
**Health informatics — Provider
identification**

Informatique de santé — Identification du fournisseur

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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.

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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 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.

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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order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn.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again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.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 27527 was prepared by Technical Committee ISO/TC 215, *Health informatics*.

Introduction

The ability to positively identify providers and locate their relevant details is an important support to the provision of speedy, safe, high quality, comprehensive and efficient health care.

This Technical Specification is the result of health industry needs for a common, best practice approach to the way data are used, captured, stored and managed for the purpose of identifying providers. The objective is to provide the health industry with a Technical Specification for health care provider identification for clinical and administrative data management purposes (data structure and specification) which promotes uniformly good practice in identifying individual providers and providers as organizations and recording identifying data. This will assist significantly in ensuring that records relating to each provider will be associated with that individual or organization and no other.

Without such a document, the unique identification of providers will be jeopardized and there is a risk that different parties may develop inconsistent methods.

This Technical Specification has important uses in common with ISO/TS 22220. For example, when patient health information is shared between various providers for purposes of clinical management, it is advisable that ISO/TS 22220 be used to ensure the unique identification of the patient associated with a particular provider and organization.

In this initial publication, the scope of the Technical Specification has been limited to provider identification and though it identifies the relationships required between providers, provider organizations, sites of services and the services themselves, these are not discussed in detail.

This Technical Specification does not supersede any other International Standard or Technical Specification but rather acts as a consolidation of best practice principles and guidelines for collection and storage of provider identification data.

The term “informative” has been used in this Technical Specification to define the application of the annexes applied to it. An informative annex is only for information and guidance. Safe and efficient patient care requires that all organizations implementing shared access to electronic health records ensure that providers of services are correctly and unambiguously identified, even if the records with which they are associated come from sources outside conventional jurisdictional or organizational boundaries. This is critically important to countries, provinces and/or states with significant cross-border flow of patients. This identification is further complicated when one entity is certified by more than one professional organization or discipline, or works in more than one organizational context. The provision of directories or lists of providers and their service locations for consumer information and to support electronic communication between providers is beyond the scope of this Technical Specification.

The ability to positively identify providers (both face-to-face and electronically) and to locate their relevant details, is an important support to the provision of speedy, safe, high quality, comprehensive and efficient health care.

Unambiguous identification of providers (individuals or organizations) is necessary for a wide range of purposes, including:

- a) registration of providers;
- b) requesting and/or reporting of orders, tests and results (e.g. pathology, diagnostic imaging);
- c) other communications and referrals between providers regarding ongoing care of patients (e.g. a referral from a general practitioner to a specialist, a hospital discharge plan);
- d) reporting on health services provision to statutory authorities (e.g. reporting of hospital patient administration systems data to state/territory government health agencies);

- e) payments to providers; and
- f) directories or lists of providers and their service locations for consumer information.

Benefits of positive identification include:

- the ability to verify information about individual providers with other data to identify or confirm their capabilities and qualifications (e.g. their speciality, registration with accredited bodies);
- the ability to confidently communicate with other providers for ongoing client care;
- the ability to compile reliable information about services provided by individual providers to individual clients;
- efficient and appropriate payments of fees, rebates, etc., to providers;
- reduction of the time wasted and inconvenience generated in searching for and/or re-gathering information;
- provision of a source of reliable information to access, authorization and security systems and enhances provider and consumer confidence in electronic health records;
- improvement of care quality by supporting professional practice reviews, research on care delivery patterns and outcomes, etc.;
- auditing who has added, changed or accessed electronic records for quality, access and privacy audits;
- secondary use of provider data for purposes such as manpower planning and resource allocation.

Standards for the communication of identifying information are beyond the scope of this Technical Specification, and are specified within standards of the Health Level 7 (HL7) organization.

The development and use of provider identification in health care supports collection and maintenance of information, identifying the qualifications and accreditation of providers as well as electronic signature information. This Technical Specification defines qualification data requirements but not those required for electronic signatures as these are defined elsewhere.

The effective and efficient identification of providers translates to more efficient and high quality care.

The delivery of health care services is undergoing 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 changes include:

- a) a shift from institution-centred care to client-centred care, together with greater empowerment of consumers;
- b) greater emphasis on continuity of services in supporting quality and safety, health promotion and maintenance;
- c) more integrated services, in which organizational and administrative barriers are invisible to clients;
- d) migration from paper-based to electronic media for transactions including orders, tests and results, sharing of patient health information between various providers, and payments to providers.

These changes underline the need for more careful attention to the provision of unambiguous identification of providers across all disciplines and settings, especially where multiple records or information systems are involved.

This Technical Specification provides a framework for improving confidence in the data being associated with any given provider, and upon which clinical communication and data aggregation are based, are appropriate and accurate.

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Health informatics — Provider identification

1 Scope

This Technical Specification provides a framework for improving the positive identification of providers. Identification of “providers” encompasses individuals and organizations. This Technical Specification includes data elements needed for identification of individual providers (i.e. individuals) and data elements needed for the identification of organization providers (i.e. organizations). “Identification” in this Technical Specification refers both to the process of being able to identify individuals and organizations, and the data elements required to support that identification manually and from a computer processing perspective.

This Technical Specification can be applied to all providers of services, individuals and organizations. It details both data and processes for collection and application of identifying information for providers. It defines demographic and other identifying data elements suited to capture and use for the identification of providers in health care settings and provides guidance on their application.

This Technical Specification provides:

- definitions of data elements to support the identification of individual providers and organizational providers for purposes such as electronic health record authentication and authorization, communications, role definitions, delegation of authority, and the management of certification of individuals where more than one discipline is concerned; <https://standards.iteh.ai/catalog/standards/sist/85cbcfcc-a541-4755-93aa-140007a71503-2010>
- guidance on the development, population, governance and ongoing management of provider identifiers from multiple potential sources. This includes identification of processes to support national, multinational and provincial/state or local level identification. Unique identifier structures may differ for different purposes, or with different originating organizations. For this reason, a generic approach to the structure of these identifiers is given in this Technical Specification to support multiple unique identifiers and the ability to link these to the relevant provider.
- Annex A provides information to support the process of identification and implementation of provider identification in health care information systems.

This Technical Specification is primarily concerned with provider identification data for clinical and administrative purposes. This Technical Specification is intended for use by health and health-related establishments that create, use or maintain records on providers. Establishments are intended to use this Technical Specification, where appropriate, for collecting data when registering providers.

This Technical Specification does not include the process for development of unique identifiers. Standards for the development of identifiers are provided in ISO/TS 22220.

Data required to meet identification purposes is highly dependent upon the place and purpose of identification. This Technical Specification identifies a range of data that support the identification of an individual or organization used in different health care environments.

EXAMPLE Some systems use a phone number to confirm that a call is coming from a bona fide location, specifically when confirming or requesting a fax. The phone number in this case is used as an additional item of identification.

This Technical Specification does not attempt to identify all the use cases for which the items included are relevant; however, the data elements are provided to allow their consistent representation where they are found appropriate to support identification activities of the organization or jurisdiction.

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/IEC 19785-1, *Information technology — Common Biometric Exchange Formats Framework — Part 1: Data element specification*

ISO/TS 22220:2009, *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

business entity

recognized formal business entity, such as a corporation or company

NOTE This entity holds details of the formal “owner” entity of the organization.

3.2

capture

deliberate action that results in the registration of a record in a record-keeping system

[ISO/TS 22220:2009, definition 3.1]

3.3

individual provider

〈health care〉 person who provides or is a potential provider of a health care service

NOTE An individual provider is an individual person and is not considered to be a group of providers. Not all health care providers are recognized by professional bodies. It is for this reason that the term health care professional has not been used to describe them. All health care professionals are providers, but not all providers are health care professionals.

3.4

information system

organized set of people, procedures and equipment that enable, for decision making with stated objectives, the collection and storage of those data that describe an actual situation and its evolution, their processing into information and the transmission of this information

[<http://www.metaglossary.com/meanings/501967/>]

3.5

organization

〈health care〉 group or business entity involved in the direct or indirect provision of health care services to an individual or to a population

NOTE 1 Groups or subdivisions of an organization, such as departments, can also be considered as organizations where there is a need to identify them.

NOTE 2 Effectively, a health care organization relies on the activity performed by health care professionals, employed, contracting, or with temporary informal though functional relationships between them: within health care organizations, the final effectors are health care professionals. A health care team is a kind of health care organization.

NOTE 3 A free-standing self employed solo practising health care professional is considered as the only member of his/her own health care organization.

NOTE 4 Adapted from EN 13606-5.

3.6**provider**

⟨health care⟩ person or organization who is involved in or associated with the delivery of health care to a subject of care, or caring for the well-being of a subject of care

NOTE A provider in this context includes not only health care providers, but also those directly involved in the provision of services to patients.

3.7**provider identifier****health care provider identifier****HCPI**

⟨health care⟩ unique number or code issued for the purpose of uniquely identifying a health care provider

3.8**records**

recorded information, in any form, including data in computer systems, created or received and maintained by an organization or person in the transaction of business or the conduct of affairs and kept as evidence of such activity

[ISO 22220:2009, definition 3.5]

3.9**registration**

act of giving a record a unique identity in a record-keeping system

[ISO 22220:2009, definition 3.6]

3.10**service entity**

services provided by an organization or which an organization is able, or licensed, to provide

3.11**storage**

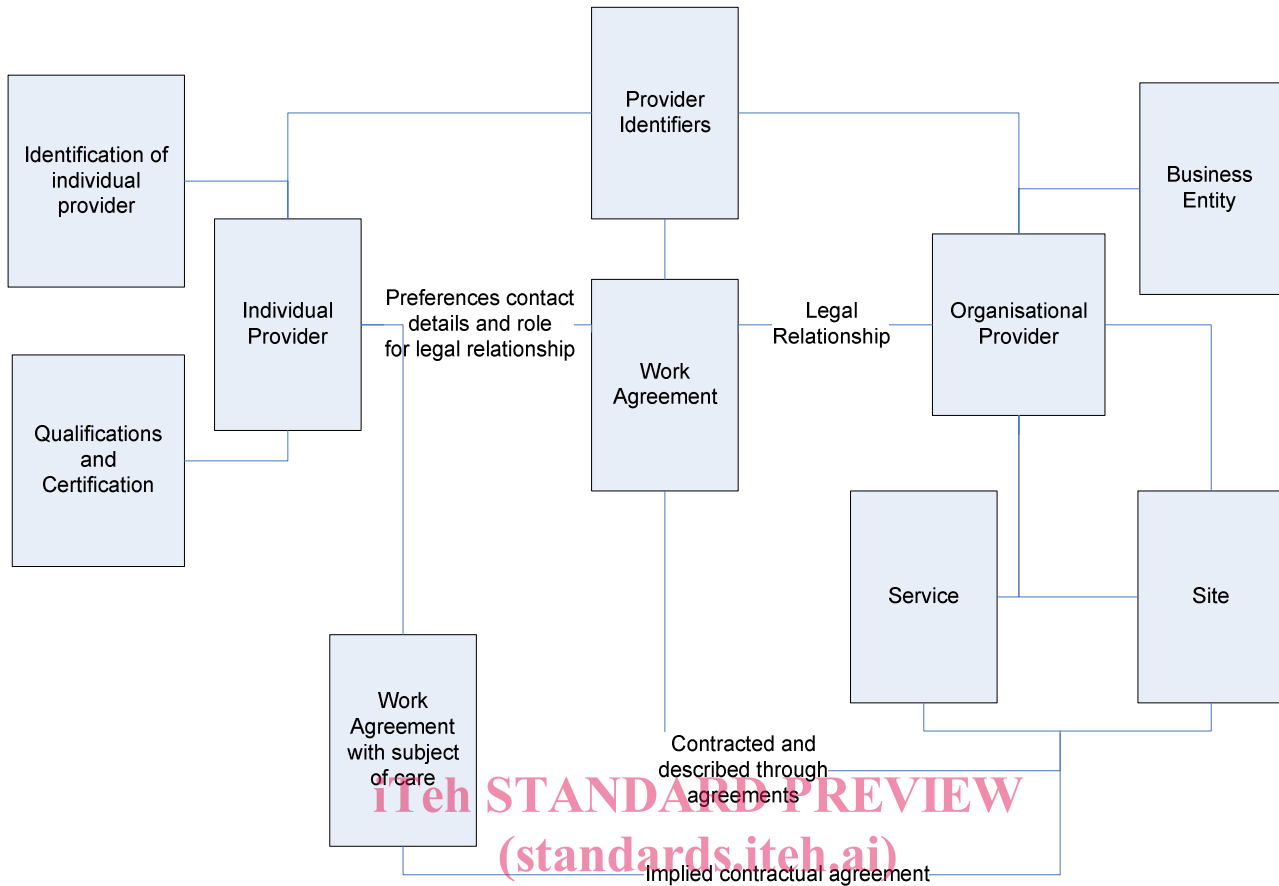
function of storing records for future retrieval and use

[ISO/TS 22220:2009, definition 3.7]

4 Components**4.1 Components introduction**

This Technical Specification includes recommendations concerning the data elements most likely to affect the quality and ability to achieve accurate identification of providers, particularly when identifying individuals face-to-face or when communicating electronically. This Technical Specification also identifies the data elements suited to identification in the broad delivery environment.

The scope of identification in the environment of national registers includes the elements in Figure 1.



ISO/TS 27527:2010
Figure 1 — Typical components of provider registers
<https://standards.iteh.ai/catalog/standards/sist/93aa-0fbe0cc7aa71/iso-ts-27527-2010>

The scope of this work is limited to the areas included in more detail in Figure 2, individual and organizational provider identification, excluding work agreements, site and service relationships.

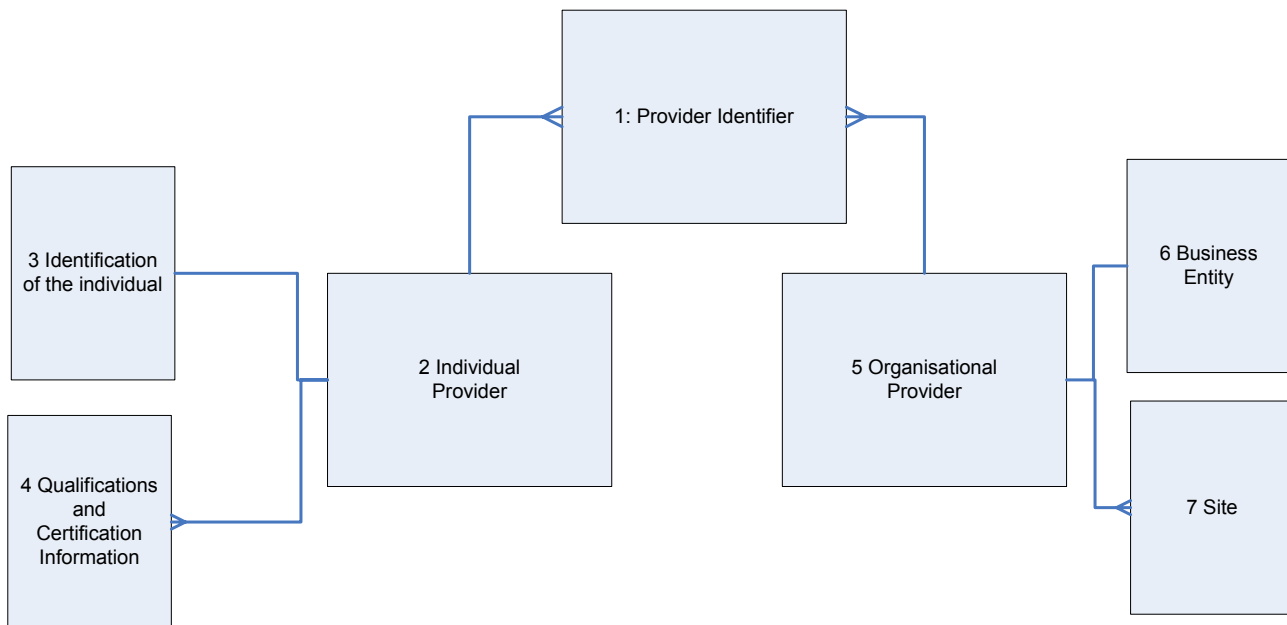


Figure 2 — Individual and organizational provider identification relationships

It is good practice to always use name, sex and date of birth to identify individuals, and name and address to identify organizations when manually confirming the identity of either an individual or an organization. When communicating between systems electronically, the existence of a unique identifier may be used with some of these elements confirming (where required) the unique identity of the individual. This Technical Specification does not endeavour to identify the required elements for transmission between systems, as these can be highly dependent upon local, cultural and policy factors.

Annex A provides guidance on the process, purpose and business rules suited to identification of individuals in health care. This information will assist readers in determining the relevant components of this Technical Specification to their situation, and support best practice in identification processes in health care.

Figure 3 indicates the data elements defined in this Technical Specification and indicates their general relationships to each other using the broad groups (numbered) from Figure 2. The biometric requirements of identification are not included in this Technical Specification, but can be found in detail in ISO/TS 22220.

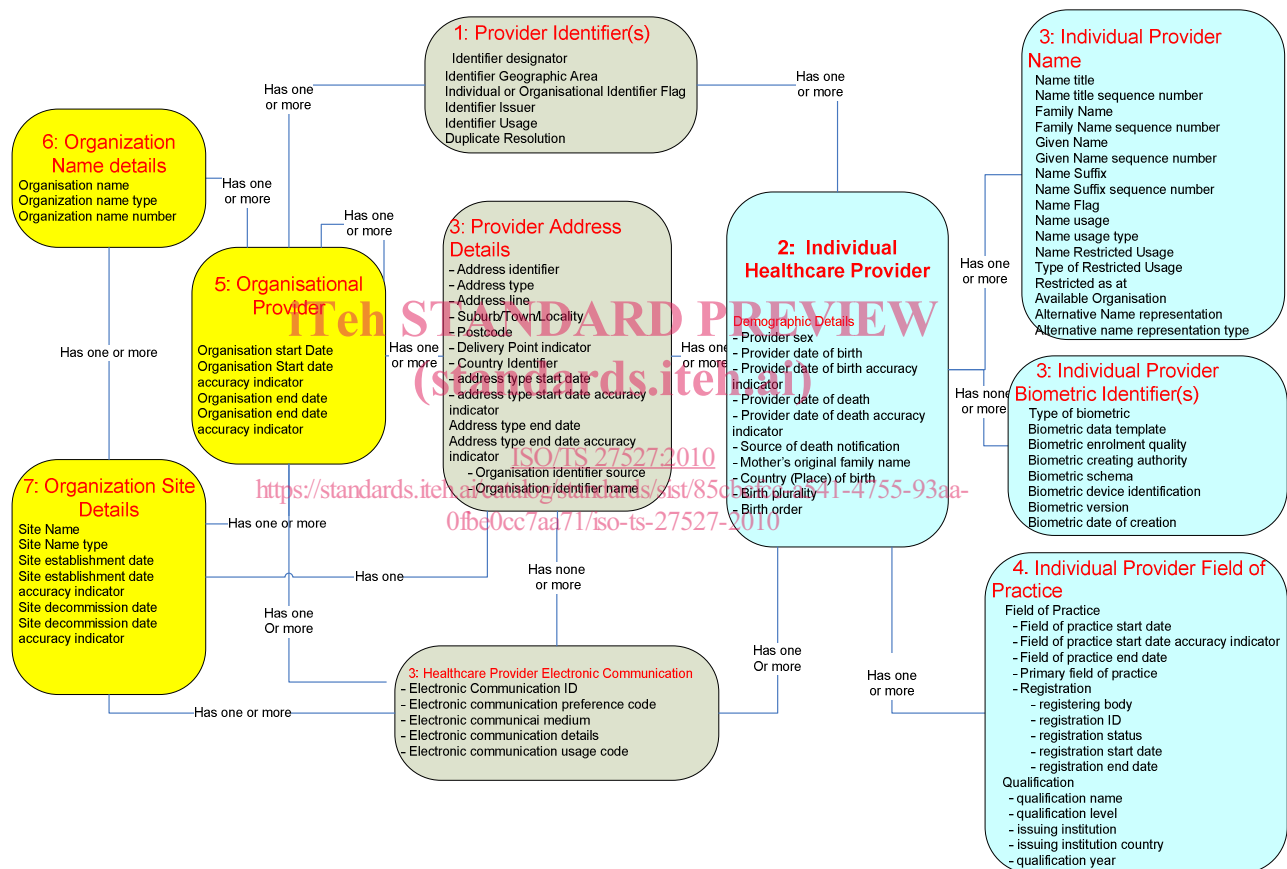


Figure 3 — Detailed elements in provider identification

4.2 Data element structure

4.2.1 General

Each data element has been defined according to a set of metadata components that are based on ISO/IEC 11179-3. The data set to be determined consistent with country requirements and standards. Most components (viz. definition, data type, representational class, data domain, etc.) describe essential features of the structure of a data element. Some components such as collection methods and comments describe additional, non-essential features and may be left blank where appropriate.

The metadata components of each data element are described in sections 4.2.2 to 4.2.10.

4.2.2 Synonym

Alternative name(s) for this data element.

4.2.3 Definition

A statement that expresses the essential nature of the data element and its differentiation from all other data elements.

4.2.4 Source standards

Details of established data definitions or guidelines for data elements that have been cited in this Technical Specification are listed in Clause 2 and the Bibliography.

4.2.5 Data type

It is recognised that different users require different ways of representing concepts shown in this Technical Specification. This Technical Specification centres on functional descriptions and use while other documents, particularly the data types defined by HL7 use technical implementation representations. Where possible the data type is described in a manner consistent with HL7 data types.

- boolean-literal (true/false);
- number (ISO 11404) (only used in this Technical Specification where arithmetic operations are performed);
- character string;
- text or unconstrained text;
- coded text (from an agreed vocabulary or value domain);
- constrained text (where the text is associated with a formal terminology). The difference between the coded and constrained text is the relationship to a formal, structured terminology, as opposed to a code set, or list of values;
- unique identifier;
- dates/times.

Though there are other data types which are not required within this Technical Specification and are not included here.

4.2.6 Data domain

The data domain is the values or codes acceptable for representation of the data element. The data elements contained in this Technical Specification are either free text or coded free text. For each data element that is coded, a code value is provided as well as a description of the code value and in some cases an alternative code (generally an alphabetic representation). The code should be used for communication of this data value, the descriptor is the title of the code value, and the alternative code is provided for collection of the data, where the use of alphabetic code values is preferred at the point of data collection or for screen viewing. For example, the data domain for the data element Sex is shown in Table 1 below:

Table 1 —Example of data domain representation

Code	Descriptor	Alternative code
1	Male	M
2	Female	F
3	Indeterminate	I
9	Not stated/inadequately described	N

It should be noted that the 'flavours of null' as defined in HL7 have not been incorporated into this Technical Specification, rather this Technical Specification uses the structures and definitions required by ISO/IEC 11179. Individual implementations may require consideration of the flavours of null to more clearly define specific components.

4.2.7 Guide for use

Guide for use provides additional guidance to inform the use of the data element.

4.2.8 Verification rules

Verification rules indicate quality control mechanisms that restrict the collection, storage or transferral of non-valid data.

4.2.9 Collection methods

Collection methods are comments and advice concerning the actual capture of data for the particular data elements to achieve uniformly high quality data.

4.2.10 Comments (optional)

Comments are any further information relevant to data element collection or storage.

4.3 Summary of provider identifiers

This section of the Technical Specification identifies and describes the components and attributes and the relationships between them for basic provider identification. This Technical Specification does not describe electronic certificates that identify and authenticate an individual. The use of a public key offers this functionality. ISO 17090 *Health informatics – Public key infrastructure* should be referenced for further information on this functionality and process. For the purposes of this Technical Specification a public key is considered a special case of an identifier (which would not be required to meet the structure suggested here).

Table 2 represents the concepts required to meet the needs of provider identification that are included and described more fully in this Technical Specification.