

Medical informatics — Messages for the exchange of healthcare administrative information

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National foreword

This Draft for Development is the English language version of ENV 12612:1997.

This publication is not to be regarded as a British Standard.

It is being issued in the Draft for Development series of publications and is of a provisional nature due to the limited duration of the European prestandard. It should be applied on this provisional basis, so that information and experience of its practical application may be obtained.

Comments arising from the use of this Draft for Development are requested so that UK experience can be reported to the European organization responsible for its conversion into a European Standard. A review of this publication will be initiated 2 years after its publication by the European organization so that a decision can be taken on its status at the end of its three-year life. The commencement of the review period will be notified by an announcement in *Update Standards*.

According to the replies received by the end of the review period, the responsible BSI Committee will decide whether to support the conversion into a European Standard, to extend the life of the prestandard or to withdraw it. Comments should be sent in writing to the Secretary of BSI Technical Committee IST/35, Medical informatics, at 389 Chiswick High Road, London W4 4AL, giving the document reference and clause number and proposing, where possible, an appropriate revision of the text.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ENV title page, pages 2 to 157 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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Informatique de santé — Messages pour
l'échange d'informations d'ordre administratif
dans le domaine de la santé

Medizinische Informatik — Nachrichten für
den Austausch administrativer Information im
Gesundheitswesen

This European Prestandard (ENV) was approved by CEN on 1997-03-11 as a prospective standard for provisional application. The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into an European Standard (EN).

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 251 “*Medical Informatics*”, the secretariat of which is held by IBN.

The preparation of this European Prestandard was undertaken by Project Team 3-023 of CEN/TC 251 and covered by the European Commission under voucher M021/BC/CEN/93/17.10.1.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

The increased use of data processing and telecommunications capabilities has made possible the interchange of information in machine readable and machine processable formats. As automated interchange of information in healthcare increases, it is essential to provide appropriate information interchange standards.

Computer systems are in use for the storage and processing of information in many healthcare organisations, including the offices of individual healthcare professionals such as doctors and nurses.

Electronic transfer of administrative data for identification and registration reduces the need for repeated manual data entry and the risk of transcription errors. Standards are required to facilitate the identification and registration since these processes are fundamental to the sharing of clinical and administrative information between healthcare professionals.

Implementation of this standard will therefore:

- facilitate the electronic transfer of requests for administrative data needed for the process of identification and registration in healthcare, sent from requesting healthcare parties to the healthcare parties that are able to provide the requesters with the information needed;
- facilitate the electronic transfer of administrative data to requesters and other healthcare parties;
- reduce the need for human intervention in information interchange between applications used by healthcare parties;
- minimise the time and effort required for the introduction of information interchange agreements;
- reduce the development effort required by suppliers to allow communication between a wide range of applications in this field;
- reduce (in consequence of the foregoing) the cost of information interchange between healthcare parties.

When implementing information exchange based upon this European Prestandard data protection and secrecy principles ought to be guaranteed at least at a level conforming with current legislation in force in the different CEN member countries. Security issues are outside the scope of this Prestandard.

The method by which this European Prestandard has been developed is based on the recommendations of the CEN Technical Report “Investigation of Syntaxes for Existing Interchange Formats to be used in Healthcare” (CR 1350:1993).

This document is intended for use by message developers. Its provisions are directly relevant to suppliers of computer systems for use in healthcare organisations such as hospitals, general practices, insurance companies, clinical departments and specialist clinics. Its provisions are also relevant to those planning, specifying, procuring or implementing information systems for use in healthcare organisations such as hospitals, general practices, clinical departments and specialist clinics.

The main normative provisions in this European Prestandard are expressed in clauses 4 and 5 and apply to the General Message Descriptions (GMDs), clause 7.

The symbols used in this European Prestandard have the meaning as defined in normative Annex A for the purposes of this European Prestandard only. Informative Annex B provides additional explanation about the General Message Descriptions and gives a number of example scenarios of message use.

A supplementary document to this pr-ENV, called “Generic EDIFACT message implementation guide”, provides in its first chapters the method and conformance information on how the EDIFACT messages meet the requirements of the General Message Descriptions of the pr-ENV.

This supporting document contains message implementation guidelines for the Implementable Message Specifications (IMSs). They should be considered an essential component of the IMS providing a generic EDIFACT implementation specification for use in Europe.

Specifically these chapters cover:

- A general description of how the mapping from GMDs to EDIFACT is carried out.
- A structure table indicating how the defined IMSs meet the relationships defined in the GMDs.
- Data tables indicating how the defined IMSs support the objects and attributes of the GMDs

The supporting document is not a constituent part of this pr-ENV.

1 Scope

1.1 This European Prestandard specifies general administrative messages for electronic Information exchange between healthcare information systems

1.2 The messages defined in this European Prestandard provide for an identification framework for both administrative and non-administrative purposes

1.3 The messages identified in this European Prestandard pay especial attention to identification of both the individual and records pertaining to them and the registration of the individual on healthcare information systems

1.4 The messages identified in this European Prestandard, whilst containing information relating to responsibility for payment for healthcare delivery, do not cover resource usage and resource notification including billing/financial transactions nor the clinical aspects of health care delivery

1.5 The messages identified in this European Prestandard provide for the possibility to link existing personal data for administrative, medical/clinical, financial and other health care purposes

1.6 The provisions of this European Prestandard have been validated in the domain and for the purposes described above. Messages conforming to this European Prestandard may be considered by some user communities to meet their needs for purposes outside this scope. Use of the messages in these circumstances is not precluded by the scope

1.7 This European Prestandard is not applicable to the electronic interchange of clinical messages, such as the requesting or reporting of results for diagnostics tests

1.8 The messages defined in this European Prestandard provide an identification framework for patients that may be used within other healthcare messages. The use of these messages or parts thereof for such purpose is not precluded by the scope.

2 Normative references

This European Prestandard incorporates by dated or undated reference, provisions from other publications. These normative references are cited in the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments and revisions of any of these publications apply to this European Prestandard only when incorporated in it by amendment and revision. For undated references the latest edition of the publication referred to applies.

CR 1350:1993, *Investigation of syntaxes for existing interchange formats to be used in Healthcare*.

ENV 1068:1993, *Medical Informatics — Healthcare information interchange — Registration of coding schemes*.

ENV 1613:1994, *Messages for exchange of laboratory information*.

ISO 639:1988, *Symbols for languages, geographical areas and authorities*.

ISO 2382:1987, *Information processing — Vocabulary — Part 4: Organisation of data*.

ISO 3166:1988, *Codes for representation of names of countries*.

ISO 4217:1990, *Codes for the representation of currencies and funds*.

ISO 5218:1977, *Information interchange — Representation of human sexes*.

ISO 6523:1984, *Data interchange — Structure for the identification of organisations*.

ISO 8601:1988, *Data elements and interchange formats — Information interchange — Representation of dates and times*.

ISO 8824-1:1993, *Information technology — Open Systems Interconnection — Abstract Syntax Notation One (ASN.1) — Part 1: Specification of basic notation*.

ISO 8859:1987, *Information Processing — Registration of graphics characters subrepertoires — Eight-bit single byte coded graphic character sets — Part 1: Latin No 1*.

ISO 9735:1988, *Electronic data interchange for administration, commerce and transport (EDIFACT) — Application level syntax rules*.

ISO 9798, *Information technology — Security techniques — Entity authentication mechanisms — Part 1: General model*.

3 Definitions

For the purposes of this standard, the following definitions (listed in alphabetical order) apply:

3.1

clinical information

information about a patient, relevant to the health or treatment of that patient, that is recorded by or on behalf of a healthcare professional

NOTE Clinical information about a patient may include information about the patient's environment or about related people or animals where this is relevant.

[ENV 1613]

3.2

code meaning

element within a coded set

EXAMPLE: "Paris Charles-De-Gaulle" which is mapped on to the three-letter abbreviation "CDG" by the coding scheme for three-letter abbreviations of airport names

[ENV 1068]

3.3

code value

result of applying a coding scheme to a code meaning

EXAMPLE: "CDG" as the representation of "Paris Charles-De-Gaulle" in the coding scheme for three-letter representations of airport names.

[ENV 1068]

[ISO 2382:1987], modified

3.4

coding scheme

collection of rules that maps the elements of one set on to the elements of a second set

[ENV 1068]

[ISO 2382:1987], modified

3.5

domain information model

conceptual model describing common concepts and their relationships for communication parties required to facilitate exchange of information between these parties within a specific domain of healthcare

NOTE In this European Prestandard the abbreviation DIM is used.

[ENV 1613]

3.6

general message description

subset of a domain information model prescribing the information content and semantic structure of a message used to meet one or more identified information interchange requirements

NOTE 1 General message descriptions are independent of the syntax used for constructing an actual message. They provide statement of the information interchange requirements in a form that can be implemented using different syntaxes.

NOTE 2 In this European Prestandard the abbreviation GMD is used.

[ENV 1613]

3.7

healthcare administrative information

information about a patient that is requested or required by a healthcare party to enable, finance or manage the provision of healthcare services to that subject

3.8

healthcare coding scheme designator

unique permanent identifier of a healthcare coding scheme registered for use in information interchange under the terms of the European Prestandard ENV 1068

NOTE In this European Prestandard the abbreviation HCD is used.

[ENV 1068]

3.9

healthcare organisation

organisation responsible for the direct or indirect provision of healthcare services to a patient, or involved in the provision of healthcare related services

NOTE A healthcare organisation may be used as a discrete entity or as a superstructure containing departments and sub-departments.

[ENV 1613]

3.10

healthcare party

organisation or person responsible for the direct or indirect provision of healthcare to an individual, or involved in the provision of healthcare-related services

[ENV 1613]

3.11

healthcare professional

person who is entrusted with the direct or indirect provision of defined healthcare services to a patient or population of patients

EXAMPLE: Primary care physician, dentist, nurse, social worker.

[ENV 1613]

3.12

healthcare service

service provided with the intention of directly or indirectly improving the health of the people, populations or animals to whom it is provided

[ENV 1613]

3.13

hierarchical general message description

a generalised message description presented as a nested hierarchy of related objects rather than as a network of inter-related objects

3.14

identification

the process whereby an entity is proven as being claimed [ISO 9798, ITSEC]

3.15

implementable message specification

specification of a general message description in a particular message syntax

NOTE In this European Prestandard the abbreviation IMS is used.

[ENV 1613]

3.16

interchange format

specification of a message type according to a given message syntax, covering the identification of the message type components, their arrangement, representation and interrelationships

[ENV 1613]

3.17**message profile**

specification derived from an implementable message specification by selecting its optional elements, appropriate to the specific business requirements of the communicating parties

[ENV 1613]

3.18**message syntax**

system of rules and definitions specifying the basic component types of messages, their interrelationships and their arrangement

[ENV 1613]

3.19**message type**

an identified, named and structured set of functionally related information which fulfills a specific business purpose

3.20**organisation**

unique framework of authority within which a person or persons act, or are designated to act towards some purpose

NOTE Groupings or subdivisions of an organisation may also be considered as organisations where there is need to identify them for information interchange.

[ISO 6523-1984]

3.21**patient**

a person who is receiving or is registered to receive healthcare services

3.22**problem domain**

field under consideration in the modelling process

EXAMPLE: Information interchange in clinical chemistry.

[ENV 1613]

3.23 Abbreviations

The following abbreviations are used for the terms defined in this European Prestandard.

DIM	Domain Information Model
GMD	General Message Description
GP	General Practitioner
HCD	Healthcare Coding scheme Designator
H-GMD	Hierarchical General Message Description
ICD	International Code Description
IMS	Implementable Message Specification

4 Requirements

Messages for the exchange of healthcare administrative information within the scope of this standard shall enable electronic interchange of the semantic content defined in the GMDs in clause 7. These are based on the specifications of:

- the communication roles, messages defined in the standard, services supported by each communication role and message sequencing rules (section 5).
- the content of each type of message and relationships within it as shown in the general message description (GMD). Each GMD is a subset of the domain information model (DIM), specifying each item of information that may be used in the GMD and its support status (mandatory, optional, or depending on presence of other components). Hierarchical GMDs specify the order in which objects occur in a message (section 7).

Implementable message specifications (IMS) shall conform to the GMDs defined in this standard.

5 Communication roles and supported services

5.1 General

This clause defines the communication roles compliant with the specifications of this European Prestandard when exchanging patient administrative information. It establishes the relationships between the communication roles and the General Message Descriptions, as well as the relationships amongst the General Message Descriptions (GMDs). Annex B (informative) provides a detailed explanation of the General Message Descriptions for each message and specifies scenarios based upon which the communication roles, the General Message Descriptions and the supported services are derived.

5.2 Communication roles

5.2.1 For each of the messages defined in this European Prestandard there are two key communication roles: the message originating role and the message receiving role. These roles are assumed by three types of healthcare party, administrative information originators, administrative information destinations and copy destinations. A copy destination is a party who is neither the originator of the patient administrative information nor the destination but who, for any reason, is nominated to receive a copy by the message originator.

5.2.2 A communicating party has a message destination role in relation to any message that they may receive in which they are nominated as a copy destination.

5.2.3 A single healthcare party may have different roles in relation to different types of messages. For example, a consultant in a hospital department may have an administrative information request originating role and an administrative information report destination role.

5.2.4 The four types of communication roles that can use the messages based upon the General Message Descriptions defined within the scope of this European Prestandard are:

- administrative information request originating roles;
- administrative information request receiving roles;
- administrative information report originating roles;
- administrative information report receiving roles.

5.3 Communication roles, services and General Message Descriptions

5.3.1 *Request for a unique identifier of a patient on a registration system.*

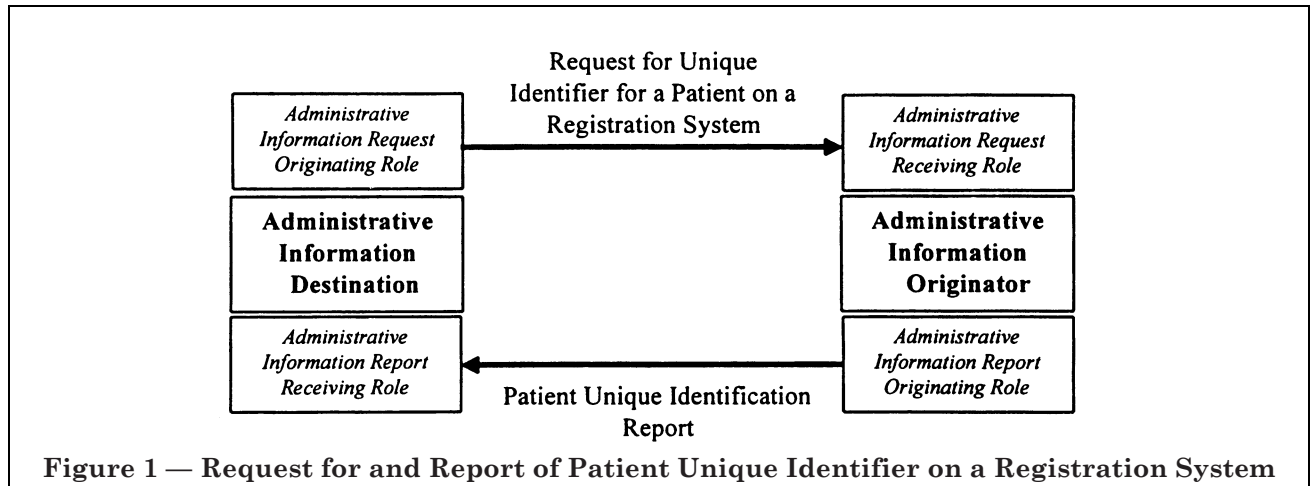
5.3.1.1 The service that shall be supported by a communication party with a *message originating role* for a request for a unique identifier of a patient on a registration system shall be to:

- *issue requests for a unique identifier of a patient on a registration system* instances which comply with the appropriate General Message Description and which convey in a complete and exact way the information as intended by the originator and as to be understood by the receiver.

5.3.1.2 The services that shall be supported by a communication party with a *message receiving role* shall be to:

- *receive requests for a unique identifier for a patient on a registration system* instances which comply with the appropriate General Message Description and which allow the complete and exact understanding of the information as intended by the originator;

— if the receiver is an Administrative Information Destination, to issue a response of the type Patient Unique Identification Report as shown in Figure 1 below.



5.3.2 Request for Administrative Information of an Identified Patient

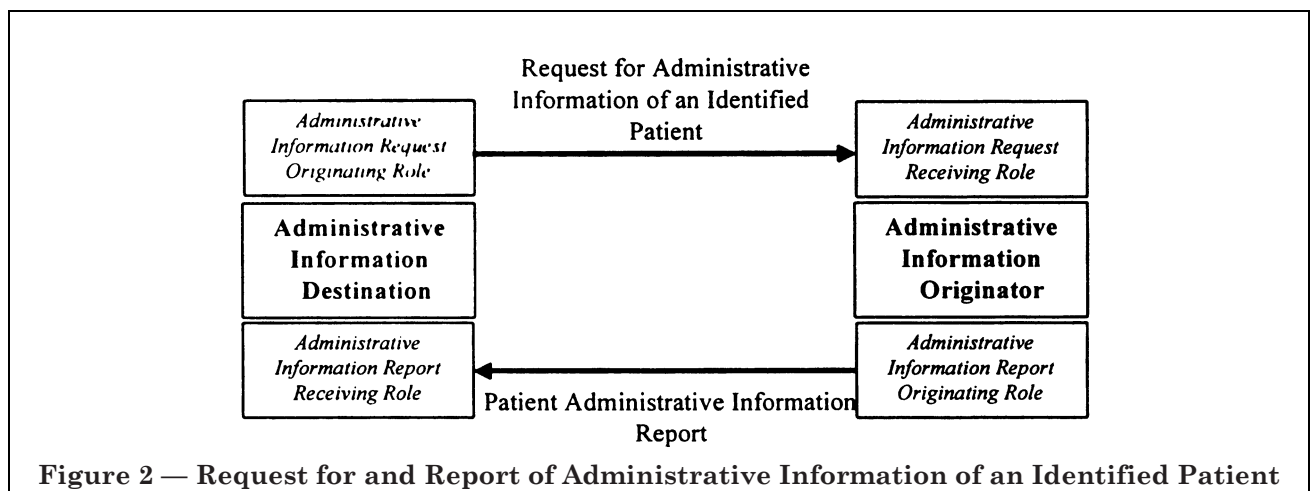
5.3.2.1 The service that shall be supported by a communication party with a *message originating role* for a request for administrative information of an identified patient shall be to:

— issue *requests for administrative information of an identified patient* instances which comply with the appropriate General Message Description and which convey in a complete and exact way the information as intended by the originator and as to be understood by the receiver.

5.3.2.2 The service that shall be supported by a communication party with a *message receiving role* shall be to:

— receive *requests for administrative information of an identified patient* instances which comply with the appropriate General Message Description and which allow the complete and exact understanding of the information as intended by the requester;

— if the receiver is an Administrative Information Provider, to issue a response of the type Patient Administrative Information Report as shown in Figure 2 below.



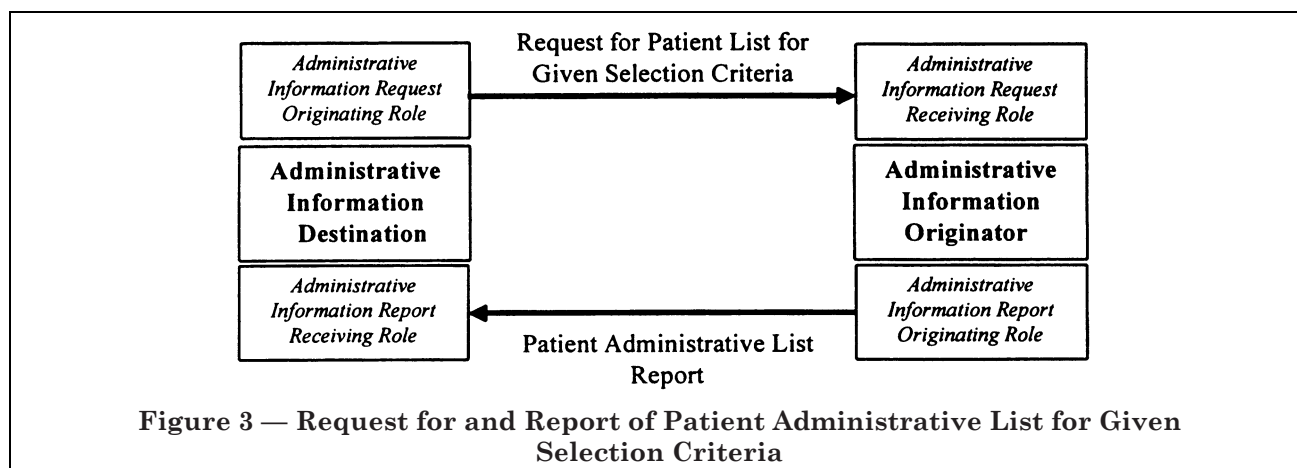
5.3.3 Request for Patient List for Given Selection Criteria

5.3.3.1 The service that shall be supported by a communication party with a *message originating role* for a request for a patient list for given selection criteria shall be to:

- issue *requests for patient list for given selection criteria* instances which comply with the appropriate General Message Description and which convey in a complete and exact way the information as intended by the originator and as to be understood by the receiver.

5.3.3.2 The service that shall be supported by a communication party with a *message receiving role* shall be to:

- receive *requests for patient list for given selection criteria* instances which comply with the appropriate General Message Description and which allow the complete and exact understanding of the information as intended by the requester;
- if the receiver is an Administrative Information Provider, to issue a response of the type Patient Administrative List Report as shown in Figure 3 below.



5.3.4 Message to Add or Modify Patient Administrative Information

5.3.4.1 The services that shall be supported by a communication party with a *message originating role* for a message to add or modify patient administrative information shall be to issue:

- message to add patient registration record;
- message to modify patient registration record;
- message to add patient payment record;
- message to modify patient payment record;
- message to add patient related event record;
- message to modify patient related event record;
- message to link/unlink patient registration record;
- message to link/unlink action events;

instances which comply with the appropriate General Message Description and which convey in a complete and exact way the information as intended by the originator and as to be understood by the receiver;

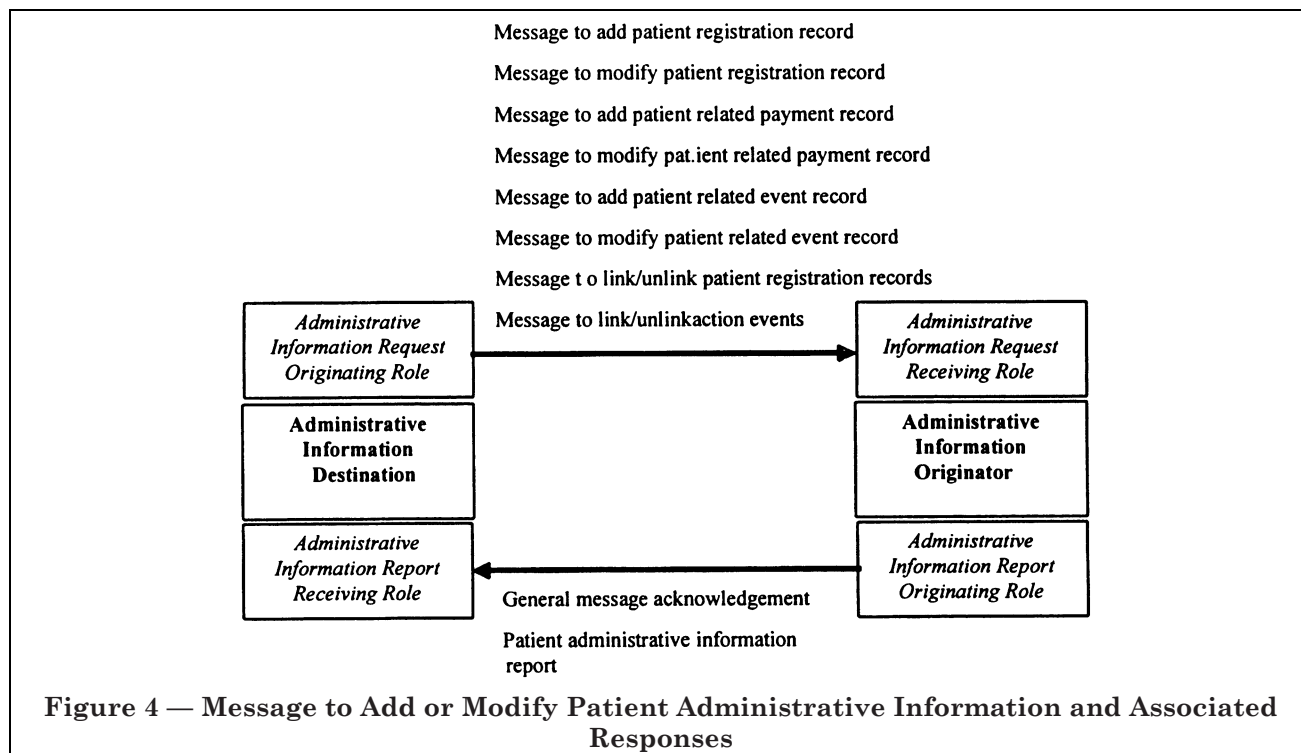
5.3.4.2 The service that shall be supported by a communication party with a *message receiving role* for a message to add or modify patient administrative information shall be to receive:

- message to add patient registration record;
- message to modify patient registration record;
- message to add patient payment record;
- message to modify patient payment record;
- message to add patient related event record;
- message to modify patient related event record;
- message to link/unlink patient registration record;

— message to link/unlink action events;

instances which comply with the appropriate General Message Description and which allow the complete and exact understanding of the information as intended by the requester;

— if the receiver is an Administrative Information Provider, to issue a response that corresponds to one of the options shown in Figure 4 below.



NOTE: (informative)

Modification messages

A modification message may exhibit one or more of the following scenarios:

- A modification message may wish to convey the addition of a new instance of an object (e.g. an additional patient related party, the deletion of an existing instance of an object (e.g. the patient related person present on the system has died), or the modification of attributes of the object. Within this Prestandard a convention has been used whereby the user must indicate using the attribute “service type of record” that is available in all appropriate objects, the function that is intended for the instance of that object (add, delete, modify).
- Where the two parties to the communication are intended to share (have identical views of) all of the data within the scope of the message (i.e. the communicating systems are close-coupled), this Prestandard allows a single modified image of that data to be sent by the originator to the receiver. For example, if two systems are intended to share identical views of a patient’s name, home address, telephone number, national healthcare number, sex and date of birth, when a modification is made to address, the originator may send a new complete image of this simple registration record.
- Where the two parties to the communication do not necessarily share the same view of the data that may be transmitted (i.e. loose-coupled systems), this Prestandard provides a facility for the sender to supply before and after images.
- A modification message may relate to instances of objects that can occur more than once and which have no recognisable unique identifier. When deleting or modifying such instances, the message originator must send sufficient information to uniquely identify the instance of the object in the receiving application.
- Where the values of the attributes that are to be used to identify an instance of an object are to be modified, a second instance of the object will be required.

- In general, if an attribute of any object which is to be deleted or modified is a repeating attribute or group of attributes, the requester must send before and after images of the value of the attribute in order to allow the receiving system to identify the instance that is to be deleted or modified. (In the case of the deletion, the new value of the list item within the message will be “NULL”).

We have assumed the following conventions when sending and receiving the following messages:

- message to modify patient registration record;
- message to modify patient related event record;
- message to modify patient related payment record

- 1) When the modification involves the addition of a new instance of an object, a single instance of the object should be sent with the attribute “service type of record” set to the value “add”.
- 2) When the modification involves the deletion of an existing instance of an object, a single instance of the object should be sent with the attribute “service type of record” set to “delete”. This instance must contain sufficient data items so as to uniquely identify the item in the receiving system (e.g. person, organisation, event, item of clinical information, etc.).
- 3) When the modification involves changes to the values of any attributes within an object, the sender should send two instances of the object.

The *first instance* must:

- contain all mandatory data plus other items that are required to uniquely identify the instance in the receiving system. The values provided must be those that the receiving system will recognise;
- for any attributes that are to have new values added, a NULL value indicator;
- for any attributes whose values are to be modified or deleted, the current value as it is understood to be by the sending system.

The *second instance* must:

- contain all mandatory data plus other items that are required to uniquely identify the instance in the receiving system;
- for any attributes whose values are to be deleted, a NULL value indicator.
- for any attributes whose values are to be added or modified, the new value.

NOTE this Prestandard does not specify how the NULL value is to be implemented, and in any implementation there may be a variety of methods depending upon the data type of the attribute.

6 Domain information model

6.1 Introduction

The Domain Information Model (DIM) and the General Message Descriptions (GMDs) were built based on the approach defined by CR 1350 “Investigation of syntaxes for existing interchange formats to be used in Healthcare” and the technique described by P. Coad and E. Yourdon¹⁾. To enhance readability other symbols have been used within the presentation. The models specify subjects, classes and class-&-objects, and relationships between these components. The attribute layer specification is given in clause 7. See normative Annex A for more information on how to read the models and on the symbols used.

6.1.1 Diagrammatic presentation of the DIM

The diagrammatic presentation shows the subjects, classes and class-&-objects about which information may need to be conveyed in administrative information request and report messages. The diagrams show the relationships between these components and these shall be interpreted in accordance with the instructions and key to the symbols used given in normative Annex A.

6.1.2 Textual description of the DIM

The textual description describes each object and details its relationships, attributes and attribute groups. The attributes and attribute groups themselves are described under sub headings within the relevant object description. The data type of each attribute is defined using an abbreviation which shall be interpreted in accordance with the data-type definitions in Table 1.

The attribute layer specification in clause 7 specifies which of the attributes and attribute groups defined in the DIM shall be supported by messages that conform to this European Prestandard.

¹⁾ 1. Peter Coad, Edward Yourdon, Object Oriented Analysis, 2nd edition, 1991, Yourdon Press, Prentice Hall Building, Englewood Cliffs, NJ 07632.

6.1.3 Repetition of DIM components

A requirement for repetition of an object is indicated through the cardinalities of the relationships shown in the diagrammatic representation of the DIM. These relationships are also described under the heading “Relationships” in the textual description of each object.

Repetition of an attribute within an object or attribute group is indicated by the prefix “L-” before the attribute name.

Repetition of an attribute group within an object or within another attribute group is indicated by the prefix “L-” before the attribute group name.

— NOTE There is a difference between a repeated attribute and an attribute with a “list of” data-type described in Table 1 (i.e. LC + S). The use of a “list of” data type means that a list of values may be required to represent a single instance of that attribute. The repetition of an attribute implies that there may be a set of distinct instances of the attribute within an object or attribute group. For example:

— A clinical observation may be expressed using a coding scheme that uses several separate axes to encode a single concept (e.g. topography, aetiology, disease, etc.) and might be further commented by text.

Table 1 — Description of data-types

Data-type	abbreviation	Definition
string	S	A string of characters from the ISO 8859 character sets.
time of calendar date	TOCD	String limited to the representation of the year, month, day, hour, minutes, seconds and local time differential factor.
Boolean	B	A simple type with two distinguished values. Possibilities are true or false (definition according to ISO 8824).
integer	I	A simple type with distinguished values which are the positive and negative whole numbers including zero (definition according to ISO 8824).
real	R	A simple type whose distinguished values are members of the set of real numbers (definition according to ISO 8824).
coded value	C	Compound type consisting of 3 components: • HCD (Healthcare Coding Scheme Designator as in ENV1068) or ICD (International Coding Scheme Designator as in ISO 6523): data type string, mandatory component, • code value: data type string, mandatory component, • code meaning: data type string, optional component.
coded value or string	C/S	Value which may either be represented by a coded value or by a string.
coded value and string	C + S	Value which may be represented by a coded value, or by a string, or by a combination of a coded value and a string. (NOTE If both code value and string are included the string qualifies the code value providing finer granularity).
list of coded values and string	LC + S	Value which may be represented by a list of coded values, by a string, or by a combination of a list of coded values and a string. As for list of coded values or string (type C + S), but is used when not all coding schemes are of the required granularity
coded value without code meaning	V	This data type consists of 2 components: • HCD or ICD: data type string, mandatory component, • code value: data type string, mandatory component. Coding is required.
Attribute group	AG	Compound data type used to group together a set of logically coherent attributes and/or other attribute groups that are used in specific contexts.
Common attribute group	CAG	Compound data type used to group together a set of logically coherent attributes, that are used in a common manner in several different contexts. These are described separately.
	CAG(a)	common attribute group of type <i>address</i> . For a description see 6.4.1
	CAG(la)	common attribute group of type <i>language</i> . For a description see 6.4.2
	CAG(l)	common attribute group of type <i>location</i> . For a description see 6.4.3
	CAG(m)	common attribute group of type <i>monetary details</i> . For a description see 6.4.4
	CAG(n)	common attribute group of type <i>person name details</i> . For a description see 6.4.5
	CAG(t)	common attribute group of type <i>telecommunication</i> . For a description see 6.4.6
	CAG(u)	common attribute group of type <i>user defined data</i> . For a description see 6.4.7

6.2 Domain Information Model Diagrams

6.2.1 Administrative information request and report model

This model (see Figure 5) is the top-level model of the DIM. Its components are:

- copy destination: see 6.3.10;
- payment guarantor: see 6.3.23;
- action event subject: see 6.3.2;
- selection criteria: see 6.3.25;
- administrative information destination: see 6.3.5;
- patient subject: see 6.3.18;
- contract authorisation: see 6.3.9;
- payment conditions: see 6.3.22;
- administrative information originator: see 6.3.6;
- administrative information report: see 6.3.7;
- administrative information request: see 6.3.8;

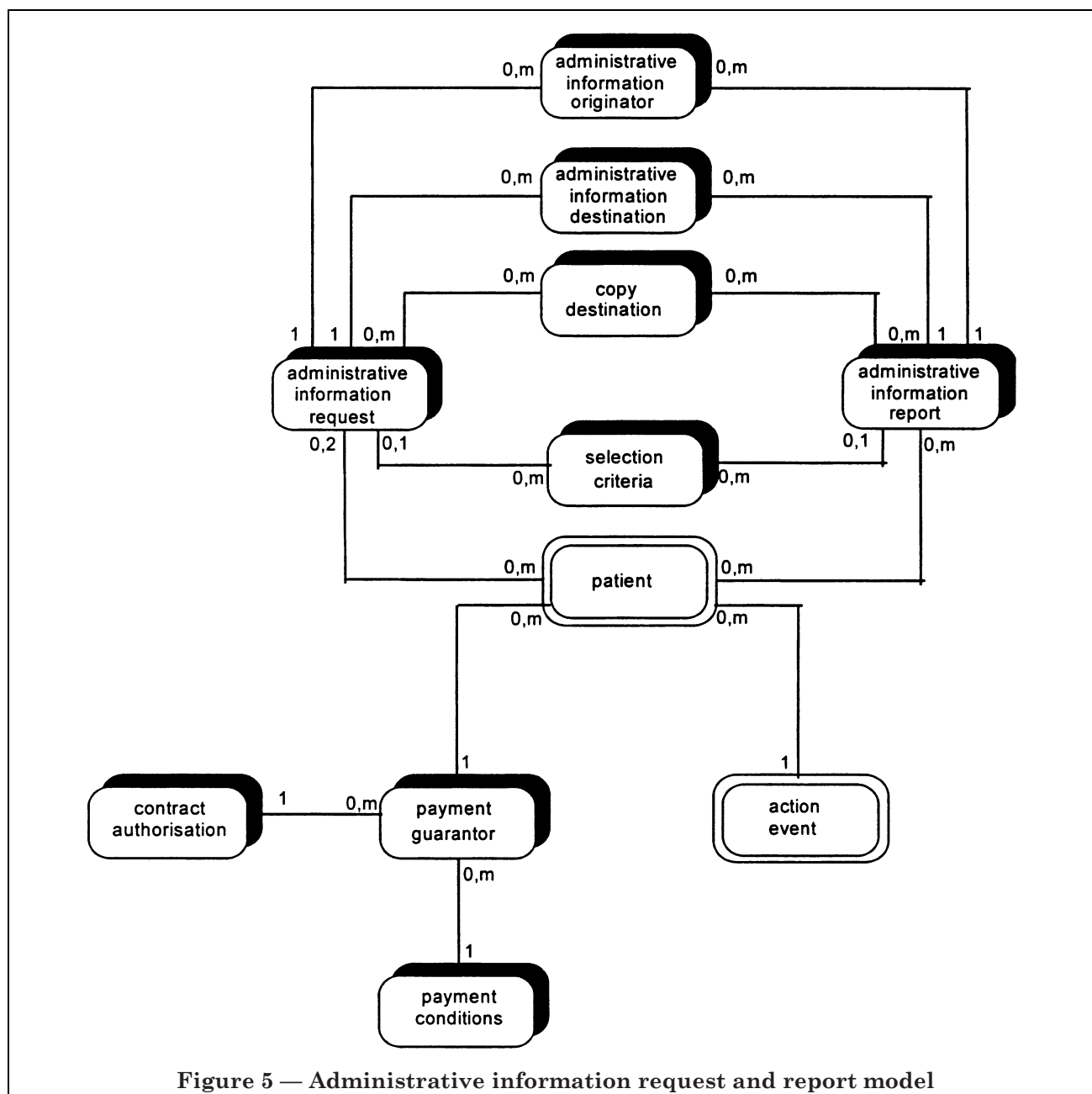


Figure 5 — Administrative information request and report model

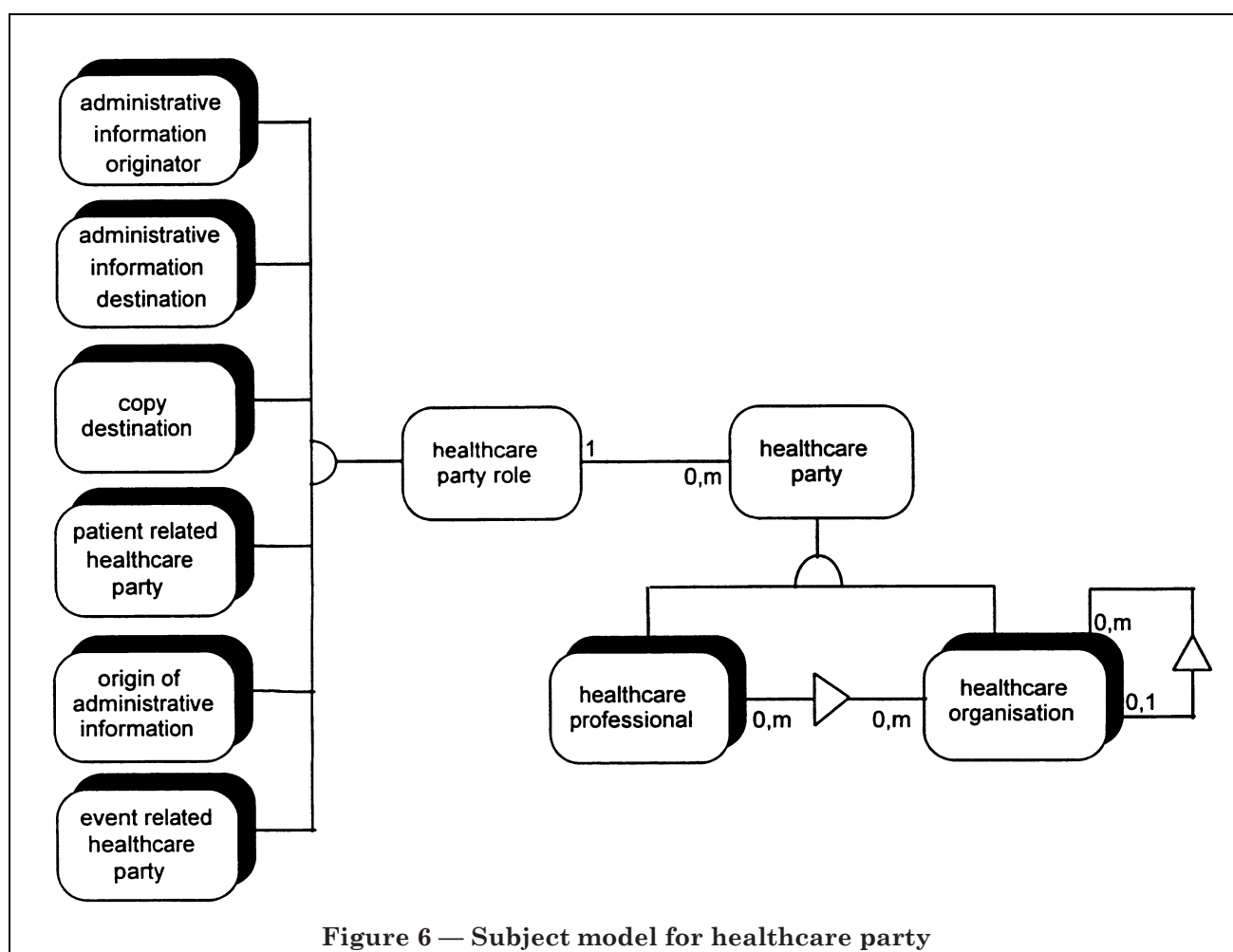
6.2.2 Subject model for healthcare party

This model (see Figure 6) has the following components:

- healthcare organisation: see 6.3.13;
- healthcare party: see 6.3.14;
- healthcare party role: see 6.3.15;
- healthcare professional: see 6.3.16.

The following components are included to express the relationship with the other models:

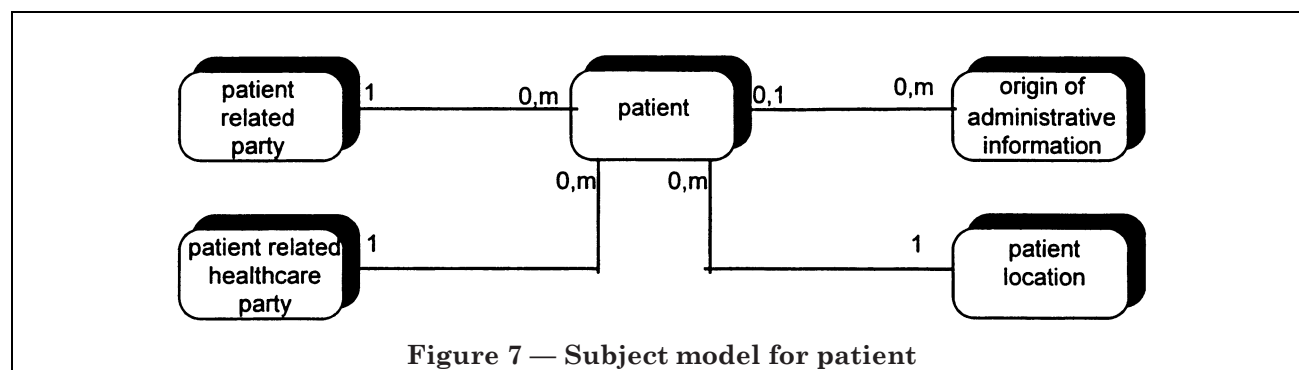
- copy destination: see 6.3.10;
- event related healthcare party: see 6.3.12;
- patient related healthcare party: see 6.3.20;
- administrative information destination: see 6.3.5;
- administrative information originator: see 6.3.6;
- origin of administrative information: see 6.3.17.



6.2.3 Subject model for patient

This model (see Figure 7) has the following components:

- origin of administrative information: see 6.3.17; — patient related party: see 6.3.21;
- patient related healthcare party: see 6.3.20; — patient: see 6.3.18;
- patient location: see 6.3.19.



6.2.4 Subject model for action event

This model (see Figure 8) has the following components:

- action event: see 6.3.2;
- planned action event: see 6.3.24
- event related healthcare party: see 6.3.12;
- administrative clinical information: see 6.3.4.
- event location: see 6.3.11;
- actual action event: see 6.3.3;
- origin of administrative information: see 6.3.17;

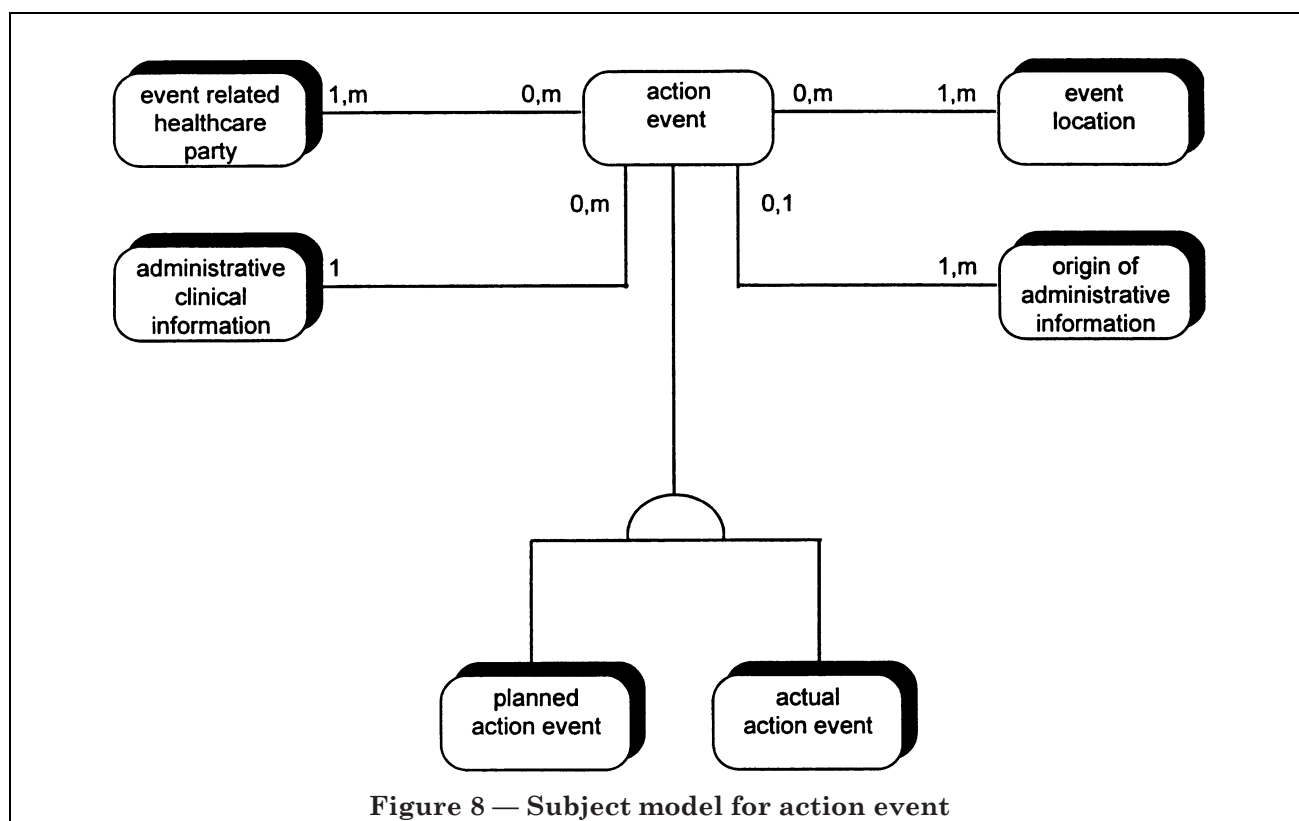


Figure 8 — Subject model for action event

6.3 Textual description of the objects, their relationships and attributes

6.3.1 General

This description is a complement to the Domain Information Model drawings. The objects are listed in alphabetical order, numbered and underlined. Attributes are grouped under the object to which they belong and are underlined. Attribute groups are printed in *italics* and underlined. Indentation is used to indicate the components of an attribute group. Attribute groups common to several objects are detailed in clause 6.4

6.3.2 Action event

Description:

Information about any action, event or service that has been requested, planned or performed and relates to clinical, administrative or procedural aspects of the care process for an individual.

Note:

An action event can be a planned event or an actual event. The object contains attributes grouped within the two attribute groups *actual event* and *planned event* as these are intended to be mutually exclusive within one action event.

Relationships:

- Instance connection:

Each instance of *action event* is associated with one instance of *patient*.

Each instance of *action event* may be associated with any number of instances of *event location*.

Each instance of *action event* may be associated with any number of instances of *event related healthcare party*.

Each instance of *action event* may be associated with zero or one instance of *origin of administrative information*.

Each instance of *action event* may be associated with any number of instances *administrative clinical information*.

— Generalisation:

Each instance of *action event* exists as one of the following specialisations *actual action event* or *planned action event*.

Attributes:

service type of record: Data type: V

— Description: indication of whether the action event is to be added, deleted or whether the characteristics of the action event are to be modified.

— Permitted values: add, delete, modify.

action event identification: Data type: V

— Description: a unique identifier assigned to an action event by the originator of the event record.

L-event group: Data type: AG

— Description: the identification of any combination of action events that are to be linked together for any purpose, clinical, administrative or financial.

— **Note**: an event group is typically defined retrospectively; action events may be assigned to none, one or many event groups.

> event group identification: Data type: V

— Description: identifier used in the grouping of action events.

> event group type: Data type: C/S

— Example(s): in-patient episode, outpatient episode, episode for financial charging.

> start date and time of event group: Data type: TOCD

— Description: date and (optionally) time from which the event group was valid.

> end date and time of event group: Data type: TOCD

— Description: date and (optionally) time at which the event group ceased to be valid.

administrative category of action event: Data type: V

— Description: administrative type of the event that is requested, proposed or carried out.

— Example(s): first out-patient attendance, subsequent out-patient attendance, admission, day care, domiciliary visit, telephone consultation, direct access to procedure/operation, emergency admission.

service description: Data type: C/S

— Description: outline description of the service.

— Example(s): total hip replacement, endoscopy investigation, manipulation of shoulder under anaesthetic.

urgency status of event: Data type: V

— Description: classification of event in terms of urgency.

— Example(s): emergency, elective.

expected duration of action event: Data type: AG

— Description: the length of time that a single action event is expected to last from the start date and time of event (in the case of actual action events) or date and time scheduled (in the case of planned action events).

> numerical value of expected duration: Data type: I

> unit of expected duration: Data type: V

— Example(s): day, week, month, year.

cost of action event: Data type: CAG(m)

— Description: planned or actual cost of action event.

L-comment to action event: Data type: C/S

L-administrative outcome: Data type: C/S

— Description: type of further action, if any, planned as a part of the care of the patient.

— Example(s): self-discharge, discharged on advice of clinician, patient discharged by mental health tribunal, discharged to waiting list, discharged to another healthcare professional, patient died, another appointment given, open appointment, appointment to be given at a later date, suspended, admission arranged, patient admitted.

L-user defined data: Data type: CAG(u)

— **Note**: this common attribute group is detailed in clause 6.4.7

6.3.3 *Actual action event*

Description:

Information about any action, event or service that has been or is currently being performed and relates to clinical, administrative or procedural aspects of the care process for an individual.

Relationships:

— Specialisation:

Each instance of *actual action event* is a specialisation of the more general class *action event*.

Attributes:

start date and time of event: Data type: TOCD

— Description: date and time when the event started.

end date and time of event: Data type: TOCD

— Description: date and time when the event ended.

occurrence outcome: Data type: AG

— **Note**: this attribute group consists of occurrence status and reason for non-occurrence.

> occurrence status: Data type: V

— Description: describes whether the planned patient (or patient related person) contact actually occurred or not.

— Example(s): action event occurred, originator initiated cancellation, cancelled by patient without notification, cancelled by service requester.

> reason for non-occurrence: Data type: S

6.3.4 *Administrative clinical information*

Description:

Information about a patient, relevant to the health or treatment of that patient, that is recorded by or on behalf of a healthcare professional.

Note:

Clinical information about a patient may include information about the patient's environment or about related people.

Purpose:

This object is intended for the exchange of limited clinical information, for administrative purposes only.

Example(s):

Problems (e.g. weight loss or loss of body mass), diagnoses (e.g. thyrotoxicosis, both known and tentative), drugs (e.g. warfarin), operative procedures (e.g. pancreatectomy).

Relationships:

— Instance connection:

Each instance of *administrative clinical information* is associated with one instance of *action event*.

Attributes:

service type of record: Data type: V

- Description: indication of whether clinical information has to be added, deleted or whether its characteristics are to be modified.
- Permitted values: add, delete, modify.

date and time of clinical information: Data type: TOCD

- Description: date and (if appropriate) time of the occurrence of a clinically relevant event.
- Example(s): date and time of: Grand Mal fit, hypoglycaemic coma, total colectomy, blast (explosion) injury, exposure to tuberculosis, drug treatment.

type of clinical information: Data type: C/S

- Example(s): diagnostic, therapeutic or surgical diagnosis/problem, history, examination/sign, symptom, investigation/investigation procedure.

identification of clinical information: Data type: C/S

- Description: unique and unambiguous identification of an item of clinical information.
- **Note:** the identification is of the item of clinical information as might be represented in a coding scheme of diagnoses, procedures, etc.
- Example(s): gastroscopy (represented as string or code).

L-supplement to clinical information: Data type: C/S

- Description: coded or plain text description of supplementary information to given clinical information.

L-comment to clinical information: Data type: C/S

language of clinical information: Data type: V

- Description: language in which clinical information is expressed.
- **Note:** Represented by the abbreviations specified in ISO 639.

6.3.5 Administrative information destination

Description:

Authorised healthcare party acting as the primary destination of an administrative information request or report.

- **Note:** the system of the healthcare party actually receives the message.

Relationships:

- Instance connection:

Each instance of *administrative information destination* may be associated with any number of instances of *administrative information request*.

Each instance of *administrative information destination* may be associated with any number of instances of *administrative information report*.

- Specialisation: Each instance of *administrative information destination* is a specialisation of an instance of the more general class *healthcare party role*.

Attributes:

There are no specific attributes.

6.3.6 *Administrative information originator*

Description:

Authorised healthcare party acting as the originator of an administrative information request or report.

— **Note:** the system of the healthcare party actually originates the message.

Relationships:

— Instance connection:

Each instance of *administrative information originator* may be associated with any number of instances of *administrative information request*.

Each instance of *administrative information originator* may be associated with any number of instances of *administrative information report*.

— Specialisation: Each instance of *administrative information originator* is a specialisation of an instance of the more general class *healthcare party role*.

Attributes:

There are no specific attributes (see healthcare party generalisation).

6.3.7 *Administrative information report*

Description:

Report of the identification, registration or the delivery of care to a patient or group of patients.

Note:

An *administrative information report* may be generated in response to a request for information (a solicited report) or transmitted to one or more systems as the result of some other type of “trigger” event (an unsolicited report). The *administrative information report* is also used for the acknowledgement of receipt of a message.

Relationships:

— Instance connection:

Each instance of *administrative information report* may be associated with any number of instances of *patient*.

Each instance of *administrative information report* is associated with one instance of *administrative information destination*.

Each instance of *administrative information report* is associated with one instance of *administrative information originator*.

Each instance of *administrative information report* may be associated with zero or one instance of *selection criteria*.

Each instance of *administrative information report* may be associated with any number of instances of *copy destination*.

Attributes:

service type of administrative information report: Data type: V

— Description: specifies the function (message type) of the report.

— Permitted values: patient unique identification, patient administrative information, patient administrative list.

number of patients found: Data type: I

— Description: number of patients whose records are included in the report.

identification of administrative information report by administrative information originator: Data type: S

— Description: value assigned by an administrative information originator to an administrative information report.

issue date and time of administrative information report: Data type: TOCD

- Description: date and time the report was completed in the reporting application.

urgency of administrative information report: Data type: V

- Description: indication by the administrative information originator of the urgency with which the receiver should examine and consider the report.
- **Note:** this information may allow a receiving system to draw special attention to its users for some reports.
- Example(s): high priority, medium priority, low priority.

report receipt acknowledgement request: Data type: B

- Description: indication of whether or not the issuer of a report requests acknowledgement of the report receipt by the recipient.

request reference: Data type: AG

- **Note:** this attribute group consists of the attributes request identifier, date and time of request and request originator identifier.

> request identifier: Data type: V

- Description: code-value assigned by a requester to an administrative information request for its identification used as a reference in the administrative information report.

> request originator identifier: Data type: V

- Description: code-value uniquely identifying the originator of the in the administrative information request.

> date and time of request: Data type: TOCD

- Description: date and time at which an *administrative information request* was issued.

L-administrative information originator's comment: Data type: C/S

- Description: (narrative) comment from the administrative information originator that can not be expressed by any other existing attribute.

report language: Data type: V

- Description: language in which the report is written.

L-user defined data: Data type: CAG(u)

- Note: this common attribute group is detailed in clause 6.4.7

6.3.8 Administrative information request

Description:

Request for information on identification, registration or the delivery of care to a patient or group of patients.

Relationships:

- Instance connection:

Each instance of *administrative information request* is associated with one instance of *administrative information destination*.

Each instance of *administrative information request* is associated with one instance of *administrative information originator*.

Each instance of *administrative information request* may be associated with zero, one or two instances of *patient* (two instances of *patient* are permitted only where a request involves modification of attributes contained within the patient object, i.e. before and after image of the patient object, or where two instances of the patient object are being requested to be linked).

Each instance of *administrative information request* may be associated with any number of instances of *copy destination*.

Each instance of *administrative information request* may be associated with zero or one instance of *selection criteria*.

Attributes:

service type of administrative information request: Data type: V

- Description: identifies the function (message type) of the request.
- Permitted values: request for unique identifier of patient on registration system, request for administrative information of an identified patient, request for patient list for given selection criteria, request to add patient registration record, request to modify patient registration record, request to add patient related payment record, request to modify patient related payment record, request to add patient related event record, request to modify patient related event record, request to link patient registration records, request to unlink patient registration records, request to link action events, request to unlink action events.

identification of administrative information request by administrative information originator: Data type: S

- Description: code-value assigned by an administrative information originator to an administrative information request for its identification by the receiving system.

issue date and time of administrative information request: Data type: TOCD

- Description: date and time at which an administrative information request is completed within the requesting system.
- **Note:** this is not the date/time at which the request is dispatched to the Message Handling Service or network service provider.

urgency of administrative information request: Data type: V

- Description: priority of request as indicated by a requester.
- Example(s): urgent, non-urgent.

L-reason for administrative information request: Data type: C + S

- Description: reason why the request was sent.

L-administrative information requester's comments: Data type: C/S

- Description: any comment from an administrative information requester which is not the reason for request of the administrative information.

language of administrative information request: Data type: V

- Description: language used in the administrative information request.

reporting language requested: Data type: V

- Description: language in which the report should be written

L-information requested: Data type: V

- Description: parameter which allows the sender to define the type of data requested.
- Example(s): demographic, payment, events.

L-user defined data: Data type: CAG(u)

- **Note:** this common attribute group is detailed in clause 6.4.7

6.3.9 Contract authorisation

Description:

Details of authorisation pertaining to the provision of healthcare services.

Relationships:

— Instance connection:

Each instance of *contract authorisation* is associated with one instance of *payment guarantor*.

Attributes:

service agreement type: Data type: V

— Description: identification of the service agreement or contract type covering this healthcare service provision.

— Example(s): private insurance, local health authority contract, employee scheme.

service agreement identification: Data type: S

— Description: identification of the service agreement or contract covering this healthcare service provision.

authorisation: Data type: AG

— Description: details of the authorisation to proceed with the provision of specialist services.

> date and time of authorisation: Data type: TOCD

> authorisation number: Data type: S

— Description: identifier issued by the authoriser.

> valid, until date/time: Data type: TOCD

— Description: date and time at which authorisation ceases.

comments to authorisation: Data type: C/S

L-user defined data: Data type: CAG(u)

— **Note:** this common attribute group is detailed in clause 6.4.7

6.3.10 Copy destination

Description:

Information about a party, other than the administrative information originator or administrative information destination, to which a copy of the administrative information request or report is sent.

Relationships:

— Instance connection:

Each instance of *copy destination* may be associated with any number of instances of *administrative information request*.

Each instance of *copy destination* may be associated with any number of instances of *administrative information report*.

— Specialisation:

Each instance of *copy destination* is a specialisation of an instance of the more general class *healthcare party role*.

Attributes:

copy destination type: Data Type V

— Description: an indication whether the copy destination applies to the current message or to a message which may be sent by the recipient of the message.

— Permitted values: request copy, report copy, request and report copy.

6.3.11 *Event location*

Description:

Information about a location that is directly related to the provision of care to a patient, e.g. the location immediately prior to an action event, the location at which the action event takes place or the location immediately subsequent to the action event.

Relationship:

— Instance connection:

Each instance of *event location* may be associated with one or more instances of *action event*.

Attributes:

service type of record: Data type: V

— Description: indication of whether the healthcare location is to be added, deleted or whether the characteristics of the location are to be modified.

— Permitted values: add, delete, modify.

location role: Data type: V

— Example(s): intended care location, care location, location prior to treatment.

start date and time at location: Data type: TOCD

end date and time at location: Data type: TOCD

location: Data type: CAG(l)

— Description: A geographical location or type of location expressed without a formal postal address.

— **Note**: this common attribute group is detailed in 6.4.3

address: Data type: CAG(a)

— **Note**: this common attribute group is detailed in 6.4.1

L-telecommunication: Data type: CAG(t)

— **Note**: this common attribute group is detailed in 6.4.6

healthcare organisation at location: Data type: AG

— Description: the healthcare organisation responsible for provision of services at this healthcare location.

> name of healthcare organisation at location: Data type: S

> type of healthcare organisation: Data type: V

— Example(s): University hospital, private specialist service provider.

> healthcare registration identification: Data type: V

— Description: unique and official identification of a healthcare organisation, in general issued by an authorised organisation such as a governmental or international body.

> partner agreed identification of healthcare organisation: Data type: S

— Description: identification of healthcare organisation agreed upon between communication parties.

> identification of healthcare organisation by administrative information destination: Data type: S

> identification of healthcare organisation by administrative information originator: Data type: S

L-user defined data: Data type: CAG(u)

— **Note**: this common attribute group is detailed in clause 6.4.7

6.3.12 *Event related healthcare party*

Description:

Information about a healthcare party who has a role in the provision of healthcare services related to an action event.

Note:

This concept can refer to a healthcare sub-department, department, organisation or person.

Relationships:

- Instance connection: Each instance of an *event related healthcare party* may be associated with one or more instances of *action event*.
- Specialisation: Each instance of a *event related healthcare party* is a specialisation of the more general class *healthcare party role*.

Attributes:

service type of record: Data type: V

- Description: indication of whether the healthcare party is to be added, deleted or whether the characteristics of the healthcare party are to be modified.
- Permitted values: add, delete, modify.

relationship type of event related healthcare party: Data type: V

- Description: role of a healthcare party in connection with the provision of healthcare services.
- Example(s): clinic at which action event takes place, healthcare professional in charge.

6.3.13 *Healthcare organisation*

Description:

Information about an organisation responsible for the direct or indirect provision of healthcare services, or involved in the provision of healthcare related services.

Note:

A healthcare organisation may be used stand-alone or as a superstructure containing departments and sub-departments.

Relationships:

- Specialisation: Each instance of *healthcare organisation* is a specialisation of an instance of the more general class *healthcare party*.
- Whole/Part:
 - Each instance of *healthcare organisation* may consist of any number of instances of *healthcare professional*.
 - Each instance of *healthcare organisation* may consist of any number of instances of other *healthcare organisation*.
- Part/Whole of: Each instance of *healthcare organisation* may be a part of zero or one other instance of *healthcare organisation*.

Attributes:

name of healthcare organisation: Data type: S

type of healthcare organisation: Data type: V

- Example(s): university hospital, private laboratory, GP Practice.

6.3.14 *Healthcare party*

Description:

Information about an organisation or person responsible for the direct or indirect provision of healthcare services to an individual, or involved in the provision of healthcare related services.

Note:

May be a person, a person within an organisation or an organisation.

Relationships:

- Instance connection: Each instance of *healthcare party* may be associated with any number of instances of *healthcare party role*.
- Generalisation: Each instance of *healthcare party* exists as one of the following specialisations: *healthcare professional* or *healthcare organisation*.

Attributes:

partner-agreed identification of healthcare party: Data type: S

- Description: identification of a healthcare party agreed upon between communication partners.

healthcare registration identification: Data type: V

- Description: unique and official identification of a healthcare party, in general issued by an authorised organisation such as a governmental or international body.

identification of healthcare party by administrative information destination: Data type: S

- Description: identification of a healthcare party given by a requester.

identification of healthcare party by administrative information originator: Data type: S

- Description: identification of a healthcare party given by an originator of information.

L-address: Data type: CAG (a)

- **Note:** this common attribute group is detailed in clause 6.4.1.

L-telecommunication: Data type: CAG (t)

- **Note:** this common attribute group is detailed in clause 6.4.6.

L-language details: Data type: CAG(la)

- **Note:** this common attribute group is detailed in clause 6.4.2.

L-medical specialty of healthcare party: Data type: C/S

- Description: particular subject area or branch of medical science offered by a healthcare party.

6.3.15 *Healthcare party role*

Description:

Information about the role of a healthcare party in relation to a message.

Purpose:

The purpose of this object is to associate a healthcare party with a specific role in the context of the information exchange.

Relationships:

- Instance connection: Each instance of *healthcare party role* is associated with one instance of *healthcare party*.
- Generalisation: Each instance of *healthcare party role* exists as one of the following specialisations: *administrative information destination*, *administrative information originator*, *copy destination*, *origin of administrative information*, *patient related healthcare party*, *event related healthcare party*.

Attributes:

No specific attributes.

6.3.16 *Healthcare professional***Description:**

Information about a person who is entrusted with the direct or indirect provision of defined healthcare services to a patient or population of patients.

Example(s):

Primary care physician, consultant, therapist, dentist, nurse, social worker.

Relationships:

- Specialisation: Each instance of *healthcare professional* is a specialisation of the more general class *healthcare party*.
- Part/Whole of: Each instance of *healthcare professional* may be a part of any number of instances of *healthcare organisation*.

Attributes:

person name details: Data type: CAG (n)

- **Note:** this common attribute group is detailed in clause 6.4.5.

type of healthcare professional: Data type: V

- Example(s): medical doctor, nurse, pharmacist, laboratory worker.

position of healthcare professional: Data type: C/S

- Example(s): head of department, trainee GP, hospital consultant.

L-qualification of healthcare professional: Data type: C/S

- Example(s): MD, M.Sc.

military rank of healthcare professional: Data type: C/S

- Example(s): captain, major

6.3.17 *Origin of administrative information***Description:**

Information about a known source of administrative information.

Relationships:

- Instance connection:
 - Each instance of *origin of administrative information* may be associated with any number of instances of *patient*.
 - Each instance of *origin of administrative information* may be associated with one or more instances of *action event*.
- Specialisation: Each instance of *origin of administrative information* is a specialisation of an instance of the more general class *healthcare party role*.

Attributes:

date and time of administrative information: Data type: TOCD

- Description: date and time at which this information was recorded or received by the originator (the original record keeper).

date and time made available: Data type: TOCD

- Description: date and time at which this information was made available by the originator.

date and time of validity: Data type: AG

— **Note:** this attribute group consists of the attributes start date and time of validity and end date and time of validity.

> start date and time of validity: Data type: TOCD

— Description: start date and time from which the administrative information is valid.

> end date and time of validity: Data type: TOCD

— Description: end date and time until which the administrative information is valid.

reason for updating information: Data type: C/S

— Description: reason for changing or updating the information given by the originator.

6.3.18 *Patient*

Description:

Information about a person who is receiving, or is registered to receive, healthcare services.

Relationships:

— Instance connection:

Each instance of *patient* may be associated with any number of instances of *administrative information request*.

Each instance of *patient* may be associated with any number of instances of *administrative information report*.

Each instance of *patient* may be associated with any number of instances of *patient related healthcare party*.

Each instance of *patient* may be associated with any number of instances of *patient related party*.

Each instance of *patient* may be associated with zero or one instance of *origin of administrative information*.

Each instance of *patient* may be associated with any number of instances of *action event*.

Each instance of *patient* may be associated with any number of instances of *payment guarantor*.

Each instance of *patient* may be associated with any number of instances of *patient location*.

Attributes:

service type of record: Data type: V

— Description: indication of whether the patient is to be added, deleted or whether the characteristics of the patient are to be modified.

— Possible values: unaltered, modified, master, subsidiary, new.

official patient identification: Data type: V

— Description: identification of a patient assigned by a national healthcare authority.

partner-agreed patient identification: Data type: S

— Description: unique code assigned to a patient for identification as agreed upon between the communication partners.

identification of patient by administrative information destination: Data type: S

— Description: identifier assigned by an administrative information destination to a patient.

identification of patient by administrative information originator: Data type: S

— Description: identifier assigned by an administrative information originator to a patient.

L-additional patient identification: Data type: V

— Description: identification of the patient (or of a group to which the patient belongs) derived from applications not related to payment.

— **Note:** used under a mutual agreement between the administrative information destination and administrative information originator or as defined by a general interchange agreement. The coding scheme used allows to identify the type of the additional patient identification.

person name details: Data type: CAG (n)

— **Note:** this common attribute group is detailed in clause 6.4.5.

L-address: Data type: CAG (a)

— **Note:** this common attribute group is detailed in clause 6.4.1.

L-telecommunication: Data type: CAG (t)

— **Note:** this common attribute group is detailed in clause 6.4.6.

L-alternative person name: Data type: AG

Note: this attribute group consists of the attributes person name type and alternative person name value.

> alternative person name type: Data type: V

— Example(s): birth surname, maiden name, alias, mother's maiden name.

> alternative person name: Data type: S

— Example(s): birth surname, maiden name, alias, mother's maiden name.

marital status of patient: Data type: V

— Example(s): single, married, divorced, widowed.

religion of patient: Data type: C/S

L-nationality of patient: Data type: C/S

place of birth: Data type: LC + S

— Example(s): department, town, country, geographical location at sea.

place of death: Data type: LC + S

— Example(s): department, town, country, geographical location at sea.

basis of entitlement to health services: Data type: C

— Example(s): national, E111 holder, resident of other country with reciprocal rights.

patient administrative sex: Data type: V

— Description: gender of the patient as (officially) registered.

— **Note:** Code specified in ISO 5281:1977.

date and time of birth: Data type: TOCD

— **Note:** in case the exact date and time is unknown, year only or year + month or year + month + day are sufficient.

date and time of death: Data type: TOCD

— **Note:** in case the exact date and time is unknown, year only or year + month or year + month + day are sufficient.

L-language details: Data type: CAG(la)

— **Note:** this common attribute group is detailed in 6.4.2.

L-patient occupation: Data type: C/S

L-confidentiality constraint on patient data: Data type: C/S

— Description: information that is of relevance in determining the type of patient information which may be shared by staff in the receiving healthcare organisation and the degree/extent to which it may be shared.

— **Note:** the confidentiality constraints on patient data may also be defined by the patient

- Example(s): in some countries, the patient's consent must be obtained before computer-held data is transmitted to a third party.

L-precautions relevant to service provider: Data type: AG

- Description: information about the patient that is given to the service provider because of its relevance when providing healthcare services to the patient.

> precaution: Data type: C + S

- Example(s): violent patient, detention status, infection risk, health related risk factor, radioactive, immunologically compromised, amputee, blind, deaf, known to be pregnant, breast feeding, last menstrual period.

> associated date of precaution: Data type: TOCD

- Description: the date on or from which the type of precaution applied.
- **Note**: this may include statements that a precautionary factor is absent or not known.
- Example(s): date of the first day of the last menstrual period.

L-user defined data: Data type: CAG(u)

- **Note**: this common attribute group is detailed in clause 6.4.7

6.3.19 Patient location

Description:

Current or planned location that is directly related to a patient not to a specific event, e.g. ward, bed, room, etc.

Relationship:

- Instance connection:
Each instance of a *patient location* is associated with one instance of *patient*.

Attributes:

service type of record: Data type: V

- Description: indication of whether the healthcare location is to be added, deleted or whether the characteristics of the location are to be modified.
- Permitted values: add, delete, modify.

location role: Data type: V

- Example(s): intended care location, care location, source of admission, discharge destination.

start date and time at location: Data type: TOCD

end date and time at location: Data type: TOCD

location: Data type: CAG(l)

- Description: A geographical location or type of location expressed without a formal postal address.
- **Note**: this common attribute group is detailed in 6.4.3

address: Data type: CAG(a)

- **Note**: this common attribute group is detailed in 6.4.1

L-telecommunication: Data type: CAG(t)

- **Note**: this common attribute group is detailed in 6.4.6.

healthcare organisation at location: Data type: AG

- Description: the healthcare organisation responsible for provision of services at this healthcare location.
- > name of healthcare organisation at location: Data type: S

- > type of healthcare organisation: Data type: V
 - Example(s): University hospital, private specialist service provider.
- > healthcare registration identification: Data type: V
 - Description: unique and official identification of a healthcare organisation, in general issued by an authorised organisation such as a governmental or international body.
- > partner agreed identification of healthcare organisation: Data type: S
 - Description: identification of healthcare organisation agreed upon between communication parties.
- > identification of healthcare organisation by administrative information destination: Data type: S
- > identification of healthcare organisation by administrative information originator: Data type: S

6.3.20 *Patient related healthcare party*

Description:

Information about a healthcare party who has a role in the provision of healthcare services to an individual patient.

Note 1:

This covers any role in the healthcare of a patient that is not more specifically covered by the other healthcare party roles defined in the DIM.

Note 2:

This concept can refer to a healthcare sub-department, department, organisation or person.

Relationships:

- Instance connection:
 - Each instance of *patient related healthcare party* is associated with one instance of *patient*.
- Specialisation: Each instance of *patient related healthcare party* is a specialisation of an instance of the more general class *healthcare party role*.

Attributes:

service type of record: Data type: V

- Description: indication of whether the healthcare party is to be added, deleted or whether the characteristics of the healthcare party are to be modified.
- Example(s): add, delete, modify.

relationship type of patient related healthcare party: Data type: V

- Description: role of a healthcare party in connection with the provision of healthcare services to the patient.
- Example(s): patient's usual GP, patient's registered GP, community nurse.

relationship start date and time: Data type: TOCD

- Description: date and time when healthcare party commenced the specified role in the care of the patient.

relationship end date and time: Data type: TOCD

- Description: date and time when healthcare party ceased to have the specified role in the care of the patient.

6.3.21 *Patient related party*

Description:

Information about a person or organisation who may be associated with, or has a role in the care of, a patient, not acting in the role of healthcare party.

Note 1:

This party may be more narrowly defined as a person who is a next of kin, friend, or other contact person.

Examples:

Next of kin, neighbour, employer, friend.

Relationship:

— Instance connection: Each instance of *patient related party* is associated with one instance of *patient*.

Attributes:

service type of record: Data type: V

— Description: indication of whether the patient related party is to be added, deleted or whether the characteristics of the patient related party are to be modified.

— Permitted values: add, delete, modify.

relationship type of related party: Data type: C

— Example(s): legal mother, legal father, partner, prison warden.

relationship start date and time: Data type: TOCD

relationship end date and time: Data type: TOCD

official party identification: Data type: V

— Description: identification of a patient related party assigned by a national healthcare authority.

L-additional party identification: Data type: V

— Description: identification of the party (or of a group to which the party belongs) derived from applications not related to payment.

— **Note:** used under a mutual agreement between the administrative information destination and administrative information originator or as defined by a general interchange agreement. The coding scheme used allows to identify the type of the additional party identification.

person name details: Data type: CAG (n)

— **Note:** this common attribute group is detailed in clause 6.4.5.

organisation name details: Data type: S

— Description: identification of the organisation to which the party belongs.

patient related party occupation: Data type: C/S

— Example(s): carpenter, sales manager, independent consultant.

L-address: Data type: CAG (a)

— **Note:** this common attribute group is detailed in clause 6.4.1.

L-telecommunication: Data type: CAG (t)

— **Note:** this common attribute group is detailed in clause 6.4.6.

patient related person sex: Data type: V

— Description: gender of the patient related person as (officially) registered.

L-language details: Data type: CAG(la)

— **Note:** this common attribute group is detailed in clause 6.4.2.

6.3.22 *Payment conditions*

Description:

Information about agreements or contracts pertaining to the provision of healthcare services.

Example(s):

An agreement between an insurance company and an insured person/entity, in which is specified which kind of care the insured person/entity can claim.

Relationships:

— Instance connection:

Each instance of *payment conditions* is associated with one instance of *payment guarantor*.

Attributes:

service type of record: Data type: V

— Description: indication of whether the payment conditions are to be added, deleted or whether the characteristics of the payment conditions are to be modified.

— Permitted values: add, delete, modify.

payment category of patient: Data type: C

— Description: identification of the type of insurance of a patient.

— Example(s): Private health insurance, public health insurance, employee scheme.

contract reference: Data type: AG

> policy identity number: Data type: V

— Description: identification number of contract.

> member number: Data Type: V

— Description: health insurance membership number.

L-agreement conditions: Data Type: AG

> care coverage type: Data type: C/S

— Description: type of contract condition.

— Example(s): dental care included.

> care coverage value: Data Type: CAG(m)

— Description: value of contract.

> care coverage code: Data Type: C

— Description: identification of care coverage applicable.

> care coverage free text: Data Type: S

— Description: description of care coverage applicable.

> L-covered country: Data Type: V

— Description: list of countries where coverage is applicable, represented by the abbreviations specified in ISO 3166:1988.

> payment level: Data type: AG

lower limit coverage: Data Type: CAG(m)

— Description: the value above which provisions are valid.

upper limit coverage: Data Type: CAG(m)

— Description: the value under which provisions are valid.

benefit rate: Data Type: R

— Description: the percentage of coverage.

> start date and time of agreement-conditions: Data Type: TOCD

— Description: date and (if appropriate) time from which agreement or authorisation conditions are valid.

> end date and time of agreement-conditions: Data Type: TOCD

— Description: date and (if appropriate) time until which agreement or authorisation conditions are valid.

6.3.23 Payment guarantor

Description:

Information about a person or organisation responsible for the payment of the costs of the services performed or to be performed.

Relationships:

— Instance connection: Each instance of *payment guarantor* may be associated with one or more instances of *payment conditions*.

— Instance connection: Each instance of *payment guarantor* is associated with one instance of *patient*

— Instance connection: Each instance of *payment guarantor* may be associated with any number of instances of *contract authorisation*

Attributes:

service type of record: Data type: V

— Description: indication of whether the payment guarantor is to be added, deleted or whether the characteristics of the payment guarantor are to be modified.

— Permitted values: add, delete, modify.

payment guarantor type: Data type C/S

— **Note:** indicates the role of the payment guarantor in the context of the requested service or action event.

— Example(s): patient, insurance company

L-payment guarantor identification: Data type: V

— Description: unique identification assigned to the guarantor.

payment guarantor person name: Data type: CAG(n)

— **Note:** this common attribute group is detailed in 6.4.5.

payment guarantor organisation name: Data type: S

payment guarantor address: Data type: CAG(a)

— **Note:** this common attribute group is detailed in 6.4.1

payment guarantor telecommunication: Data type: CAG(t)

— **Note:** this common attribute group is detailed in 6.4.6.

Attribute groups common to several objects are detailed in clause 6.4

6.3.24 Planned action event

Description:

Any action, event or service that has been planned and relates to clinical, administrative or procedural aspects of the care process for an individual.

Relationships:

- Specialisation:

Each instance of *planned action event* is a specialisation of an instance of the more general class *action event*.

Attributes:

planning stage: Data type: C

- Description: the stage that has been reached in planning the delivery of this service.
- Example(s): accepted, scheduled, completed, rejected, postponed, cancelled.

status of plan: Data type: V

- Description: the status of the plan.
- Example(s): interim, confirmed.

comment on plan status: Data type: C/S

- Description: a note of any conditions on which an interim plan is dependent.

date and time of planning: Data type: TOCD

- Description: date and time at which the planning stage indicated was reached by the service provider.

date and time scheduled: Data type: TOCD

- Description: date and time on which the service is scheduled to be undertaken.

expected delay before action event: Data type: AG

- Description: expected delay with reference to the issue date of the report.

> numerical value of delay: Data type: I

> unit of delay: Data type: V

- Example(s): day, week, month, year.

> comments to expected delay: Data type: S

transport arrangements: Data type: AG

- Description: information about the arrangement or requirements for the transportation of a patient to and from a healthcare location.

> transport arrangement responsibility indicator: Data type: V

- Description: indicator showing whether transport has been arranged for patient or patient associated person.

- Example(s): provider, requester, patient.

> patient's requirements for transport: Data type: C/S

- Description: type of transport required or arranged for the transport of patient.

- Example(s): stretcher, wheelchair, ambulance, taxi.

> escort required: Data type: V

- Description: indicator showing whether the patient will be accompanied or if the arranger needs to provide an escort.

- Example(s): accompanied, escort required.

> comment to transport requirements: Data type: S

6.3.25 Selection criteria

Description:

Criteria which allow the sender to restrict the search or selection of records that are to be returned.

Example(s):

Patients on the waiting list for a heart-transplantation operation or list of in-patients referred to the hospital by a certain General Practitioner.

Relationships:

— Instance connection:

Each instance of *selection criteria* may be associated with any number of instances of *administrative information request*.

Each instance of *selection criteria* may be associated with any number of instances of *administrative information report*.

Attributes:

selection date/time criteria: Data type: AG

> selection start date and time Data type: TOCD

— Description: start date and time governing the selection of records for return in responses to the request.

> selection end date and time Data type: TOCD

— Description: end date and time governing the selection of records for return in responses to the request.

> selection date and time qualifier: Data type: V

— Description: specifies type of date/time referred to.

— Example(s): admissions, discharges, registrations.

patient related healthcare party: Data type: AG

— Description: search to be restricted to those patients associated with a particular healthcare party.

> healthcare party name: Data type: S

> healthcare registration identification: Data type: V

> partner agreed identification of healthcare party: Data type: S

location identification: Data type: C + S

— Description: a partner agreed identification of the location.

— **Note:** the location identification as a code may if necessary be specified as a concatenation of the identifier of a general location and a sub-location (e.g. a hospital identification followed by a ward identification within that hospital). The format of these combined identifiers must be agreed by the communicating partners.

payment guarantor identification: Data type: V

— Description: search is to be restricted to those patients who are associated with a particular payment guarantor.

administrative category of patient: Data type: V

— Description: search is to be restricted to those patients who have received treatment that may be associated with a particular administrative category.

— Example(s): outpatient, day case, inpatient.

administrative sex of patient: Data type: V

— Description: search to be restricted to those patients of a particular sex.

patient birth date criteria: Data type: AG

> start date of range: Data type: TOCD

> end date of range: Data type: TOCD

L-user defined data: Data type: CAG(u)

— Example(s): SQL-string, user defined string with logical operators

— **Note**: this common attribute group is detailed in clause 6.4.7

6.4 Textual description of common attribute groups

6.4.1 Address

Attributes:

L-address type: Data type: V

— Example(s): home address, vacation address, work address.

street name: Data type: S

number or name of house: Data type: S

apartment number: Data type: S

P.O.box number: Data type: S

— **Note**: P.O. = Postal Office

city district: Data type: C/S

— Description: part of a city

postal code: Data type: S

city: Data type: S

area of country/county: Data type: C/S

— Example(s): province, county

country: Data type: V

— **Note**: represented by the abbreviations specified in ISO 3166:1988

unstructured address line: Data type: S

period of address validity: Data type: AG

> start date of address validity: Data type: TOCD

> end date of address validity: Data type: TOCD

6.4.2 Language details

Note:

Language(s) in which a person is willing and able to conduct a healthcare consultation.

Attributes:

language: Data type: V

— **Note**: represented by the abbreviations specified in ISO 639.

ability in language: Data type: V

— Example(s): first language, preferred, fluent, fair, poor, none.

6.4.3 *Location*

Description:

A geographical location or type of location expressed without a formal postal address.

Example(s):

In the patient's home, in hospital, on a ward, in a diagnostic department, on a particular ward, in a particular room within a department.

Attributes:

location type: Data type: C

— Example(s): hospital ward, patient's residence, outpatient clinic, accident & emergency department, prison, nursing home.

location identification: Data type: S

— Description: a partner agreed identification of the location.

— **Note:** the location identification may if necessary be specified as a concatenation of the identifier of a general location and a sub-location (e.g. a hospital identification followed by a ward identification within that hospital). The format of these combined identifiers must be agreed by the communicating partners.

location description: Data type: S

— Description: a textual description of the location.

6.4.4 *Monetary details*

Attributes:

monetary details value: Data type: R

monetary details currency unit: Data type: V

— **Note:** represented by the abbreviations specified in ISO 4217.

6.4.5 *Person name details*

Attributes:

family name: Data type: S

— **Note:** "last name" is ambiguous, especially in the case of persons of Far Eastern extraction.

first given name: Data type: S

— **Note:** "first name" is ambiguous, especially in the case of persons of Far Eastern extraction; "christian name" may cause offence.

middle name: Data type: S

— **Note:** if the complete name consists of more than one name besides family name and given name, initials of the other names may be substituted for the middle name.

title: Data type: S

— Example(s): Mr, Mrs, Sir, Lord, Dr, Ms, Miss, Rev.

generation qualifier: Data type: S

— Example(s): Jnr, Snr, II, III, IV.

— **Note:** usage of this name component is common in the United States of America.

unstructured name: Data type: S

— Example(s): Adeline Albert. Alexander le Grand.

period of name validity: Data type: AG

> start date of name validity Data type: TOCD

> end date of name validity Data type: TOCD

6.4.6 Telecommunication

Attributes:

L-telecommunication type: Data type: V

— Example: beeper, telephone number, fax number.

L-address type of telecommunication: Data type: V

— Example: home, mobile, work.

telecommunication country code: Data type: S

telecommunication area code: Data type: S

telecommunication number: Data type: S

telecommunication extension number: Data type: S

unstructured telecommunication number: Data type: S

— Example(s): E-mail address

period of telecommunication number validity: Data type: AG

> start date of telecommunication number validity: Data type: TOCD

> end date of telecommunication number validity: Data type: TOCD

6.4.7 User defined data

Description:

Data to be defined by the communicating parties using the messages which are described in this European Prestandard.

Purpose:

This purpose of this common attribute group is to fulfill local, regional or national requirements for information exchange which are not met by this European Prestandard.

Note:

This common attribute group must not be used to change the purpose of the messages (e.g. to change the administrative character of the message), nor to extend the scope of this European Prestandard.

Attributes:

identity of user defined attribute: Data type: S

— Example(s): 1. Identification of hair color; 2. identification of a delay in days.

value of user defined attribute: Data type: S

— Example(s): 1. Brown, black, blond. 2. 25 days, 3 days.

7 General message descriptions

7.1 Introduction

A message exchanged between communicating parties incorporates only a limited amount of the information covered by the Domain Information Model (DIM). By message type, a number of objects and attributes that are part of the Domain Information Model are not required to satisfy the purpose of the message and therefore the cardinalities of the relationships between objects may vary from the cardinalities specified by the Domain Information Model.

This European Prestandard does not set limits on number of repetitions of objects, attribute groups and attributes but implementations which do set practical limits are not by that reason alone considered to be deviating from the standard.

The required message types are identified based upon the scenarios. For each message type, a General Message Description (GMD) specifies the objects and their relationships within the context of the message type.

The General Message Descriptions defined are:

- request for unique identifier of patient on registration system,
- request for administrative information for an identified patient,
- request for patient list for given selection criteria,
- message to add patient registration record,
- message to modify patient registration record,
- message to add patient related payment record,
- message to modify patient related payment record,
- message to add patient related event record,
- message to modify patient related event record,
- message to link/unlink patient registration records,
- message to link/unlink action events,
- patient unique identification report,
- patient administrative information report,
- patient administrative list report,
- message for acknowledgement of receipt.

Each individual GMD consists of a number of diagrams and the specification of the status of the attributes within each object.

The symbols used to express the GMDs are equal to the symbols used to define the Domain Information Model (see normative Annex A).

7.2 Request for unique Identifier of Patient on Registration System GMD

7.2.1 General

The *request for unique identifier of patient on registration system GMD* shall be used as the syntax independent message specification to convey information about a request for patient identification.

One instance of a *request for unique identifier of patient on registration system* message type consists of one instance of administrative information request object and this shall relate to one instance of patient. The administrative information request object shall relate to one instance of administrative information destination object and to one instance of administrative information originator.

The administrative information request object may be related to any number of instances of copy destination. For associated scenarios and a description of these models see Annex B.2.

7.2.2 Request for Unique Identifier of Patient on Registration System: Top level model

References to textual descriptions of objects shown in: *Request for Unique Identifier of Patient on Registration System: Top level model.*

- administrative information destination: see 6.3.5; — patient: see 6.3.18;
- administrative information originator: see 6.3.6; — administrative information request: see 6.3.8;
- copy destination: see 6.3.10.

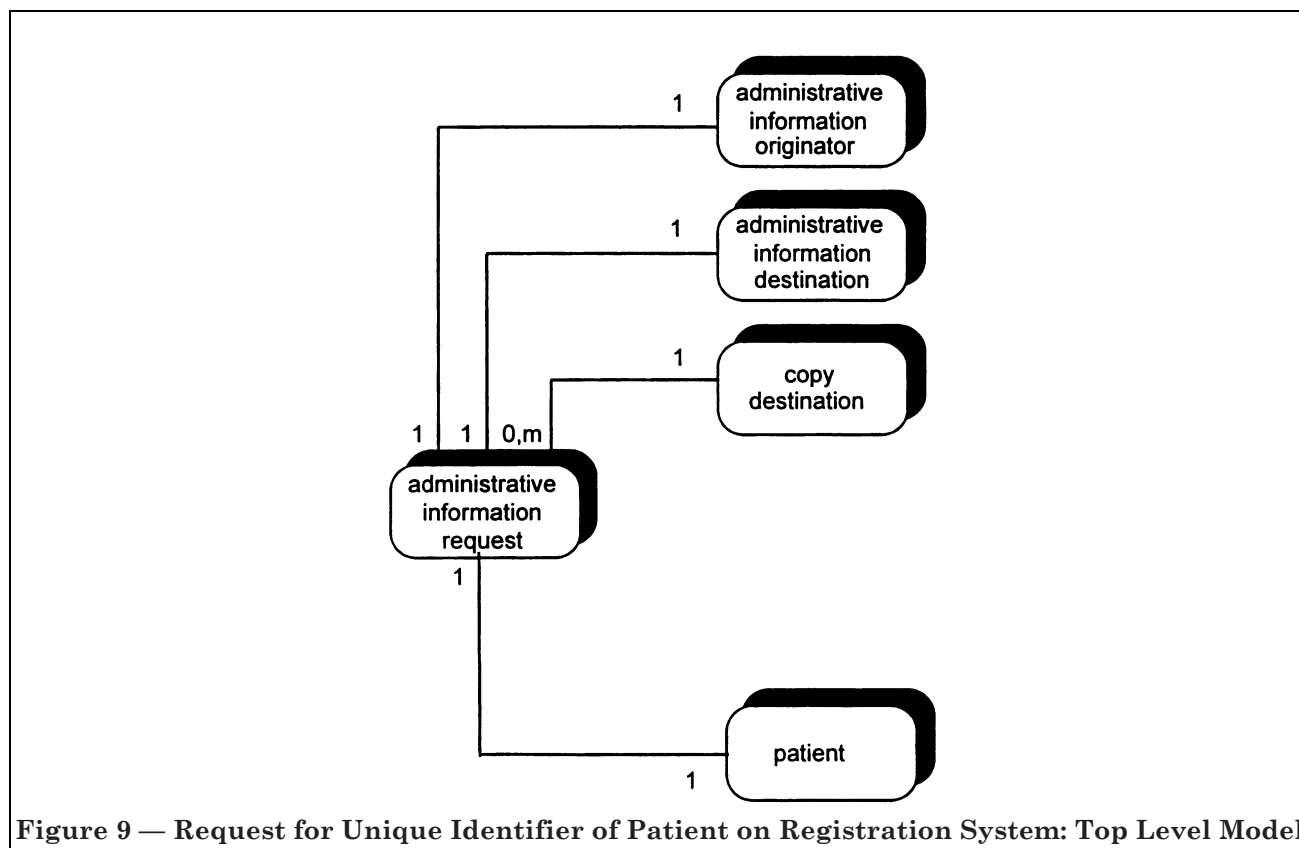


Figure 9 — Request for Unique Identifier of Patient on Registration System: Top Level Model

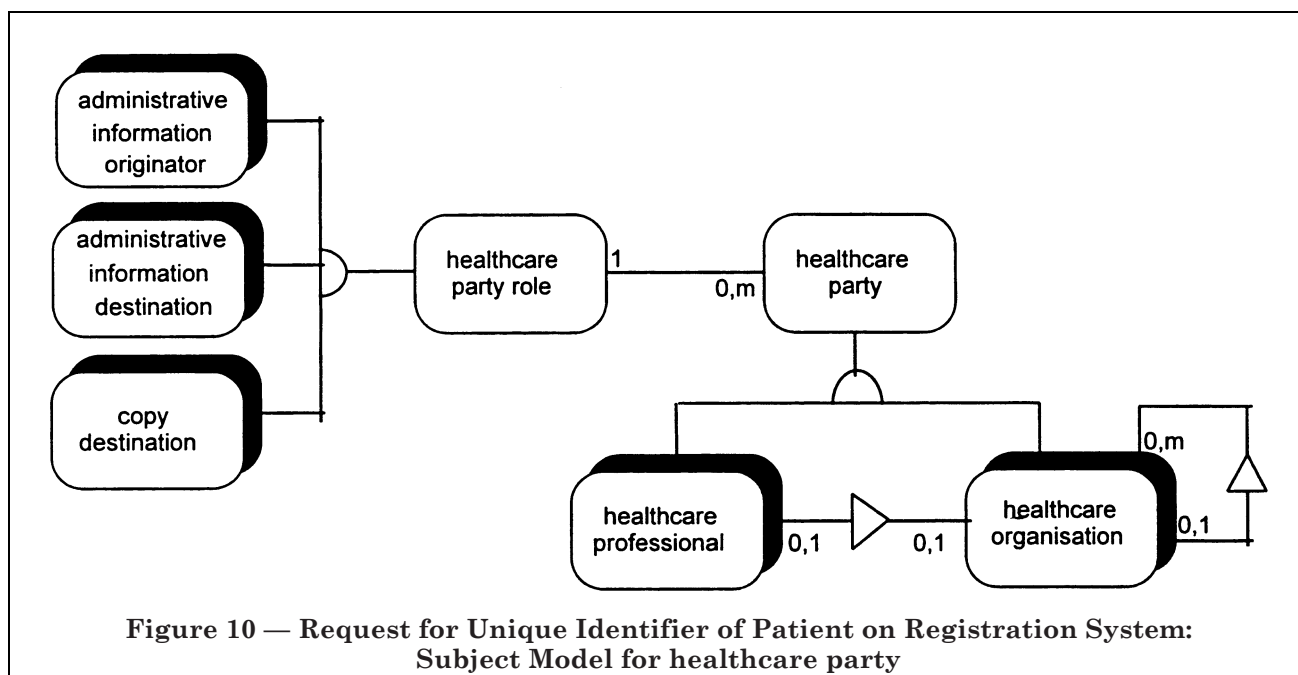
7.2.3 Request for Unique Identifier of Patient on Registration System: Subject Model for healthcare party

References to textual descriptions of objects shown in: *Request for Unique Identifier of Patient on Registration System: Subject model for healthcare party.*

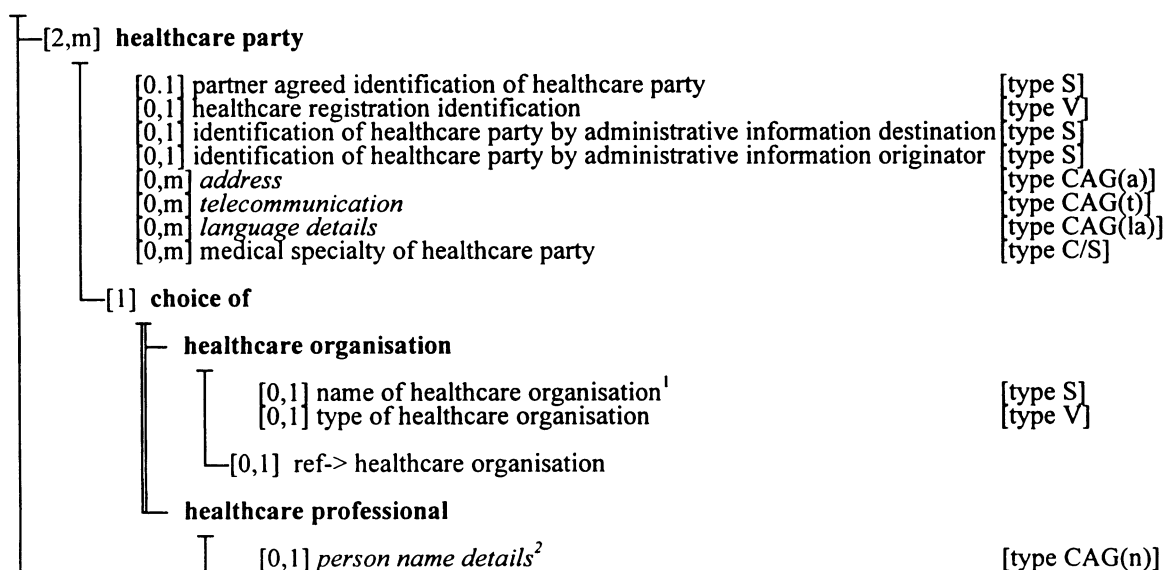
- healthcare organisation: see 6.3.13; — healthcare party: see 6.3.14;
- healthcare party role: see 6.3.15; — healthcare professional: see 6.3.16.

The following components are included to express the relationship with the other models:

- administrative information destination: see 6.3.5; — administrative information originator: see 6.3.6;
- copy destination: see 6.3.10.



7.2.4 Request for Unique Identifier of Patient on Registration System: Hierarchical GMD



1) must be present if healthcare registration identification, partner agreed identification of healthcare party and identification of healthcare party by adm. inf. originator are all absent.

2) must be present if identification of healthcare party by originator is absent.