Zdravstvena informatika - Smernice za identifikacijo pacientov in njihova uporaba v navzkrižnih povezavah

Health informatics - Guidance on patient identification and cross-referencing of identities

Medizinische Informatik - Leitfaden für die Patientenidentifikation und Kreuzrefernzierung von Identitäten

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Informatique de santé - Guide sur l'identification du patient et le référencement des identités

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Health informatics - Guidance on patient identification and cross-referencing of identities

Informatique de santé - Guide relatif à l'identification des patients et au référencement croisé des identités

Medizinische Informatik - Leitfaden für die Patientenidentifikation und Kreuzreferenzierung von Identitäten

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Foreword

This document (CEN/TR 15872:2014) has been prepared by Technical Committee CEN/TC 251 "Health informatics", the secretariat of which is held by NEN.

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

1   Scope

This Technical Report addresses the issue of multiple identifiers that may refer to the same person. It describes the management of patient identification and cross-referencing of identities and provides some practical guidance for addressing implementation of standards, reports, guidelines, methods, etc. The need to identify a person unambiguously is an important component for the interoperability of health information systems.

Within healthcare there is an essential requirement for good quality information, not least to uniquely identify an individual to ensure that the appropriate and relevant care can be delivered irrespective of geography, time and situation. To ensure that health care providers have access to information about an individual patient, it is vital that the patient can be reliably identified within a Health Care Information System. Currently, a given patient may have several identifiers corresponding to different geographical locations, different health care organisations or various specialities. The allocation of multiple identifiers and related processes increases the risk of identification error within one or more information systems and as a result, might compromise the safety of a patient.

The quality of identification ensures that health care providers have access to patient information, facilitating closer coordination and continuity of care, improving service in terms of prevention and follow-up. Quality will be pursued within the framework of:

— medical care in a hospital information system (HIS): covering all the stages from patient identification to admittance to the health care organization or directly to the care unit or emergency care, through to the issuing of reports by the different health care services (medical and medico-technical services);

— continuity of care;

— patient mobility.

Because electronic heath care records may be updated by several and various healthcare providers over a long period of time, the patient identification needs to be formalized in such a way to ensure that the correct patient's healthcare record is being accessed.

In the regions or the countries where a national unique patient identifier is not used, the patient is identified by using patient identifiers for each healthcare system, wherever the patient is registered. Even within an individual healthcare organization, the patient may be identified by a specific identifier for an individual ward or a medical support unit. To ensure the continuity of care and the sharing of patient information, it is necessary to reliably link together the different patient identities within what we will call a "patient identifier cross-reference domain".

The need to cross-reference identities appears when a healthcare provider wants to access all the healthcare information for one patient and that information is contained in different healthcare systems managed by several healthcare professionals or organisations.

In recent years, many research studies and implementations have taken place to try to resolve this issue. This document provides an overview and proposals for the management of the patient identities and the cross referencing of identities and provides guidance for authorities, organisations, project managers and users.

2   Normative references

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

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ISO/TS 22220:2011, *Health informatics — Identification of subjects of health care*

3 Terms and definitions

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

3.1
alias
assumed name that can be specifically applied to disguise identity, which, in a healthcare situation, might be used to protect a famous person receiving treatment or an individual receiving sensitive treatment in, for example, a drug or alcohol rehabilitation unit or sexual health clinic

[SOURCE: ISO/TS 22220:2011]

3.2
collision
case in which two or more different patients are represented by the same patient identity

EXAMPLE   In the cardiology service, the nurse who is consulting the record of Mr Jean Martin, finds that some data are not consistent between then (for example, in the same day, two effort trainings were done). She suspects a collision of two patients. After checking the patient identification server, she detects two Mr Jean Martin; one is born in January 25th, 1950 and the second on June 25th, 1950.

[SOURCE: IHE-PIX]

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3.3
duplicate
case in which several identities represent the same patient in the same patient identifier domain

3.4
federation cross-referencing index
index that carries the federative identities within a federation cross-referencing domain

3.5
healthcare provider
person or organization who is involved in, or associated with, the delivery of healthcare to a patient, or caring for patient wellbeing

3.6
identifier
sequence of characters which is used by one or more systems to represent a person (a patient) and reference individual information within his care process and which is unique within a Patient Identifier Domain and linked to the traits of the Patient

Note 1 to entry: The identifier is called Subject of Care identifier in ISO/TS 22220.

EXAMPLE   They are many types of identifiers: Person identifier, Patient identifier, Unit record Number.

3.7
linked identities
case in which, for a given patient, several identities (duplicates: see above) were created, which can lead to a clash between them

Note 1 to entry: The identification system will have the capability of keeping track of these duplicate identities. After correction, the duplicate identities are linked and one of the identity becomes the primary and the others become "ghost" identities. When new healthcare information is recorded, they will be attached to the Patient Identity Source.

EXAMPLE   Ms Alice Berthon got married between two stays in hospital. She prefers now to use the name of her husband Mr. Martin. It is possible that within EHRs, she has two records: one with one identifier and the name of Berthon and a second record with another identifier and the name of Martin. This is a duplication and these need to be kept track of and solved. After correction, the duplicate identities are linked and one of the identities (Miss Berthon) becomes the primary and the others becomes "ghost" identities.

3.8
Patient Identifier Domain
domain in which, in the ideal world, the patient has one and only one Patient identifier and a common identification scheme which is used between systems for sharing healthcare information within the domain, and in which the identifier is assigned by the assigned authority

EXAMPLE 1   Hospital St Vincent is a Patient Identifier Domain. The patient of the Hospital St Vincent is identified at the entrance with one and only identifier. All systems in hospital share the same patient identity delivered by one system: the Patient Identity Source.

EXAMPLE 2   The Insurance which delivers an Insurance card with identifier is an Insurance Identifier Domain. The country which delivers a citizen card is a citizen Identifier Domain.

[SOURCE: IHE-PIX]

3.9
Patient Identifier Cross-reference Domain
domain which consists of a set of Patient Identifier Domains, known and managed by a Patient Identifier Cross-reference Manager Actor who is responsible for creating, maintaining and providing lists of identifiers that are aliases of one another across different Patient Identifier Domains

Note 1 to entry: The Patient Identifier Cross-reference Domain embodies the following assumptions about agreement within the group of individual Identifier Domains:

• they have agreed to a set of policies that describe how patient identities will be cross-referenced across participating domains;

• they have agreed to a set of processes for administering these policies;

• they have agreed to an administration authority for managing these processes and policies.

Two **models** of implementation of a Patient Identifier cross-reference domain can be managed:

• Federation Patient Identifier cross-reference domain, where one member of the identities in the Cross Referencing Information System is always the federative identity (the Master),

• Correlation Patient Identifier cross-reference domain, where the Cross Reference manager actor manages a list of identities defined in the cross referenced identification domains where all patient identities are in the same level.

EXAMPLE 1   In England and in the Netherlands, at the country/regional level, the NHS number or the BSN are the federative identifier. When two healthcare providers want to share medical information for a patient, they refer to the NHS number in UK or BSN in the Netherlands.

EXAMPLE 2   In a country where the national identifier does not exist, a patient who has several medical records split in several healthcare provider systems, the mechanism to link all the records is based on a correlation model where the list of all patient identifiers linked to the patient identifier domains is available.

3.10
Patient Identity
representation of a real person within a **Patient Identifier domain (called also Patient identifier Assigning Authority)**, which, by extension, could also represent a fictional person for some purposes (testing or training)

Note 1 to entry: The patient identity is composed of:

— an identifier, ID;

— a set of traits, {T}.

EXAMPLE   The person named M. Jean Martin is represented in the hospital St Vincent in Paris by the record (sample): "23654, Martin, M., Jean, Male,19500125".

3.11
Patient Identity versions
patient's traits that are changed because of events during the life and that then need to be modified or corrected

Note 1 to entry: The author of the modification will have the permission to update the record and the modification will be done in a controlled procedure and audited.

EXAMPLE 1   Ms Alice Berthon was represented in hospital St Vincent as "23478, Berthon, Miss, Alice, Female, 19800325, v1".

She got married and now she preferred to be named Ms Alice Martin. The representation will be changed on "23478, Martin, Ms, Alice, Female, 19800325, v2"

EXAMPLE 2   Mr. Richard Louis Kerren was an outpatient in hospital St Vincent and he was represented as "43542, Kerrene, Male., Richard, Louis, Male,19540613,v1".

When he comes back to hospital for a second visit, the administrative staff searches his name and they do not find the record. After a careful research, they discover that the name was not correctly registered. They update his name: the new representation is "43542, Kerren, Male, Richard, Louis, Male,19540613,v1".

3.12
traits
characteristics defined in a **Patient Identifier domain**, and "commonly" used in the real world, as a part of a patient identity

Note 1 to entry: These could be criteria in the query of patient identity in the Patient. The Patient Identity Source Actor is retrieved when the criteria of the query meet the traits in the Patient Identity Source Actor.

Note 2 to entry: See *Service Functional Model for the Entity Identification Service*.

4   Patient identity management

4.1 General

In this section, we will provide the definition of the concepts used by the management process of the patient identity. It is following by a section on the cross-referencing management which completes the description by the management of patient identity between several healthcare providers within a cross reference domain.

4.2 Concepts

4.2.1   Patient Identity

Within a Patient Identifier Domain, the patient is a real person represented by an identifier and a set of identity characteristics called traits:
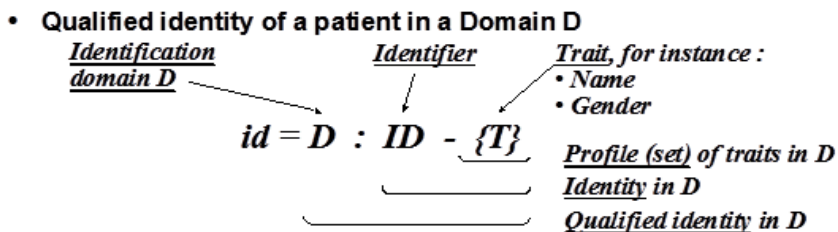
Figure 1 — Definition of the qualified identity

In the case where the identification of the domain is not explicitly given, the identity is called unqualified identity.

The traits are characteristics as name or subject of care name (ISO/TS 22220), first name, sex, date of birth, address, etc. However some traits are more constant than the others. The constant traits form the strict traits.

Other traits can be categorized:

— extended traits: traits describing the patient such as Insurance number, mobile phone number, etc;

— specific traits such as food habit, medical specificities, etc;

— technical traits such as status of the patient identity, validity, indicators, etc.

4.2.2 Patient identifier domain

The Patient Identifier Domain is the context in which the identities described above are managed. It may be all or part of a single organization, or a group of organizations. The Patient Identifier Domain is associated with a Patient Identifier Assigning Authority, an organization, agency or provider that allocates patient identifier designation.

In the identification process (see Figure 2), the arrow shows that the actor A accesses the identity id = D: ID - {T} and uses it to point the patient information (e.g. the patient record) in order to consult and update it.
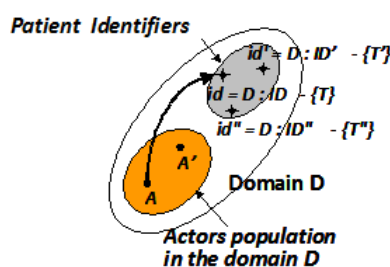

Figure 2 — Representation of the Patient Identity Source

Additionally, a Patient Identifier Domain has the following properties:

— a set of policies that describe how identities will be defined and managed according to the specific requirements of the domain;

— an administration authority for administering identity related policies within the domain;
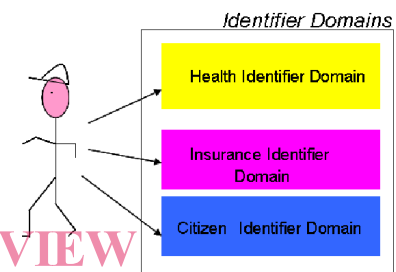
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— a single system, known as a patient identity source system, that assigns a unique identifier to each instance of a patient-related object as well as maintaining a collection of identity traits;

— ideally, one and only one identifier is assigned to a single patient within a given Patient Identifier Domain, though a single Patient Identity Source; generally because of errors or safety (when there is a doubt on the identity and to prevent a wrong assignment with an existing patient identity) during the process, it may assign multiple identifiers to the same patient;

— a Patient Identifier Domain Identifier is unique within a Patient Identifier Cross-reference Domain.

Other systems in the Patient Identifier Domain rely upon the identifiers assigned by the patient identity source system of the domain to which they belong. (From IHE-PIX.)

4.2.3   Examples of patient identifier domain

The nature of the Patient Identifier Domain can be various depending of the regulation of the country:

— Health domain with a clear separation with the insurance domain:

the patient identifier could be national or local;

— Insurance domain;

— Citizen domain: in this case, a passport or national ID card:

could be used in healthcare to identify the patient.

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Figure 3 — Identifier domains linked to one person

When a patient travels from country to country and when he has a contact with healthcare providers, the process of identification is different. This problem is identified and addressed in this document.

4.3 Identity management process

4.3.1   General

In this section, the processes of identification are shown and illustrated by a care provision use case in hospital.

The term "Identity management process" is preferred to the term "identification process". The Identification process is in fact a part or is included in the identity management process as the sub process of the creation or update of the patient identity.

4.3.2   Care provision use case

The interest of this use case is that many of principal actions of the identity process management are inventoried as shown below. The scenario assumes that all systems involved in it are in the same Patient Identifier Domain.

This scenario "Caring in In-Patient setting" is split into two different sub-scenarios:

— caring in ward unit;
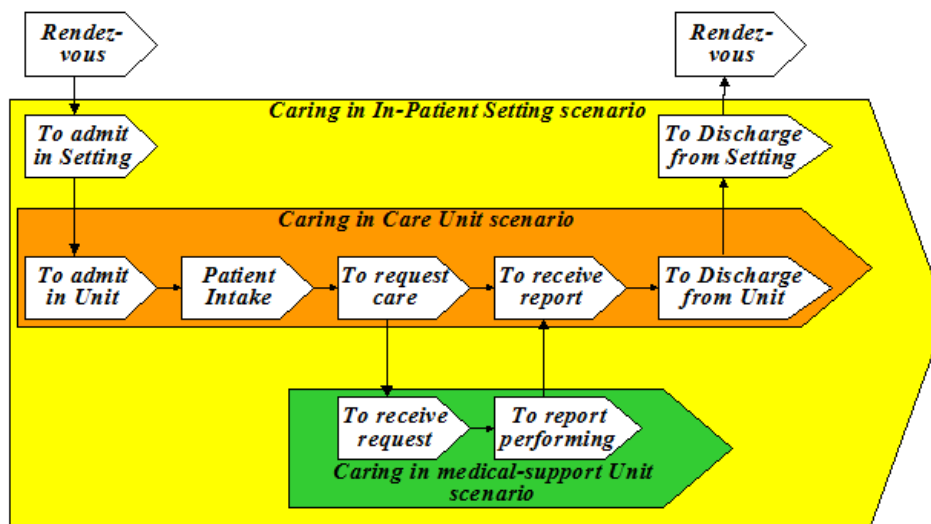
— caring in medical-technical unit.

Figure 4 — Care process in hospital

Different actions are performed, related to the episode and to the services provided to the patient:

— *To arrange an appointment for admission*: in many countries, the appointment for admission is made by telephone. At this stage, when the Admissions Clerk or the Consultants Secretary registers the patient identification; Errors can occur (when the Admissions Clerk or the Consultants Secretary has not understood the name or does not spell the name correctly and the patient information is erroneous or not complete).

— *To admit in the hospital:* when the patient is admitted and to reduce errors, the clerk shall ask for a patient document like insurance card or citizen card at the entrance or any other document, or checking process depending of the rules in the country. The patient will be registered with the more complete information. When the patient is not able to produce any document, the patient information are not reliable and the clerk will registered the identity as temporary identity. In the emergency case, when the patient is unconscious, the registration of patient information is difficult. A temporary name is given to the patient.

— *Admission to the ward:* when the patient goes directly in the ward, the situation can be the same as in admissions but that the patient registration will be done by the Medical Secretary and/or the Nurse. This is treated as a Clinical Admission and not administrative admission. The patient identity is treated as temporary as professional staff does not always control Patient Registration. In the case of a VIP or a patient being admitted for sensitive treatment (e.g.de-intoxication cure) a procedure for pseudonymization or anonymization will be applied (this procedure and the usage are not described in this document). During the care, an alias (or pseudonym) is used. When the patient has an appointment in a radiology department for example, he shall have with him all the information needed to identify himself (for example a wristband with his alias and identifier, document).

— *Discharge from the ward:* Discharge from ward and/or hospital may require relevant information to be collated and sent to another professional / organization. This may require an identity in a different domain. This includes the identity in the insurance domain for billing purposes.

— *Discharge from the hospital*: When patients are being discharged in insurance-based healthcare regimes, the Admissions Clerk or the Consultant's Secretary prepares the invoice, the real patient identity is used. In the case where information about the patient identity is not available, the invoice may be delayed.