usage within the overall information model covering the scope of this document.

The Australian Person and provider identification in healthcare standard[9] and ISO/IEC 11179-3:2023 were leveraged in the development of this document.

Health informatics — Identification of persons, healthcare providers and healthcare organizations

1 Scope

This document indicates the data elements and structure suited to accurately and consistently identify persons (including subjects of care), healthcare providers and healthcare organizations. The data elements names and definitions are provided in Clause 3; the full data element definitional structure is given in Clauses 5, 6 and 7. This document identifies conformance requirements in the following use cases:

— Populate and manage an index or registry. This can include the storage of a person, healthcare provider or organization within an index or registry.

— Record or share information for administrative purposes.

— Record or share information for clinical purposes.

Application of this document will increase the capacity for data access. Authorization of such access is determined by the application of legislation, organizational policies and guidelines, and professional ethics.

It is recognized that specific applications might require additional data to fulfil their purpose, such as value sets or adjustments to conformance requirements. This document provides a generic set of identifying information, which is application-independent. Implementations in different healthcare environments and national settings can require the establishment of data sub-sets, additional guidelines and rules in the use of the data elements.

The following are outside the scope of this document:

— Additional factors to be considered in providing access to distributed person data, including privacy, security, authentication, access and data transfer mechanisms.

— Collection and processing of data for purposes other than the identification of persons and their associated records, even though some of the data elements collected for identification can be used for other purposes such as the determination and delivery of care, the compilation of statistics, contact tracing and reimbursement.

  — This includes clinical content, care processes and financial identifiers not used for person or provider identification.

— Handling of person electronic consent in forms and other use cases, although this can be considered for addition by implementers and dependent on electronic signature policy for medical records.

— Naming conventions, and rules for specifying data element names and data element definitions.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1 General terms

3.1.1
capture
deliberate action, which results in the registration of a *record* (3.1.2) into a record keeping system

3.1.2
record
information created, received and maintained as an asset by an organization or person in the transaction of business and kept as evidence of such activity

Note 1 to entry: Adapted from ISO 15489-1:2016, 3.14.

3.1.3
registration
act of giving a *record* (3.1.2) a unique identity in a record keeping system

3.1.4
storage
function of storing *records* (3.1.2) for future retrieval and use

3.1.5
data element
basic unit of identifiable and definable data

[SOURCE: ISO 2146:2010, 3.4]

3.1.6
logical data type
kind of data that can be included in a field based on foundational notions in computer science and mathematics without implementation details

Note 1 to entry: Physical datatypes generally additionally specify storage requirements or metadata, or both – for instance an integer is a real number without fractional component, whereas a Java 'int' is a representation of an integer that is four bytes long, storing whole numbers from –2 147 483 648 to +2 147 483 647.

3.2 Terms related to person's identifier data elements

3.2.1
person identifier designation
number or code assigned to a person by an organization, establishment, agency or domain in order to uniquely identify that person as a subject of healthcare within that healthcare organization, establishment, agency or domain

3.2.2
person identifier issuer
organization, agency or provider that allocates a *person identifier designation* (3.2.1)

3.2.3
person identifier type
type of the identifier for use within the organization or jurisdiction

3.2.4
person identifier geographic area
geographic scope within which this identifier is used

3.2.5
person identification comment
comments recorded for a person where follow up to distinguish between two or more subjects with the same or similar demographic information may be required

3.3 Terms related to person's name data elements

3.3.1
name title
honorific form of address commencing a name, used when addressing a person by name in person, by phone, mail or other written correspondence, or depending upon cultural situation

3.3.2
name title sequence number
indicator of the order of use for *name titles* (3.3.1)

3.3.3
personal pronoun
nouns or noun-phrases specified by the person to be used when replacing the person's name when referring to the patient in speech, in clinical notes, and in written instructions to caregivers

3.3.4
pronoun start date
date at which a pronoun starts to be used

3.3.5
pronoun end date
date at which a pronoun is not to be used

3.3.6
family name
part of a name a person usually has in common with some other members of their family, as distinguished from the person's *given names* (3.3.8)

3.3.7
family name sequence number
indicator of the order of use for *family names* (3.3.6)

3.3.8
given name
person's identifying name(s) within the family group or by which the person is uniquely socially identified

3.3.9
given name sequence number
indicator of the order of use for *given names* (3.3.8)

3.3.10
name suffix
additional term used to follow a person's name to identify a person usually in relation to others in the person's family, or to acknowledge qualifications, positions held and honours awarded

3.3.11
name suffix sequence number
indicator of the order of use for *name suffix* (3.3.10)

3.3.12
name usage
classification that identifies the use and purpose of the name to enable differentiation between names

3.3.13
name usage start date
date at which the *name usage* (3.3.12) for the name to which the usage is associated starts

3.3.14
name usage end date
date at which the *name usage* (3.3.12) for the name to which the usage is associated ceased

3.3.15
name usage identifier
designation used to represent the individual in a specific organization or situations

EXAMPLE The name associated with a specific healthcare number.

3.3.16
name usage restriction type
indicator of specific conditions or rules to be applied to a particular name

3.3.17
name usage restriction start date
date at which a *name usage restriction type* (3.3.16) starts

3.3.18
name usage restriction end date
date at which a *name usage restriction type* (3.3.16) ends

3.4 Terms related to additional person's demographic data elements

3.4.1
date of birth
date, as exact as possible, when the person is known or estimated to have been born

3.4.2
date of birth accuracy indicator
indication of the accuracy of a *date of birth* (3.4.1)

3.4.3
date of birth follow-up indicator
flag that indicates when the current *date of birth* (3.4.1) requires follow-up to obtain a more accurate date

3.4.4
birth plurality
indicator of multiple births showing the total number of births resulting from a single pregnancy

3.4.5
birth order
sequential order of this person in a multiple birth regardless of live or still birth

3.4.6
country of birth
country in which the person was born

3.4.7
province of birth
state, province or territory in which the person was born

3.4.8
locality of birth
town or equivalent location in which the person was born

3.4.9
mother's original family name
family name (3.3.6) of the person's mother at the time of her birth

3.4.10
date of death
specific date when a person is declared deceased

3.4.11
date of death follow-up indicator
flag that indicates when the date of death requires follow-up

3.4.12
source of death notification
source of information about a person's death

3.4.13
sex at birth
sex of the person documented at birth

3.4.14
recorded sex or gender
documentation of a specific instance of sex or gender information where only one data field for sex and gender is available and where it is found in the local system or historical documentation

3.4.15
gender identity
individual's personal sense of being a man, woman or nonbinary

3.4.16
gender identity start date
date at which a *gender identity* (3.4.15) starts

3.4.17
gender identity end date
date at which a *gender identity* (3.4.15) ends

3.5 Terms related to person's address data elements

3.5.1
address purpose
role or use of the address by the individual or organization

3.5.2
address type
representation of the type of address in order to distinguish the type of physical or virtual address

3.5.3
address type start date
date on which the *address type* (3.5.2) is first applicable to the person

3.5.4
address type end date
date on which the *address type* (3.5.2) is no longer applicable to the person

3.5.5
address status
status of a person's or organization's address

3.5.6
address status start date
date when the *address status* (3.5.5) was first used

3.5.7
address status end date
date when this *address status* (3.5.5) was or is no longer to be used

3.5.8
address unit type
specification of the type of a separately identifiable portion (address unit) within a building or complex, etc. to clearly distinguish it from another

3.5.9
address unit number
identifier to distinguish an address within a building or complex

3.5.10
address site name
full name used to identify the physical building or property as part of its address

3.5.11
address floor number type
descriptor used to classify the type of floor or level of a multi-storey building or complex

3.5.12
address floor number
descriptor used to identify the floor or level of a multi-storey building or complex

3.5.13
address street number
identifier of a house or property that is unique within a street name

3.5.14
address lot number
lot reference allocated to an address in the absence of street numbering

3.5.15
address street name
name that identifies a thoroughfare and differentiates it from others in the same suburb, town or locality

3.5.16
address street type
designation that identifies the type of thoroughfare

3.5.17
address street suffix
term used to qualify street name issued for directional references

3.5.18
postal delivery type
unique designation forming part of the mailing address for the channel of postal service as defined by the post office

3.5.19
postal delivery number
number forming part of the mailing address for the channel of postal service as defined by the post office

3.5.20
address locality
full name of the city, suburb, or town containing the specific address

3.5.21
state or territory or province identifier designation
identifier of the province, state or territory in which a person resides, or an organization exists

3.5.22
postal code
designation for a postal delivery area, aligned with locality, suburb or place for the address as defined by the postal service

3.5.23
country identifier designation
identifier representing the country in which a person resides, or an organization exists

3.5.24
address location descriptor
description of the location of an address relative to another physical site

3.5.25
address line
composite of one or more standard address components that describe a low level of geographical and physical description of a location that, used in conjunction with the other high-level address components, forms a complete geographical or physical address

3.5.26
address geocode datum
reference frame that defines the position of locations on Earth using geodetic coordinates

3.5.27
address geocode latitude
geographic coordinate that specifies the north-south position of a point on the earth's surface relative to the equator

3.5.28
address geocode longitude
geographic coordinate that specifies the east-west position of a point on the earth's surface relative to Greenwich

3.5.29
address geocode altitude
geographic coordinate that specifies the vertical position of a point on the earth's surface relative to the mean sea level

Note 1 to entry: Mean sea level is defined as the average height of seawater relative to a fixed datum established by a statistical average of water heights over a period of time.

3.6 Terms related to person's electronic communication data elements

3.6.1
electronic communication type
unique designation to indicate the communication mechanism for use

3.6.2
electronic communication detail
unique combination of characters used as input to electronic telecommunication equipment for the purpose of contact and correspondence.

3.6.3
electronic contact usage
representation of the manner of use that a person or organization applies to a specific *electronic communication detail* (3.6.2)