12.

Patient Care

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12.1 INTRODUCTION AND OVERVIEW

The Patient Care[1] Technical Committee has designed the following messages to support the communication of problem-oriented records, including clinical problems, goals, and pathway information between computer systems. The purpose of this chapter is to describe healthcare messages that need to be communicated between clinical applications for a given individual. These message transactions can be sent in either batch or online mode. As described in Chapter 2, multiple communication transactions may be grouped and sent between applications using a file transfer media or direct networked connection.

This chapter defines the transactions that occur at the seventh OSI level, that is, abstract messages. The examples of messages included in this chapter were constructed using the HL7 Encoding Rules.

12.1.1 Glossary

The following definitions of key terms are used throughout this chapter :

12.1.1.1 Goal

A **goal** refers to an objective to be achieved as a consequence of healthcare interventions applied to an individual. Goals are set in many areas of the healthcare system, and include educational, behavior modification, and clinical goals such as reduced discomfort, improved circulation. Goals are documented by a variety of healthcare professionals including physicians, nurses, and respiratory and other therapists. Goals are defined during patient visits and they may span one or multiple visits, encounters, or episodes of care.

[1] While not an ideal term, the word “patient” is used here to represent the entire spectrum of individuals who receive healthcare in a variety of settings including, but not limited to, acute care, clinic care, long-term care, residential care, home health care, office practices, school-based care and community settings.

12.1.1.2 Problem

A **problem** of a given individual can be described by formal diagnosis coding systems (such as DRG's, NANDA Nursing Diagnosis, ICD9, DSM, etc.) or by other professional descriptions of healthcare issues affecting an individual. Problems can be short- or long-term in nature, chronic or acute, and have a status. In a longitudinal record, all problems may be of importance in the overall long-term care of an individual, and may undergo changes in status repeatedly. Problems are identified during patient visits, and may span multiple visits, encounters, or episodes of care.

12.1.1.3 Role

A **role** refers to the function or responsibility assumed by a person in the context of a healthcare event. Role information documents a person's association with an identified healthcare activity. Examples include primary care provider, transcriptionist, reviewer, and consulting physician.

12.1.1.4 Clinical pathway

A **clinical pathway** is a standardized plan of care against which progress towards health is measured. A clinical pathway is applied based upon the results of a patient assessment. A clinical pathway shows exact timing of all key patient care activities intended to achieve expected standard outcomes within designated time frames. A clinical pathway includes documentation of problems, expected outcomes/goals, and clinical interventions/orders.

12.1.1.5 Variance

Variances are documented deviations, either positive or negative, from a pre-defined standard. Variances are documented against expected outcomes, orders, or the patient's progress in general.

12.1.2 Scenario descriptions

12.1.2.1 Patient pre-admission or patient admission

A physician's office is scheduling a patient for admission to the hospital. The admitting diagnosis/problem list and admission information is sent by the physician's electronic information system to the hospital's Patient Administration system and longitudinal medical record. The trigger event identifies the message as an "add problem" to the Patient Administration and medical record system.

12.1.2.2 Consultation

A consultation is requested for an individual. The information system generating the consultation triggers an unsolicited message containing the problem/diagnosis list that is transmitted to the consulting organization. Goals and various kinds of role information are included with the transmission. The trigger event identifies the message as an unchanged record.

12.1.2.3 Loading a clinical repository

Information from point of care, clinical practice management or ancillary systems regarding the creation or update of pathways, problems, diagnoses, or goals are communicated to the clinical repository. Message triggers from the departmental systems may indicate adding, correcting, deleting, or updating records maintained in the clinical data repository.

12.1.2.4 Communicating clinical pathways and multidisciplinary plans of care

The pathway is communicated between Quality Assurance, Point of Care Systems, Research Databases, and Clinical Order Entry Systems. A point of care information system triggers a linkage between a problem and a set of ordered interventions initiated by the clinical order entry system.

12.1.3 Trigger events

The trigger events originate goal, problem and pathway messages. Each trigger event is documented below, along with the appropriate form of the message exchange. These are message-level event triggers, which are augmented by the action code fields contained in the pathway, problem and goal segments described below. Action codes are required fields in patient care message segments (see Chapter 2 for further information regarding implementation issues). Implementors need to apply the appropriate logic as part of their message construction (for example, logic would state that an "add" trigger event should not include segments with a "delete" action code).

In order to accommodate these high-level events, the following patient care events are included *in HL7 table 0003 - Event type*. The added events are instantiated in *MSH-9-message type* and are used by the pathway, problem, and goal messages. *MSH-9-message type* contains the message type and trigger event for the message.

Patient Care Trigger Events:

Table 0003 - Event type (patient care events only)

Value	Description
PC1	PPR - PC/ Problem Add
PC2	PPR - PC/ Problem Update
PC3	PPR - PC/ Problem Delete
PC4	QRY - PC/ Problem Query
PC5	PRR - PC/ Problem Response
PC6	PGL - PC/ Goal Add
PC7	PGL - PC/ Goal Update
PC8	PGL - PC/ Goal Delete
PC9	QRY - PC/ Goal Query
PCA	PPV - PC/ Goal Response
PCB	PPP - PC/ Pathway (Problem-Oriented) Add
PCC	PPP - PC/ Pathway (Problem-Oriented) Update
PCD	PPP - PC/ Pathway (Problem-Oriented) Delete
PCE	QRY - PC/ Pathway (Problem-Oriented) Query
PCF	PTR - PC/ Pathway (Problem-Oriented) Query Response
PCG	PPG - PC/ Pathway (Goal-Oriented) Add
PCH	PPG - PC/ Pathway (Goal-Oriented) Update
PCJ	PPG - PC/ Pathway (Goal-Oriented) Delete
PCK	QRY - PC/ Pathway (Goal-Oriented) Query
PCL	PPT - PC/ Pathway (Goal-Oriented) Query Response

12.1.4 Use of action codes

Prior to Version 2.3 of the Standard, all repeating segments had to be sent in an update message, because there was no way to indicate which ones changed and which ones did not. In this **snapshot** mode, all repeating segments must be sent with every subsequent message in the series of messages.

To reduce the number of repeating segments, action codes may be employed. Action codes (e.g., order control codes and result status codes) may be embedded within repeating segments and used by sophisticated application parsers to reduce the number of repetitions required for a complete record.

In either event, for systems implementing Version 2.3 or higher, if a particular repeating segment can be updated by either of these two modes, the parties concerned determine by agreement on a site-specific basis whether an interface uses the **snapshot** mode or the **action code/unique identifier** mode.

A description of valid action codes used in message segments originating in this chapter is given immediately below:

a. **AD** (**ADD**) - The object defined within the segment should be added to the set of objects that is linked to the previous object in the hierarchical structure of the message. (i.e., a goal under a problem is implicitly linked to the problem. If the goals already exist, the segment placement indicates the addition of a new linkage between the goal and that problem.)

b. **CO** (**CORRECT**) - The object attributes contained within the segment have been corrected. This is not updated information, but information originally sent and later found to be in error. The previous attributes should be replaced.

c. **UP** (**UPDATE**) - The object attributes contained within the segment are an update of previously sent information. The previous information was correct for the period of time in which it was sent.

d. **DE** (**DELETE**) - This object should be deleted from the set of objects which are linked to the previous object in the message hierarchy. An example might be a role deleted from the set of roles contained by the Goal object. Delete presumes the original linkage was in error.

e. **LI (LINK)** - This action code denotes that the object contained in the segment should be linked in a dependency relationship to the previous object in the hierarchy. It is used to denote relationships and should not contain additional information other than those attributes necessary for specific identification.

f. **UN** (**UNLINK**) - This is a request that the object be removed from the set of linked objects. An example might be the dissolution of a relationship between a problem and a goal. Unlink presumes the original linkage was correct, but due to life cycle changes the active linkage is no longer appropriate.

g. **UC** (**UNCHANGED**) - This code signifies that the segment is being included for the purposes of hierarchical set identification. It does not contain any changed or additional data. Its purpose is to allow the identification of the collection set to which subsequent segments belong in the message structure. An example might be the modification of role information requiring the previous goal segment to be appropriately identified.

12.1.4.1 Examples of action code usage

A problem list and associated goals are generated in a Point of Care system. This transaction is broadcast through an interface engine that determines which systems in the organization require the event information and then forwards the messages appropriately. Each segment included in the original message contains the Action Code for **ADD** to signify an original message instance.

a. Upon subsequent review, it is determined that a role segment designates the wrong person as the transcribing clerk for a problem. After the information is changed in the originating system, a new message is sent to provide synchronization. The message includes the original PRB segment with the *PRB-1-action code* for **UNCHANGED** (to identify the problem for which the role is being changed).

This code signifies that the segment is included for the purposes of hierarchical linkage identification and that none of the information contained in it has been changed. The accompanying role segment sent would include the role **transcriber** in *ROL-3-role*, the correct person in *ROL-4-role person*, and the value for **CORRECT** in *ROL-2-action code*.

b. It is later decided that an additional goal must be added to a specific problem, and that an already existing goal that is currently supporting another problem should also be linked with this specific problem. The message would be constructed with the problem (PRB) segment for identification (the value for *PRB-1-action code* is **UNCHANGED**). The goal segment (GOL) for the additional goal would include *GOL-1-action code* for **ADD**. The goals already included with the problem list that need to be linked to this problem would have to be included on additional GOL segments with the *GOL-1-action code* for **LINK**.

Once data regarding a Diagnosis/Problem or a Goal have been communicated to other systems, there are occasions on which the data may have to be amended.

c. New diagnoses/problems must be added to an individual's list. The Problem message is sent with the appropriate Problem Instance ID. All PRB segment(s) included in the message that contain the value for **ADD** in *PRB-1-action code* are processed as additions to the individual's problem list.

d. New goals are added to the individual's record. The Goal message is sent with the GOL segments indicating the value for **ADD** as *GOL-1-action code* in each segment occurrence.

e. Changes are made to the attributes of a goal. Examples include a change in the expected resolution date, a change in the life cycle status to reflect its successful conclusion, etc. The Goal message is sent with the appropriate *GOL-4-goal instance ID*. The GOL segments of the Goal message would include the value for **UPDATE** in *GOL-1-action code*.

f. A new goal is attached to a problem already in the repository (e.g., the goal of "education on diabetes" for an individual diagnosed with "insulin-dependent diabetes"). A problem message would be sent with the PRB segment including the *PRB-4-problem instance ID* for the diabetes problem, and with the value **UNCHANGED** in *PRB-1-action code*. The attached GOL segment for the education goal would accompany the message and contain the value **ADD** in its *GOL-1-action code* field.

g. A new diagnosis/problem is attached to a goal (e.g., a Goal is to "discharge an individual with intact skin." While the initial problem was "skin breakdown related to immobility," a new problem is "potential for skin breakdown related to draining wounds.") A Goal message would be sent with the GOL segment, including the *GOL-4-goal instance ID* for the discharge goal, and contain the value **UNCHANGED** in *GOL-1-action code*. The attached PRB segment identifying the new problem, "potential for skin breakdown related to draining wounds," would accompany this message and contain the value for **ADD** in *PRB-1-action code*.

Note:	If there is a requirement to modify information contained on a segment and unlink that same problem/goal, two segments must be transmitted (one for the modification and one for the unlink request).

12.1.5 Message construction rules

The semantic meaning of a message is contained in the message through the use of the trigger events, the implicit hierarchical linkages of the segments, and the segment action codes. Each of these has a scope within the message. The message event as included in the *MSH-9-message type* has a scope which is global to the message. The segment hierarchical linkage has a scope which includes both the segment itself and its relationship to its parent. The segment action code's scope is to the segment itself. It may further define link and unlink actions in the hierarchical structure.

12.1.5.1 Rule 1

The trigger event defines the action at the first level of the hierarchy, and should not be contradicted by either hierarchical linkages or segment action codes. Thus, a PC1 (problem add) event should only contain problem, goal, and role segments that have action codes **ADD**.

Figure 12-1. Table of allowable trigger event types and action codes

Trigger Event Types	Allowable Action Codes
xxx-Add	Top level action code must be ADD Dependent segment action code must be ADD (or NW for Order segments)
xxx-Update	Top level action code must be CORRECT, UPDATE, or UNCHANGED Dependent segment action codes - Any are allowed at the lower hierarchical levels
xxx-Delete	Top level action code must be DELETE Dependent segments' action codes must be DELETE

12.1.5.2 Rule 2

When using the segment action codes **LINK** and **UNLINK**, only those fields which are used to define a unique instance of the object are used. This action cannot be used to send changes and updates to the other fields of that segment.

12.1.5.3 Rule 3

In dependent segments **ADD** is the action code to use to establish the initial relationship between parent-child objects. The receiving system must be ready to handle multiple adds of the same object. An example is a Problem List of three (3) problems which is being sent. Attached to these problems are three (3) goals. Problem A has Goals 1 and 2 attached to it. Problem B has the same Goal 2 and a new Goal 3 attached to it. All of these will have the **ADD** action code in the segment, and when Problem B is transmitted with Goals 2 and 3, Goal 2 will have been previously transmitted with Problem A. The message construct would look like this:

```
MSH...
PID...
      PRB  (Problem A)
         GOL  (Goal 1)
         GOL  (Goal 2)
      PRB  (Problem B)
         GOL  (Goal 2)
         GOL  (Goal 3)
      PRB  (Problem C)      (No attached goals)
```

When two (or more) instances of the same problem or goal segment are present in a message both such segments must have identical values for all fields.

12.1.5.4 Rule 4

Remember that HL7 only provides for error messages at the message level. Thus, if the receiving system cannot process one segment, the entire message is going to be treated as an error (See Chapter 2).

12.1.5.5 Rule 5

The Problem, Goal, and Pathway messages integrate order segments as a method for establishing causal linkages. Linkages or relationships between orders, problems, goals, and pathways can therefore be presented in the Patient Care messages.

Orders referenced in Patient Care messages are used for linkage purposes only. Initiation and status changes to orders are accomplished by using dedicated messages defined in the Order Entry Chapter.

12.1.5.6 Rule 6

Order segments are sent with Problem and Goal segments in order to establish a linkage between them, NOT to communicate new orders or changes to those orders. For purposes of these messages, an LI (Link) and a UL (Unlink) code have been added to *HL7 table 0119 - Order control*.

12.2 MESSAGE DEFINITIONS

Applications can have differing orientations for representing problem and goal hierarchies. For example, parent/child relationships may map problem(s) to goal(s), or goal(s) to problem(s). To accommodate these different orientations, the Problem message allows representation of goals that are functionally dependent upon a problem, and the Goal message allows representation of problems that are functionally dependent on a goal.

Due to the multiple occurrences of common segments such as Variance (VAR) and Notes (NTE), we have chosen to expand the segment definitions on the message diagrams to explicitly identify the hierarchical relationships. Examples of this would be "Variance (Goal)" and "Variance (Role)." This does not imply unique segments, but indicates in the first case that the variance is related to its parent Goal, and in the second case that the variance is related to its parent Role.

The notation used to describe the sequence, the optionality, and the repetition of segments is described in Chapter 2, under "Format for defining abstract message."

Note: For all message definitions, the "OBR etc." notation represents all possible combinations of pharmacy and other order detail segments, as outlined in Chapter 4 conventions (See Section 4.1.2.4, "Order detail segment").

12.2.1 PGL/ACK - patient goal message (events PC6, PC7, PC8)

This message is used to send goals from one application to another (e.g., a point of care system to a clinical repository). Many of the segments associated with this event are optional. This optionality allows systems in need of this information to set up transactions that fulfill their requirements.

PGL	Patient Goal Message	Chapter
MSH	Message Header	2
PID	Patient Identification	3
[PV1	Patient Visit	3
[PV2]]	Patient Visit - Additional Info	3
{		
GOL	Detail Goal	12
[{NTE}]	Notes & Comments & Comments (Goal Comments)	2
[{VAR}]	Variance (Goal)	12
[{ROL	Role (Goal)	12
[{VAR}]	Variance (Role)	12
}]		
[{PTH	Detail Pathway	12
[{VAR}]	Variance (Pathway)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation/Result Comments)	2
}]		
[{PRB	Detail Problem	12
[{NTE}]	Notes & Comments (Problem Comments)	2
[{VAR}]	Variance (Problem)	12
[{ROL	Role (Problem)	12
[{VAR}]	Variance (Role)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes& Comments (Observation/Result Comments)	
}]		
}]		
[{ORC	Common Order	4
[OBR, etc...	Order Detail Segment, etc.	4
[{NTE}]	Notes (Order Detail Comments)	2
[{VAR}]	Variance (Order)	12
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation Comments)	2
[{VAR}]}	Variance (Observation/Result)	12
}]		
]		
}]		
}		

ACK	General Acknowledgment	Chapter
MSH	Message Header	2
MSA	Message Acknowledgment	2
[ERR]	Error	2

This error segment indicates the fields that caused a transaction to be rejected.

12.2.2 PPR/ACK - patient problem message (events PC1, PC2, PC3)

The patient problem message is used to send problems from one application to another (e.g., a point of care system to a clinical repository). Many of the segments associated with this event are optional. This optionality allows systems in need of this information to set up transactions that fulfill their requirements.

PPR	Patient Problem Message	Chapter
MSH	Message Header	2
PID	Patient Identification	3
[PV1	Patient Visit	3
[PV2]]	Patient Visit	3
{		
PRB	Detail Problem	12
[{NTE}]	Notes & Comments (Problem Comments)	2
[{VAR}]	Variance (Problem)	12
[{ROL	Role (Problem)	12
[{VAR}]	Variance (Role)	12
}]		
[{PTH	Detail Pathway	12
[{VAR}]	Variance (Pathway)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation/Result Comments)	2
}]		
[{GOL	Detail Goal	12
[{NTE}]	Notes & Comments (Goal Comments)	2
[{VAR}]	Variance (Goal)	12
[{ROL	Role (Goal)	12
[{VAR}]	Variance (Role)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation/Result Comments)	2
}]		
}]		
[{ORC	Common Order	4
[OBR, etc	Order Detail Segment, etc.	4
[{NTE}]	Notes & Comments (Order Detail Comments)	2
[{VAR}]	Variance (Order)	12
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation Comments)	2
[{VAR}]	Variance (Observation/Result)	12
}]		
]		
}]		
}		

ACK	General Acknowledgment	Chapter
MSH	Message Header	2
MSA	Message Acknowledgment	2
[ERR]	Error	2

This error segment indicates the fields that caused a transaction to be rejected.

12.2.3 PPP/ACK - patient pathway message (problem-oriented) (events PCB, PCC, PCD)

PPP	Patient Pathway Problem-Oriented Message	Chapter
MSH	Message Header	2
PID	Patient Identification	3
[PV1	Patient Visit	3
[PV2]]	Patient Visit	3
{		
PTH	Pathway Detail	12
[{NTE}]	Notes & Comments(Pathway Comments)	2
[{VAR}]	Variance (Pathway)	12
[{ROL	Role (Pathway)	12
[{VAR}]	Variance (Role)	12
}]		
[{PRB	Detail Problem	12
[{NTE}]	Notes & Comments(Problem Comments)	2
[{VAR}]	Variance (Problem)	12
[{ROL	Role (Problem)	12
[{VAR}]	Variance (Role)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments(Observation/Result Comments)	2
}]		
[{GOL	Detail Goal	12
[{NTE}]	Notes & Comments(Goal Comments)	2
[{VAR}]	Variance (Goal)	12
[{ROL	Role (Goal)	12
[{VAR}]	Variance (Role)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation/Result Comments)	2
}]		
}]		
[{ORC	Common Order	4
[OBR, etc	Order Detail Segment, etc.	4
[{NTE]}	Notes & Comments(Order Detail Comments)	2
[{VAR}]	Variance (Order)	12
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments(Observation Comments)	2
[{VAR}]	Variance (Observation/Result)	12
}]		
]		
}]		
}]		
}		

ACK	General Acknowledgment	Chapter
MSH	Message Header	2
MSA	Message Acknowledgment	2
[ERR]	Error	2

12.2.4 PPG/ACK - patient pathway message (goal-oriented) (events PCG, PCH, PCJ)

PPG	Patient Pathway Goal-Oriented Message	Chapter
MSH	Message Header	2
PID	Patient Identification	3
[PV1	Patient Visit	3
[PV2]]	Patient Visit	3
{		
PTH	Pathway Detail	12
[{NTE}]	Notes & Comments(Pathway Comments)	2
[{VAR}]	Variance (Pathway)	12
[{ROL	Role (Pathway)	12
[{VAR}]	Variance (Role)	12
}]		
[{GOL	Detail Goal	12
[{NTE}]	Notes & Comments(Goal Comments)	2
[{VAR}]	Variance (Goal)	12
[{ROL	Role (Goal)	12
[{VAR}]	Variance (Role)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments(Observation/Result Comments)	2
}]		
[{PRB	Detail Problem	12
[{NTE}]	Notes & Comments (Problem Comments)	2
[{VAR}]	Variance (Problem)	12
[{ROL	Role (Problem)	12
[{VAR}]	Variance (Role)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments(Observation/Result Comments)	2
}]		
}]		
[{ORC	Common Order	4
[OBR, etc...	Order Detail Segment, etc.	4
[{NTE}]	Notes & Comments (Order Detail Comments)	2
[{VAR}]	Variance (Order)	12
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments(Observation Comments)	2
[{VAR}]	Variance (Observation/Result)	12
}]		
]		
}]		
}]		
}		

ACK	General Acknowledgment	Chapter
MSH	Message Header	2
MSA	Message Acknowledgment	2
[ERR]	Error	2

12.2.5 QRY - patient care problem query (event PC4)

The following trigger/message event is served by QRY (a query from another system). The *QRD-8-who filter* identifies the patient or account number upon which the query is defined and can contain a Format Code of **R** (record-oriented). If the query is based on the Patient ID and there are data associated with multiple accounts, the problem of which account data should be returned becomes an implementation issue.

QRY	Query	Chapter
MSH	Message Header	2
QRD	Query Definition	2
[QRF]	Query Filter	2

12.2.6 PRR - patient problem response (event PC5)

The following trigger/message event is served by PRR (a response from the system responsible for maintaining the problem information).

PRR	Problem Query Response	Chapter
MSH	Message Header	2
MSA	Message Acknowledgment	2
[ERR]	Error	2
QRD	Query Definition	2
{		
PID	Patient Identification	3
[PV1	Patient Visit	3
[PV2]]	Patient Visit	3
{		
PRB	Detail Problem	12
[{NTE}]	Notes & Comments (Problem Comments)	2
[{VAR}]	Variance (Problem)	12
[{ROL	Role (Problem)	12
[{VAR}]	Variance (Role)	12
}]		
[{PTH	Detail Pathway	12
[{VAR}]	Variance (Pathway)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation/Result Comments)	2
}]		
[{GOL	Detail Goal	12
[{NTE}]	Notes & Comments (Goal Comments)	2
[{VAR}]	Variance (Goal)	12
[{ROL	Role (Goal)	12
[{VAR}]	Variance (Role)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation/Result Comments)	2
}]		
}]		
[{ORC	Common Order	4
[OBR, etc.	Order Detail Segment, etc.	4
[{NTE}]	Notes & Comments (Order Detail Comments)	2
[{VAR}]	Variance (Order)	12
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation Comments)	2
[{VAR}]	Variance (Observation/Result)	12
}]		
]		
}]		
}		
}		

12.2.7 QRY - patient goal query (event PC9)

The following trigger/message event is served by QRY (a query from another system). The *QRD-8-who filter* identifies the patient or account number upon which the query is defined and can contain a Format Code of **R** (record-oriented). If the query is based on the Patient ID and there are data associated with multiple accounts, the problem of which account data should be returned becomes an implementation issue.

QRY	Query	Chapter
MSH	Message Header	2
QRD	Query Definition	2
[QRF]	Query Filter	2

12.2.8 PPV - patient goal response (event PCA)

The following trigger/message event is served by PPV (a response from the system responsible for maintaining the goal information).

PPV	Goal Query Response	Chapter
MSH	Message Header	2
MSA	Message Acknowledgment	2
[ERR]	Error	2
QRD	Query Definition	2
{		
PID	Patient Identification	3
[PV1	Patient Visit	3
[PV2]]	Patient Visit	3
{		
GOL	Detail Goal	12
[{NTE}]	Notes & Comments (Goal Comments)	2
[{VAR}]	Variance (Goal)	12
[{ROL	Role (Goal)	12
[{VAR}]	Variance (Role)	12
}]		
[{PTH	Detail Pathway	12
[{VAR}]	Variance (Pathway)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation/Result Comments)	2
}]		
[{PRB	Detail Problem	12
[{NTE}]	Notes & Comments (Problem Comments)	2
[{VAR}]	Variance (Problem)	12
[{ROL	Role (Problem)	12
[{VAR}]	Variance (Role)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation/Result Comments)	2
}]		
}]		
[{ORC	Common Order	4
[OBR, etc.	Order Detail Segment, etc.	4
[{NTE]}	Notes & Comments (Order Detail Comments)	2
[{VAR}]	Variance (Order)	12
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation Comments)	2
[{VAR}]	Variance (Observation/Result)	12
}]		
]		
}]		
}		
}		

12.2.9 QRY - patient pathway (problem-oriented) query (event PCE)

The following trigger/message event is served by QRY (a query from another system). The *QRD-8-who filter* identifies the patient or account number upon which the query is defined and can contain a Format Code of **R** (record-oriented). If the query is based on the Patient ID and there are data associated with multiple accounts, the problem of which account data should be returned becomes an implementation issue.

QRY	Query	Chapter
MSH	Message Header	2
QRD	Query Definition	2
[QRF]	Query Filter	2

12.2.10 PTR - patient pathway (problem-oriented) response (event PCF)

The following trigger/message event is served by PTR (a response from the system responsible for maintaining the problem-oriented pathway information).

```
                    Patient Pathway
PTR                 Problem-Oriented Response                    Chapter

MSH                 Message Header                                   2
MSA                 Message Acknowledgment                           2
[ERR]               Error
                                                                     2
QRD                 Query Definition                                 2
{
 PID                Patient Identification                           3
 [PV1               Patient Visit                                    3
    [PV2]]          Patient Visit                                    3
 {
   PTH              Pathway Detail                                  12
    [{NTE}]         Notes & Comments (Pathway Comments)              2
    [{VAR}]         Variance (Pathway)                              12
    [{ROL       Role (Pathway)                                      12
      [{VAR}]       Variance (Role)                                 12
    }]0
    [{PRB       Detail Problem                                      12
      [{NTE}]       Notes & Comments (Problem Comments)             2
      [{VAR}]       Variance (Problem)                              12
      [{ROL         Role (Problem)                                  12
       [{VAR}]  Variance (Role)                                     12
      }]
     [{OBX          Observation/Result                               7
        {NTE}]  Notes & Comments (Observation/Result Comments)      2
      }]
     [{GOL          Detail Goal                                     12
       [{NTE}]  Notes & Comments (Goal Comments)                    2
       [{VAR}]  Variance (Goal)                                     12
       [{ROL        Role (Goal)                                     12
         [{VAR}]    Variance (Role)                                 12
       }]
       [{OBX        Observation/Result                               7
         [{NTE}]    Notes & Comments (Observation/Result Comments)   2
       }]
     }]
     [{ORC          Common Order                                    4
       [OBR, etc.   Order Detail Segment, etc.                      4
         [{NTE}]    Notes & Comments (Order Detail Comments)        2
         [{VAR}]    Variance (Order)                                12
         [{OBX  Observation/Result                                  7
           [{NTE}] Notes & Comments (Observation Comments)          2
           [{VAR}] Variance (Observation/Result)                    12
         }]
       ]
    }]
   }]
 }
}
```

12.2.11 QRY - patient pathway (goal-oriented) query (event PCK)

The following trigger/message event is served by QRY (a query from another system). The *QRD-8-who filter* identifies the patient or account number upon which the query is defined and can contain a Format Code of **R** (record-oriented). If the query is based on the Patient ID and there are data associated with multiple accounts, the problem of which account data should be returned becomes an implementation issue.

QRY	Query	Chapter
MSH	Message Header	2
QRD	Query Definition	2
[QRF]	Query Filter	2

12.2.12 PPT - patient pathway (goal-oriented) response (event PCL)

The following trigger/message event is served by PPT (a response from the system responsible for maintaining the goal-oriented pathway information).

PPT	Patient Pathway Goal-Oriented Response	Chapter
MSH	Message Header	2
MSA	Message Acknowledgment	2
[ERR]	Error	2
QRD	Query Definition	2
{		
PID	Patient Identification	3
[PV1	Patient Visit	3
[PV2]]	Patient Visit	3
{		
PTH	Pathway Detail	12
[{NTE}]	Notes & Comments (Pathway Comments)	2
[{VAR}]	Variance (Pathway)	12
[{ROL	Role (Pathway)	12
[{VAR}]	Variance (Role)	12
}]		
[{GOL	Detail Goal	12
[{NTE}]	Notes & Comments (Goal Comments)	2
[{VAR}]	Variance (Goal)	12
[{ROL	Role (Goal)	12
[{VAR}]	Variance (Role)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation/Result Comments)	2
}]		
[{PRB	Detail Problem	12
[{NTE}]	Notes & Comments (Problem Comments)	2
[{VAR}]	Variance (Problem)	12
[{ROL	Role (Problem)	12
[{VAR}]	Variance (Role)	12
}]		
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation/Result Comments)	2
}]		
}]		
[{ORC	Common Order	4
[OBR, etc.	Order Detail Segment, etc.	4
[{NTE}]	Notes & Comments (Order Detail Comments)	2
[{VAR}]	Variance (Order)	12
[{OBX	Observation/Result	7
[{NTE}]	Notes & Comments (Observation Comments)	2
[{VAR}]	Variance (Observation/Result)	12
}]		
]		
}]		
}]		
}		

12.3 MESSAGE SEGMENTS

12.3.1 GOL - goal detail segment

The goal detail segment contains the data necessary to add, update, correct, and delete the goals for an individual.

Figure 12-2. GOL attributes

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
1	2	ID	R		0287	00816	Action Code
2	26	TS	R			00817	Action Date/Time
3	80	CE	R			00818	Goal ID
4	60	EI	R			00819	Goal Instance ID
5	60	EI	O			00820	Episode of Care ID
6	60	NM	O			00821	Goal List Priority
7	26	TS	O			00822	Goal Established Date/Time
8	26	TS	O			00824	Expected Goal Achieve Date/Time
9	80	CE	O			00825	Goal Classification
10	80	CE	O			00826	Goal Management Discipline
11	80	CE	O			00827	Current Goal Review Status
12	26	TS	O			00828	Current Goal Review Date/Time
13	26	TS	O			00829	Next Goal Review Date/Time
14	26	TS	O			00830	Previous Goal Review Date/Time
15	200	TQ	O			00831	Goal Review Interval
16	80	CE	O			00832	Goal Evaluation
17	300	ST	O	Y		00833	Goal Evaluation Comment
18	80	CE	O			00834	Goal Life Cycle Status
19	26	TS	O			00835	Goal Life Cycle Status Date/Time
20	80	CE	O	Y		00836	Goal Target Type
21	80	XPN	O	Y		00837	Goal Target Name

12.3.1.0 GOL field definitions

The business and/or application must assume responsibility for maintaining knowledge about data ownership, versioning, and/or audit trail control (for purposes of data integrity). It is also their responsibility to represent the appropriate version of that data.

12.3.1.1 Action code (ID) 00816

Definition: The action code field gives the intent of the message. Refer to *HL7 table 0287 - Action code* for valid values.

Table 0287 - Action code

Value	Description
AD	ADD
CO	CORRECT
DE	DELETE
LI	LINK
UC	UNCHANGED *
UN	UNLINK
UP	UPDATE

* The UNCHANGED action code is used to signify to the applications programs that this particular segment includes no information to be modified. It is supplied in order to identify the correct record for which the following modification is intended.

12.3.1.2 Action date/time (TS) 00817

Definition: This field contains the date/time that the operation represented by the action code was performed.

12.3.1.3 Goal ID (CE) 00818

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field identifies the goal. This is the identifier from an institution's master list of goals.

12.3.1.4 Goal instance ID (EI) 00819

```
Components:  <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (IS)> ^ <universal ID type (ID)>
```

Definition: This field contains the unique identifier assigned by an initiating system to this instance of the goal.

> **Note:** It is required that the value in this field be unique over time. This instance ID identifies a specific instance for a specific patient and is unique across all patients. See entity ID data type description in Chapter 2.

12.3.1.5 Episode of care ID (EI) 00820

```
Components:  <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (IS)> ^ <universal ID type (ID)>
```

Definition: This field uniquely identifies the episode of care to which this goal applies. See note under "Ongoing issues."

> **Note**: Based on application use, this field is required to be unique over time.

12.3.1.6 Goal list priority (NM) 00821

Definition: This field prioritizes this goal on a list that is maintained for an individual.

12.3.1.7 Goal established date/time (TS) 00822

Definition: This field identifies the date/time when the stated goal was initially created.

12.3.1.8 Expected goal achievement date/time (TS) 00824

Definition: This field contains the projected date/time for achieving the stated goal.

12.3.1.9 Goal classification (CE) 00825

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field indicates the kind of goal. This field can be used to categorize goals so that they may be managed and viewed independently within different applications (e.g., admission, final, post-operative, pre-operative, outpatient, discharge, etc.).

Note:	This field can be used to differentiate separate goal lists that may be managed independently within applications.

12.3.1.10 Goal management discipline (CE) 00826

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field indicates the category of caregiver with responsibility for managing this specific goal (e.g., care team, nursing, medicine, respiratory therapy, occupational therapy, dietary etc.). This is a repeating field to allow identification of all disciplines who may have the responsibility for this goal.

12.3.1.11 Current goal review status (CE) 00827

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains the current point in the continuum of a goal review cycle (e.g., due, initiated, reviewed, overdue, verified, etc.).

12.3.1.12 Current goal review date/time (TS) 00828

Definition: This field contains the date/time of the current review of the goal.

12.3.1.13 Next goal review date/time (TS) 00829

Definition: This field contains the date/time of the next scheduled goal review.

12.3.1.14 Previous goal review date/time (TS) 00830

Definition: This field contains the date/time that the goal was reviewed prior to the current review.

12.3.1.15 Goal review interval (TQ) 00831

```
Components:  <quantity (CQ)> ^ <interval (CM)> ^ <duration (CM)> ^ <start date/time (TS)> ^ <end date/time
              (TS)> ^ <priority (ID)> ^ <condition (ST)> ^ <text (TX)> ^ <conjunction (ID)> ^ <order
              sequencing (CM)>
```

Definition: This field contains the interval used to calculate the next goal review date. (See Chapter 4, Section 4.4.2, “Interval component (CM)”).

12.3.1.16 Goal evaluation (CE) 00832

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field provides an indicator of progress towards achievement of the goal (e.g., achieved, ahead of schedule, delayed, failed to achieve, etc.).

12.3.1.17 Goal evaluation comment (ST) 00833

Definition: This field contains the comments associated with the goal evaluation. Examples of comments that might be entered in this field include: a reason for delay in achieving goal, or a clinical footnote about progress made towards the goal, etc.

12.3.1.18 Goal life cycle status (CE) 00834

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains an indication of the state of the goal (e.g., Active, Canceled, Inactive, Suspended, etc.).

12.3.1.19 Goal life cycle status date/time (TS) 00835

Definition: This field contains the effective date/time of the current goal life cycle status.

12.3.1.20 Goal target type (CE) 00836

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains the individual/group for whom the goal has been established (e.g., family group, family member, patient, etc.).

Note: This field is focused on a specific person/group that is directly patient-related.

12.3.1.21 Goal target name (XPN) 00837

```
Components:  <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or
              III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <name type code (ID) >
```

Definition: This field contains the identification of the person(s) on whom the goal is focused. This is a repeating field which allows for the identification of a group of individuals.

12.3.2 PRB - problem detail segment

The problem detail segment contains the data necessary to add, update, correct, and delete the problems of a given individual.

Figure 12-3. PRB attributes

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
1	2	ID	R		0287	00816	Action Code
2	26	TS	R			00817	Action Date/Time
3	80	CE	R			00838	Problem ID
4	60	EI	R			00839	Problem Instance ID
5	60	EI	O			00840	Episode of Care ID
6	60	NM	O			00841	Problem List Priority
7	26	TS	O			00842	Problem Established Date/Time
8	26	TS	O			00843	Anticipated Problem Resolution Date/Time
9	26	TS	O			00844	Actual Problem Resolution Date/Time
10	80	CE	O			00845	Problem Classification
11	80	CE	O	Y		00846	Problem Management Discipline
12	80	CE	O			00847	Problem Persistence
13	80	CE	O			00848	Problem Confirmation Status
14	80	CE	O			00849	Problem Life Cycle Status
15	26	TS	O			00850	Problem Life Cycle Status Date/Time
16	26	TS	O			00851	Problem Date of Onset
17	80	ST	O			00852	Problem Onset Text
18	80	CE	O			00853	Problem Ranking
19	60	CE	O			00854	Certainty of Problem
20	5	NM	O			00855	Probability of Problem (0-1)
21	80	CE	O			00856	Individual Awareness of Problem
22	80	CE	O			00857	Problem Prognosis
23	80	CE	O			00858	Individual Awareness of Prognosis
24	200	ST	O			00859	Family/Significant Other Awareness of Problem/Prognosis
25	80	CE	O			00823	Security/Sensitivity

The business and/or application must assume the responsibility for maintaining knowledge about data ownership, versioning, and/or audit trail control (for purposes of data integrity). It is also their responsibility to represent the appropriate version of that data.

12.3.2.0 PRB field definitions

12.3.2.1 Action code (ID) 00816

Definition: This field contains the intent of the message. Refer to *HL7 table 0287 - Action code* for valid values.

12.3.2.2 Action date/time (TS) 00817

Definition: This field contains the date/time that the operation represented by the action code was performed.

12.3.2.3 Problem ID (CE) 00838

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field identifies the problem. This is the identifier from an institution's master list of problems.

12.3.2.4 Problem instance ID (EI) 00839

```
Components:  <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (IS)> ^ <universal ID type (ID)>
```

Definition: This field contains the identifier assigned by an initiating system to an instance of a problem.

Note:	It is required that this value remain unique over time . This instance ID identifies a specific instance for a specific patient and is unique across all patients. See entity ID data type description in Chapter 2.

12.3.2.5 Episode of care ID (EI) 00840

```
Components:  <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (IS)> ^ <universal ID type (ID)>
```

Definition: This field uniquely identifies the episode of care to which this problem applies. (See note under "Ongoing issues.")

Note:	It is required that this field be unique over time.

12.3.2.6 Problem list priority (NM) 00841

Definition: This field prioritizes this problem on a list that is maintained for the individual.

12.3.2.7 Problem established date/time (TS) 00842

Definition: This field contains the date/time when the corresponding problem was initially identified by the care giver.

12.3.2.8 Anticipated problem resolution date/time (TS) 00843

Definition: This field contains the estimated date/time for resolving the stated problem.

12.3.2.9 Actual problem resolution date/time (TS) 00844

Definition: This field contains the date/time that the problem was actually resolved.

12.3.2.10 Problem classification (CE) 00845

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field indicates the kind of problem. This field can be used to categorize problems so that they may be managed and viewed independently within different applications (e.g., admission, final, post-operative, pre-operative, outpatient, discharge, etc.).

12.3.2.11 Problem management discipline (CE) 00846

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field indicates the category of caregiver with responsibility for managing this specific problem (e.g., care team, nursing, medicine, respiratory therapy, occupational therapy, dietary etc.). This is a repeating field to allow identification of all disciplines who may have the responsibility for this problem.

12.3.2.12 Problem persistence (CE) 00847

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains the perseverance of a problem (e.g., acute, chronic, etc.).

12.3.2.13 Problem confirmation status (CE) 00848

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains the verification status of a problem (e.g., confirmed, differential, provisional, rule-out, etc.).

12.3.2.14 Problem life cycle status (CE) 00849

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains the current status of the problem at this particular date/time (e.g., active, active-improving, active-stable, active-worsening, inactive, resolved, etc.).

12.3.2.15 Problem life cycle status date/time (TS) 00850

Definition: This field indicates the effective date/time of the current problem life cycle status.

12.3.2.16 Problem date of onset (TS) 00851

Definition: This field contains the date/time when the problem began.

12.3.2.17 Problem onset text (ST) 00852

Definition: This field allows for a textual representation of the time when the problem began.

12.3.2.18 Problem ranking (CE) 00853

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains a user-defined prioritization of a problem (e.g., numeric ranking, or the use of words such as “primary,” “secondary,” etc.).

12.3.2.19 Certainty of problem (CE) 00854

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains a qualitative representation of the certainty of a problem (e.g., HI - high, LO - low, ME - medium, etc.).

12.3.2.20 Probability of problem (NM) 00855

Definition: This field contains a quantitative or numeric representation of the certainty that the problem exists for this patient. This field has a valid range of 0 to 1. For example, a healthcare provider may be 75% (.75) sure that the problem has been correctly identified.

> **Note**: We have provided for two different representations of the certainty of the problem due to varying representations in applications.

12.3.2.21 Individual awareness of problem (CE) 00856

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains the individual's comprehension of the problem (e.g., full, marginal, partial, etc.).

12.3.2.22 Problem prognosis (CE) 00857

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains the prognosis for the individual's problem (e.g., good, poor, etc.).

12.3.2.23 Individual awareness of prognosis (CE) 00858

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains the individual's comprehension of the prognosis for the problem (e.g., full, marginal, partial, etc.).

12.3.2.24 Family/significant other awareness of problem/prognosis (ST) 00859

Definition: This field indicates the individual's family or significant other's comprehension of the actual problem/prognosis.

12.3.2.25 Security/sensitivity (CE) 00823

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains information about the level of security and/or sensitivity surrounding the problem (e.g., highly sensitive, not sensitive, sensitive, etc.).

12.3.3 ROL - role segment

The role segment contains the data necessary to add, update, correct, and delete from the record persons involved, as well as their functional involvement with the activity being transmitted.

Figure 12-4. ROL attributes

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
1	60	EI	R			01206	Role Instance ID
2	2	ID	R		0287	00816	Action Code
3	80	CE	R			01197	Role
4	80	XCN	R			01198	Role Person
5	26	TS	O			01199	Role Begin Date/Time
6	26	TS	O			01200	Role End Date/Time
7	80	CE	O			01201	Role Duration
8	80	CE	O			01205	Role Action Reason

12.3.3.0 ROL - field definitions

12.3.3.1 Role instance ID (EI) 01206

```
Components:  <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (IS)> ^ <universal ID type (ID)>
```

Definition: This field contains a unique identifier of the specific role record.

12.3.3.2 Action code (ID) 00816

Definition: This field reveals the intent of the message. Refer to *HL7 table 0287 - Action code* for valid values.

12.3.3.3 Role (CE) 001197

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field indicates the functional involvement with the activity being transmitted (e.g., Case Manager, Evaluator, Transcriber, etc.).

12.3.3.4 Role person (XCN) 001198

```
Components:  <ID number (ST)> ^ <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^
              <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <source
              table (IS)> ^ <assigning authority (HD)> ^ <name type code(ID)>  ^ <identifier check digit (ST)>
              ^ <code identifying the check digit scheme employed (ID)> ^ <identifier type code (IS)> ^
              <assigning facility (HD)>

subcomponents of assigning authority:  <namespace ID(IS)> & <universal ID (ST)> & <universal ID type (ID)>

subcomponents of assigning facility:  <namespace ID(IS)> & <universal ID (ST)> & <universal ID type (ID)>
```

Definition: This field contains the identity of the person who is assuming the role that is being transmitted.

12.3.3.5 Role begin date/time (TS) 01199

Definition: This field contains the date/time when the role began.

12.3.3.6 Role end date/time (TS) 01200

Definition: This field contains the date/time when the role ended.

12.3.3.7 Role duration (CE) 01201

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains the qualitative length of time for performance of a role (e.g., until the next assessment, four days, until discharge, etc.).

12.3.3.8 Role action reason (CE) 01205

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field indicates the reason why the person is assuming (or changing) the role (e.g., shift change, new primary nurse, etc.).

12.3.4 PTH - pathway segment

The pathway segment contains the data necessary to add, update, correct, and delete from the record pathways that are utilized to address an individual's health care.

Figure 12-5. PTH attributes

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
1	2	ID	R		0287	00816	Action Code
2	80	CE	R			01207	Pathway ID
3	60	EI	R			01208	Pathway Instance ID
4	26	TS	R			01209	Pathway Established Date/Time
5	80	CE	O			01210	Pathway Life Cycle Status
6	26	TS	C			01211	Change Pathway Life Cycle Status Date/Time

12.3.4.0 PTH - field definitions

12.3.4.1 Action code (ID) 00816

Definition: This field reveals the intent of the message. Refer to *HL7 table 0287 - Action code* for valid values.

12.3.4.2 Pathway ID (CE) 01207

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains the pathway master data identifier associated with the referenced problem or goal. Examples; open heart pathway, new diabetic, total hip replace.

12.3.4.3 Pathway instance ID (EI) 01208

```
Components:  <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (IS)> ^ <universal ID type (ID)>
```

Definition: This field contains a value generated by the originating application that represents an associated order placer group number, or other unique identifier assigned to the grouping of pathway directives.

> **Note:** It is required that this value remain unique over time. This instance ID identifies a specific instance for a specific patient and is unique across all patients. See entity ID data type description in Chapter 2.

12.3.4.4 Pathway established date/time (TS) 01209

Definition: This field contains the identification of the event time for the current pathway record.

12.3.4.5 Pathway life cycle status (CE) 01210

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field contains an application-specific set of state identifiers (e.g., Active, Suspended, Complete, Canceled, Delayed, Scheduled).

12.3.4.6 Change pathway life cycle status date/time (TS) 01211

Definition: This field contains the date/time when pathway has been modified or deactivated. (Marked as conditional - must be filled in if trigger event is update or terminate pathway)

12.3.5 VAR - variance segment

The variance segment contains the data necessary to describes differences that may have occurred at the time when a healthcare event was documented.

Figure 12-6. VAR attributes

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
1	60	EI	R			01212	Variance Instance ID
2	26	TS	R			01213	Documented Date/Time
3	26	TS	O			01214	Stated Variance Date/Time
4	80	XCN	O			01215	Variance Originator
5	60	CE	O			01216	Variance Classification
6	512	ST	O	Y		01217	Variance Description

12.3.5.0 VAR - field definitions

12.3.5.1 Variance instance ID (EI) 01212

```
Components:  <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (IS)> ^ <universal ID type (ID)>
```

Definition: This field contains the unique identifier of the specific variance record.

12.3.5.2 Documented date/time (TS) 01213

Definition: This field contains the time stamp that identifies the timed occurrence of the variance documentation.

12.3.5.3 Stated variance date/time (TS) 01214

Definition: This field contains the time stamp that identifies a stated time of the variance which may be different than the time it was documented.

12.3.5.4 Variance originator (XCN) 01215

```
Components:  <ID number (ST)> ^ <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^
              <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <source
              table (IS)> ^ <assigning authority (HD)> ^ <name type code(ID)>  ^ <identifier check digit (ST)>
              ^ <code identifying the check digit scheme employed (ID)> ^ <identifier type code (IS)> ^
              <assigning facility (HD)>

subcomponents of assigning authority:  <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

subcomponents of assigning facility:  <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>
```

Definition: This field contains the originator (person or system) documenting the variance.

12.3.5.5 Variance classification (CE) 01216

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^
              <alternate text (ST)> ^ <name of alternate coding system (ST)>
```

Definition: This field identifies a categorical set of variances. Classification may be used by applications for presentation and processing functions.

12.3.5.6 Variance description (ST) 01217

Definition: This field specifies the details of a variance. The content of the field is a string with optional formatting.

12.4 EXAMPLE TRANSACTIONS

The following is an example of a patient goal message.

```
MSH|^~\&|PCIS|MEDCENTER|REPOSITORY|MEDCENTER|||PGL^PC4| <cr>
PID||0123456-1||ROBERTSON^JOHN^H|||||||9821111|<cr>
PV1|1|I|2000^2012^01||||004777^LEBAUER^SIDNEY^J.|||SUR||||ADM|A0|<cr>
GOL|AD|199505011200|00312^Improve Peripheral Circulation^Goal Master
   List||||199505011200|199505101200|Due^Review Due^Next Review List||
   199505021200||QAM|||ACT^Active^Kaiser Internal|199505011200|
   P^Patient^Kaiser Internal||<cr>
ROL|12^Primary Nurse^Role Master List|AD|^Wilson^Jane^L^^RN|
   199505011200||||<cr>
ROL|45^Recorder^Role Master
   List|AD|^Smith^Ellen^^^^|199505011201||||<cr>

PRB|AD|199505011200|04411^Restricted Circulation^Nursing Problem List||
   ||199505011200|||IP^Inpatient^Problem Classification List|
   NU^Nursing^Management Discipline List|Acute^Acute^Persistence List|
   C^Confirmed^Confirmation Status List|A1^Active^Life Cycle Status
   List| 199505011200|199504250000||2^Secondary^Ranking
   List|HI^High^Certainty Coding List||1^Fully^Awareness Coding
   List|2^Good^Prognosis Coding List|||| <cr>
ROL|1^Diagnosing Provider^Role Master List|AD|^Edwards^John^H^^MD|
199505011200||||<cr>

OBX|001|TX|^Peripheral Dependent Edema|1|Increasing Edema in lower
   limbs|<cr>
```

The following is an example of a patient problem message.

```
MSH|^~\&|PCIS|MEDCENTER|REPOSITORY|MEDCENTER|||PPR^PC1| <cr>
PID||0123456-1||ROBERTSON^JOHN^H|||||||9821111|<cr>
PV1|1|I|2000^2012^01||||004777^LEBAUER^SIDNEY^J.|||SUR||||ADM|A0|<cr>
PRB|AD|199505011200|04411^Restricted Circulation^Nursing Problem List||
   ||199505011200|||IP^Inpatient^Problem Classification List|
   NU^Nursing^Management Discipline List|Acute^Acute^Persistence List|
   C^Confirmed^Confirmation Status List|A1^Active^Life Cycle Status
   List| 199505011200|199504250000||2^Secondary^Ranking
   List|HI^High^Certainty Coding List||1^Fully^Awareness Coding
   List|2^Good^Prognosis Coding List|||| <cr>
ROL|1^Diagnosing Provider^Role Master List|AD|^Edwards^John^H^^MD|
   199505011200||||<cr>
ROL|45^Recorder^Role Master
   List|AD|^Smith^Ellen^^^^|199505011201||||<cr>


OBX|001|TX|^Peripheral Dependent Edema|1|Increasing Edema in lower
   limbs|<cr>
GOL|AD|199505011200|00312^Improve Peripheral Circulation^Goal Master
   List||||199505011200|199505101200|Due^Review Due^Next Review List||
   199505021200||QAM|||ACT^Active^Kaiser Internal|199505011200|
   P^Patient^Kaiser Internal||<cr>
ROL|12^Primary Nurse^Role Master List|AD|^Wilson^Jane^L^^RN|
   199505011200||||<cr>
```

The following is an example of a patient pathway problem-oriented message.

```
MSH|^~\&|PCIS|MEDCENTER|REPOSITORY|MEDCENTER|||PPP^PCB| <cr>
PID||0123456-1||ROBERTSON^JOHN^H|||||||9821111|<cr>
PV1|1|I|2000^2012^01||||004777^LEBAUER^SIDNEY^J.|||SUR||||ADM|A0|<cr>
PTH|AD^^HL70287|OH457^Open Heart
   Pathway^AHCPR|0018329078785^PCIS1|199505011200|A1^Active^Pathway
   Life Cycle Status List|199505011200|<cr>
VAR|84032847876^PCIS1|199505011200||^Wilson^Jane^L^^RN|23^Coincident^Va
   riance Class List|Exceeds APACHE III threshold score.|<cr>
```

```
PRB|AD|199505011200|04411^Restricted Circulation^Nursing Problem List||
   ||199505011200|||IP^Inpatient^Problem Classification List|
   NU^Nursing^Management Discipline List|Acute^Acute^Persistence List|
   C^Confirmed^Confirmation Status List|A1^Active^Life Cycle Status
   List| 199505011200|199504250000||2^Secondary^Ranking
   List|HI^High^Certainty Coding List||1^Fully^Awareness Coding
   List|2^Good^Prognosis Coding List|||| <cr>
ROL|1^Diagnosing Provider^Role Master List|AD|^Edwards^John^H^^MD|
   199505011200||||<cr>
ROL|45^Recorder^Role Master
   List|AD|^Smith^Ellen^^^^|199505011201||||<cr>
ORC|NW|2045^OE||||E|^C^199505011200^199505011200^^TM30^^^^|<cr>
RXO|||3|L|IV|D5W WITH 1/2 NS WITH 20 MEQ KCL EVERY THIRD BOTTLE
   STARTING WITH
  FIRST||W8&825&A^|N|||||||H30<cr>
ORC|NW|1000^OE|9999999^RX|||E|^Q6H^D10^^^R|||||||<cr>
RXA|1|199505011200|||0047-0402-30^Ampicillin 250 MG TAB^NDC|2|TAB||<cr>
```

12.5 IMPLEMENTATION CONSIDERATIONS

The Patient Care Technical Committee recognizes that this document contains a great deal of information for computer systems that are currently under development. The participating institutions/vendors will be responsible for defining the necessary tables that have been previously discussed. As these tables are defined and clarified, they will be included in this document for distribution.

Applications can have differing orientations for representing problem and goal hierarchies. For example, parent:child relationships may map problem(s) to goal(s), or goal(s) to problem(s). To accommodate these different orientations, the Problem message allows representation of goals that are functionally dependent upon a problem, and the Goal message allow representation of problems that are functionally dependent on a goal. We recognize that institutions will decide on one or the other of the methodologies based on practice preferences.

12.6 ONGOING ISSUES

In both the Problem and Goal segments a field named “Episode of Care” has been included. This field is intended to accommodate an entity defined by consensus business rules that defines an episode of care.

Individual businesses/applications must be cognizant of and able to handle data integrity issues that may arise from the fact that problem lists and goal lists may not have a single owner of record. This chapter does not address the need for joint data ownership (of problem and goal data) between two or more front-end clinical applications concurrently supporting patient care in real-time. From a data integrity perspective, problem/goal data must be sourced/originated (and thus owned) by a single application only - for example, a front-end clinical application (source) transmitting to a back-end repository application. This is not recognized to be within the current scope of the Patient Care Committee; therefore, this concern will be submitted to the Control/Query group for further debate.

The Patient Care Technical Committee will be addressing the following issues in the future:

1. The relationship between one problem and another problem.

2. The relationships between problems, goals and related patient care events.