

Situational Awareness for Novel Epidemic Response

0.1.0 - CI Build
AUDACIOUS INQUIRY

Situational Awareness for Novel Epidemic Response - Local Development build (v0.1.0). See the [Directory of published versions](#)

Table of Contents

- [0 Table of Contents](#)
- [1 Home](#)
- [2 Overview](#)
- [3 Actors and Transactions](#)
- [4 Using Group Resources](#)
- [5 Transaction 1](#)
- [6 Transaction 2](#)
- [7 Transaction 3](#)
- [8 Artifacts Summary](#)
 - [8.1 Bed Group Profile](#)
 - [8.2 Bed Location Profile](#)
 - [8.3 Device Group Profile](#)
 - [8.4 Supporting Device Profile](#)
 - [8.5 BedFeature](#)
 - [8.6 BedLocationOperationalStatus](#)
 - [8.7 BedType](#)
 - [8.8 Bed Type Coding System](#)

Home

- [About This Guide](#)
- [Organization of This Guide](#)
- [About Audacious Inquiry](#)

The Situational Awareness for Novel Epidemic Response Implementation Guide enables transmission of high level situational awareness information from inpatient facilities to centralized data repositories to support the treatment of novel influenza-like illness.

About This Guide

This is a draft implementation guide to promote discussion with leaders in the Health IT industry, and very much a work in progress. All content in this guide is subject to discussion and change.

The goal of publishing this guide is to encourage the creation of a community interested in extremely rapid development of interfaces that can support communication Bed and other resources to Public Health in this time of crisis. [Audacious Inquiry](#) is publishing this material as follows:

This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](#)



We expect the licensing to be adjusted once community development commences.

This implementation guide provides the FHIR Implementation materials associated with the SANER project.

Organization of This Guide

This guide is organized into three main sections:

1. Volume I: [Overview](#)
 1. [Actors and Transactions](#)
 2. [Using Group Resources](#)
2. Volume II: [Transactions](#)
 1. [Query Availability \[PULL-TX\]](#)
 2. [Update Availability \[PUSH-TX\]](#)
 3. [Report Results \[REPORT-TX\]](#)
3. Volume III: [Content Profiles](#)
 1. [Bed Availability Group](#)
 2. [Device Availability Group](#)
 3. [Single Bed Availability Status](#)
 4. [Single Device Availability Status](#)

Click on any of the links above, head on over the [table of contents](#), or if you are looking for a specific artifact, check out the [index](#).

You can also download:

- [this entire guide](#),
- the definition resources in [json](#), [xml](#), [ttl](#), or [csv](#) format, or
- the example resources in [json](#), [xml](#) or [ttl](#) format.

The source code for this Implementation Guide can be found on <https://github.com/AudaciousInquiry/saner-ig>.

About Audacious Inquiry

[Audacious Inquiry](#) (Ai) is an industry-shaping health information technology and policy company that provides bold solutions for connected healthcare. Nationally recognized for its work to facilitate health data interoperability, Ai is a trusted partner to CMS, ONC, state Hospital Associations and Medicaid agencies across the country. The company delivers a cloud-based software as a service platform that is the catalyst for secure and smart health information exchange among physicians, hospitals, health plans, ACOs, MCOs, and public health agencies across 12 US states. Ai is raising the bar for how health data is shared, managed, and protected.

Overview

- [About This Guide](#)
- [Situational Awareness for Novel Epidemic Response](#)
- [Bed Availability](#)
- [Use Cases](#)

The Situational Awareness for Novel Epidemic Response Implementation Guide enables transmission of high level situational awareness information from inpatient facilities to centralized data repositories to support the treatment of novel influenza-like illness.

About This Guide

This is a draft implementation guide to promote discussion with leaders in the Health IT industry, and very much a work in progress. All content in this guide is subject to discussion and change.

The goal of publishing this guide is to encourage the creation of a community interested in extremely rapid development of an interface that can support Public Health in this time of crisis. Audacious Inquiry is publishing this material as follows:



This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](#).

We expect the licensing to be adjusted once community development commences.

Situational Awareness for Novel Epidemic Response

Situational Awareness has been the focus of attention in health IT circles well before the detection of potentially pandemic flu strains during the early formation of the Office of the National Coordinator in 2005.

2006

Bird Flu (H5N1)

2009

Swine Flu (H1N1)

2012

Middle East Respiratory Syndrome (MERS)

2013

Another form of Bird Flu (H7N9)

2019

COVID-19 (SARS-Cov-2)

Situational Data Needs of Public Health Key situational data needed by public health has remained relatively consistent and well established over this time, and is to support awareness of:

1. Local, Regional and National case rates and trends
2. Bed availability for treatment
3. Other resources availability for treatment
 - o Staff
 - o Medications
 - o Immunizations
 - o Medical Equipment (e.g., Respirators, N95 Masks)
 - o Supplies (e.g., Cleaning Supplies, Facemasks)

Focusing the Solution Space

In evaluating solutions for the above challenges, we have established the following principles:

1. The solution needs to be focused on providing high ROI.
2. The solution should not duplicate existing efforts.
3. The solution needs to work with existing Health IT products currently deployed.
4. The uplift needed to enable an existing product to support public health information requirements needs to be low enough to effectively deliver quickly.

Quick Assessment

1. Existing work by [Johns Hopkins University](#) in aggregating case data sets and visualizing them addresses national and even regional (at the county level) trends.
2. Bed availability is an area where there is a great deal of existing work [1,2,3,4](#), but not much prior success, although there are existing Health IT solutions that have this data (not just in the EHR). If the solution can be interfaced rather than integrated, an implementation can be piloted much faster.
3. Other resource utilization is available in inventory control or central monitoring solutions, but are not necessarily readily available in the EHR. This would be a natural evolution from Bed Availability.

This rapid assessment leads this guide to a focus on bed availability.

Bed Availability

The key data for bed availability is found in Bed Management solutions integrated with current inpatient EHR Systems, and in departmental ICU and Central Monitoring systems. Such solutions support management of bed assignment for admissions and provide direction to housekeeping staff regarding bed-turnover activities (e.g., cleaning) or departmental systems which provide ICU and Nursing central monitoring capabilities. They are often separate components or modules, Standalone solutions, or third party solutions which integrate with an EHR System (e.g. Forward Advantage with MEDITECH).

Prior Solutions and Existing Standards

Prior standards developed to address these issues have been profiled through past efforts. These are briefly outlined below.

HAvBED and OASIS EDXL/HAVE Standards

Most notably, the OASIS Emergency Data Exchange Language (EDXL), and the OASIS Hospital Availability Exchange were profiled by ANSI/HITSP in response to the AHIC Emergency Responder Use Case. This work was advanced by AHRQ to develop what is now known as the HAvBED solution, which became a federally-mandated program for states to collect and report bed availability data. Health and Human Services suspended the HAvBED program in 2016. Some of the challenges with HAvBED included:

- Manually entered data in many automated bed availability systems is labor-intensive, untimely, resulting in data quality issues.
- Similar issues with to the manual data entry option.
- Technology standards have evolved, and HAvBED requirements did not keep pace.
- Facilities and states were often reluctant to share bed availability data.

HL7 Version 2

Other standards which contain information about bed availability include HL7 Version 2 (e.g., the [ADT_A20 Bed Status Update](#) message), and general observations profiled by ANSI/HITSP to support organizational reporting of bed availability using HL7 Version 2 OBX segments.

HL7 Version 3

No HL7 Version 3 standards were developed to support Bed management or availability.

HL7 FHIR

In HL7 FHIR the [Location](#) resource can describe information about any bed within a facility. The [Group](#) resource can report on specific quantities of groups of resources available that match a specific set of characteristics.

Location Resource

While the Location resource can report on beds, it can also be used to describe buildings, wards, geographic area, or any other sort of place, including “mobile” places such as a mobile clinic or ambulance. Given its broad application, it needs to be profiled to support use for bed availability.

While many existing Certified EHR Systems support the FHIR standard and the Location resource today, there’s little use of the Location resource to report data about beds. It is more commonly used to report Location data associated with the [Common Clinical Data Set](#) (now known as the US Core Data for Interoperability or [USCDI](#)) required by the ONC 2015 Certification regulations. These uses of Location are found in the Encounter, Procedure and Practitioner resources. Those uses of Location describe the facility where an encounter occurs, the location where a procedure is performed, or the location of a practitioner.

Group Resource

The Group resource can also be used to support aggregate reporting on beds, as it allows reporting of quantities of a type of item without requiring a FHIR resource to reference the actual item, just its characteristics. This resource can also be used to report on other types of resources, such as ventilators, respirators, and N95 masks.

NOTE: While Group doesn’t specifically support groups of Location resources, it can be used to report on any group of things that can be defined by characteristics, it simply cannot enumerate those resources. That is not essential for the use cases in this implementation guide.

The Group resource is even more lightly deployed in existing EHR products.

Terminology

Terminology plays an important role in this implementation guide. It can be used to describe:

- The kind of location where the bed is located (e.g., ED, med/surgery, ICU, Pediatric, NICU, Isolation)
- The status of a bed (e.g., available, in use, isolated, contaminated, housekeeping)
- Other types of resources (e.g., ventilators, respirators, masks, et cetera)

Location Type

Bed Status

HL7 Version 2 Table 0116 Bed Status Provides Vocabulary that can describe the status of a bed.

Use Cases

The sections below describe the use cases supported by the Audacious Inquiry SANER Implementation Guide.

Use Case 1: Collecting Bed Availability

This use case addresses the exchange of data from Facilities to a Centralized reporting system for Public Health

This use case is supported by the following

- Actors
 - [Availability Source](#)
 - [Availability Collector](#)
- Transactions
 - [Query Availability](#)
 - [Update Availability](#)
- Content
 - [Bed Availability Group](#)
 - [Single Bed Availability Status](#)

Use Case 1: Collecting Bed Availability Process Flow

Overview TBD

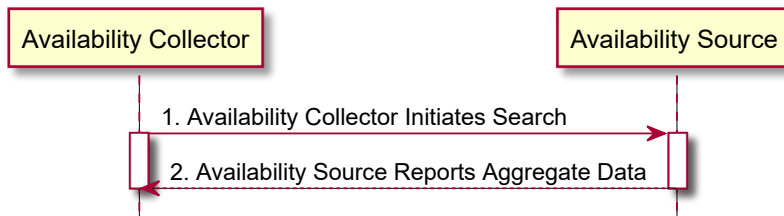


Figure 2.3.1.1-1: Use Case 1: Collecting Bed Availability Process Flow

1. Availability Collector Initiates Search

The Availability Collector identifies features associated with a group of bed resources that it wishes to collect data about. For example, the Availability Collector can request information about ICU, med/surg, or ED beds available or

in use.

TBD

2. Availability Source Reports Aggregate Data

The Availability Source reports aggregate data about a group of beds based on specified bed characteristics

TBD

Use Case 2: Reporting on Bed Availability

TBD

This use case is supported by the following

- Actors
 - [Availability Collector](#)
 - [Availability Reporter](#)
- Transactions
 - [Report Results](#)
- Content
 - [Bed Availability Group](#)
 - [Single Bed Availability Status](#)

Use Case 2: Reporting on Bed Availability Process Flow

TBD

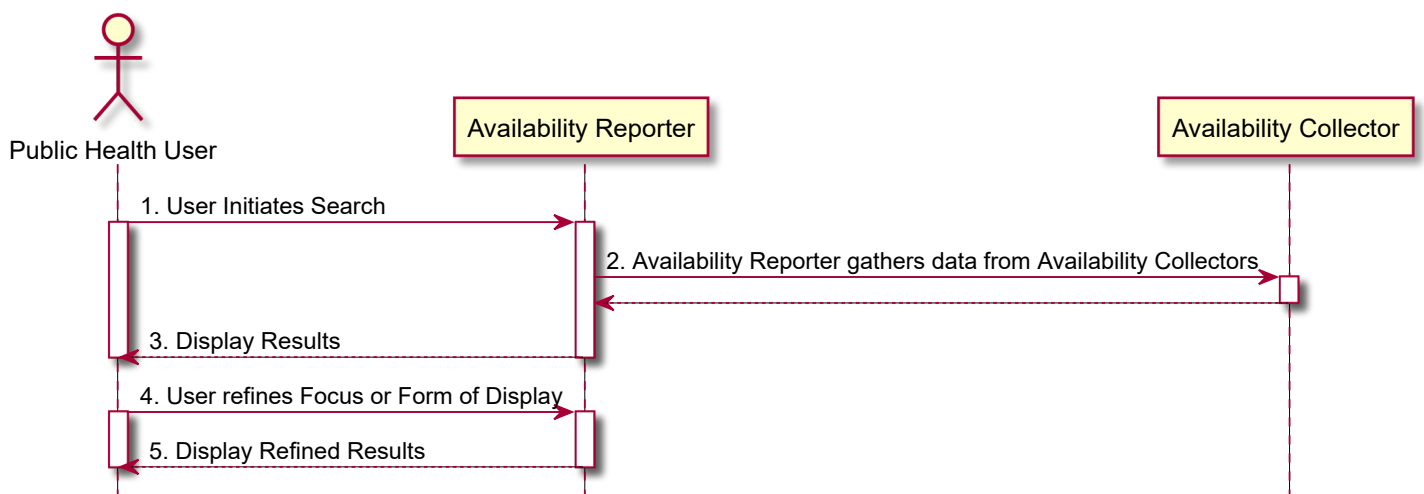


Figure 2.3.1.2-1: Use Case 2: Reporting on Bed Availability Process Flow

1. User Initiates Search

The Public Health User navigates to a web page where collected data is reported.

TBD

2. Availability Reporter gathers data from Availability Collectors

The Availability Reporter gathers and aggregates data from one or more Availability Collectors.

The means by which gathering and aggregation is performed is not further specified by this implementation guide. However, the Availability Reporter can obtain data from an Availability Collector by using other transactions within this profile if desired.

3. Display Results

The Availability Reporter displays an overview of aggregated regional results to the user, and additional links which enable navigation to finer grained or alternative displays.

Data can be displayed as aggregated or fine-grained status information based on the current focus of the public health user. It may be shown as a map, a table, or a graph.

4. User refines Focus or Form of Display

The Public Health User selects a new form of display (e.g., Map, table or graph) or refines their focus (e.g., wider or smaller region).

TBD

5. Display Refined Results

The Availability Collector modifies the users focus and reporting format

TBD

Footnotes

1. [HITSP C47: Resource Utilization Message](#) ↵
2. [HAvBED2: Hospital Available Beds for Emergencies and Disasters](#) ↵
3. [Emergency Data Exchange Language \(EDXL\) Hospital Availability Exchange \(HAVE\) v1.0 incorporating Approved Errata](#) ↵
4. [HL7/OASIS Cross Paradigm Implementation Guide: Emergency Data Exchange Language \(EDXL\) Hospital Availability Exchange \(HAVE\) Version 2.0 \(EDXL-HAVE\), Release 1](#) ↵

Actors and Transactions

- [Actors](#)
- [Actor Options](#)
- [Transaction Descriptions](#)

This section defines the actors and transactions in this implementation guide.

Figure 1.1-1 below shows the actors directly involved in the SANER Profile and the relevant transactions between them.

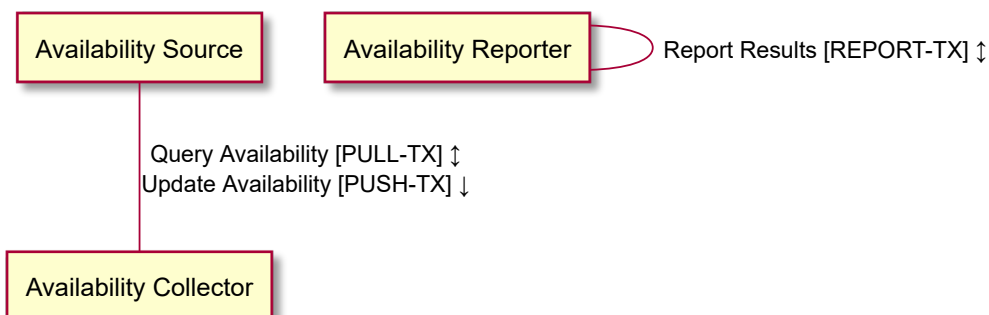


Figure 3-1: SANER Actor Diagram

Table 3-1 lists the transactions for each actor directly involved in the SANER Implementation Guide. To claim compliance with this guide, an actor shall support all required transactions (labeled “R”) and may support the optional transactions (labeled “O”).

Table 3-1: SANER Implementation Guide - Actors and Transactions

Actors	Transactions	Optionality
Availability Source	Query Availability [PULL-TX]	C ¹
	Update Availability [PUSH-TX]	C ²
Availability Collector	Query Availability [PULL-TX]	R
	Update Availability [PUSH-TX]	R
Availability Reporter	Report Results [REPORT-TX]	R

Note 1: When the Availability Source supports the Pull Option

Note 2: When the Availability Source supports the Push Option

Actors

The actors in this profile are described in more detail in the sections below.

Availability Source

The Availability Source Actor reports results for a single facility, collection of facilities or aggregated data for a region

TBD

Availability Source Requirements

1. An Availability Source **shall** implement at least one of the following options:
 - o Push Option
 - o Pull Option

Availability Collector

The Availability Collector gathers data on resource availability from other systems

Availability Reporter

The Availability Reporter allows users to view reports on aggregated and fine-grained data gathered from multiple Availability Sources.

Actor Options

Options that may be selected for each actor in this guide, are listed in Table 3.2-1 below. Dependencies between options when applicable are specified in notes.

Table 3.2-1 Actor Options

Actor	Option Name
Availability Source	Push Option
	Pull Option
	Resource Option
Availability Collector	Resource Option

Actor	Option Name
Availability Reporter	Resource Option

The options in this guide are describe in more detail the sections below.

Push Option

An actor implementing the Push Option supports the periodic push of a Bundle of records describing the current status of health delivery resources to a centralized collection point.

This option applies to the actors as described below.

Availability Source

An Availability Source implementing the Push Option periodically sends updates to the Availability Collector using the [Update Availability](#) transaction.

Pull Option

An actor implementing the Pull Option supports use of the [Query Availability] transaction made from an Availability Collector to enable reporting of the current status of selected health delivery resources .

This option applies to the actors as described below.

Availability Source

An Availability Source implementing the Pull Option periodically is periodically queried by an Availability Collector using the [Query Availability](#) transaction to enable collection of the current status.

Resource Option

An actor supporting the Resource Option can describe the status of non-bed treatment resources, such as ventilators, respirators, infusion pumps, monitoring equipment, et cetera

This option applies to the actors as described below.

Availability Source

An Availability Source implementing the Resource Option can send updates on other Resources (e.g., ventilators, respirators, other medical equipment).

Availability Collector

An Availability Collector implementing the Resource Option can request updates on other Resources (e.g., ventilators, respirators, other medical equipment), or aggregate data updates provided about these resources.

Availability Reporter

An Availability Reporter implementing the Resource Option can reports data about other Resources (e.g., ventilators, respirators, other medical equipment).

Transaction Descriptions

The transactions in this profile are summarized in the sections below.

Query Availability

The Query Availability transaction allows an Availability Collector to periodically query about the availability of a resource from an Availability Source.

For more details see the detailed [transaction description](#)

Update Availability

The Update Availability transaction allows an Availability Source to periodically update the availability of resources to an Availability Collector.

For more details see the detailed [transaction description](#)

Report Results

The Report Results transaction allows users (e.g., Public Health Officials) to view current resource availability.

For more details see the detailed [transaction description](#)

Using Group Resources

- [Using the Group Resource](#)

This implementation guide uses the HL7 FHIR [Group](#) resource to report information about distinct groups of resources that are available. It supports two different forms of reporting on this resource:

1. Push - In which the Availability Source periodically reports the status of one or more Group Resources in a [Batch](#) update.
2. Pull - In which the Availability Collector periodically queries the status of one or more Group Resources in one or more [Search](#) operations.

Both of these operations are expected to be periodic, and the Collector is expected to support both forms depending upon how it is configured. This enables Availability Sources to have a choice about how the data is updated, yet retains the ability of the Availability Collector to detect systems that are offline or not-responding. In the Push case, the Availability Collector can be configured to detect that availability data is not being updated frequently enough. In the Pull case, the Availability Collector can detect systems which are not responsive to the queries that it is performing.

Using the Group Resource

According to the FHIR Standard:

The FHIR Group Resource is able to define a set of *possible* ... devices, etc. that are of interest for some intended future healthcare-related activities.

It is that intent that is being utilized when applying the Group resource to the use cases in this guide. A group is defined by describing the desired characteristics of the group.

Each Group resource managed by an Availability Source fully describes a distinct set of available resources and has a unique id, and that UUID is a persistent identifier for describing a collection of resources with a given set of characteristics. For the purposes of this specification, the `Group.id` field of any group exchanged must be a [UUID](#) as described by RFC 4122, and may not be the [nil-UUID](#), but is otherwise unconstrained. It may be a version 1 UUID (e.g., generated from MAC address and time-stamp), a version 4 randomly generated UUID, or any other variant. The version 4 UUID is often the most recommended by security professionals to avoid leaking information about network devices.

Group Characteristics

There are two different types of Group resources which are used by this guide. A Bed Group describes a collection of beds based on their status (Active, Temporarily Unavailable, or Inactive), operational status, type of bed, and the entity managing the beds. The Bed Group must be supported by all actors in this implementation guide. A bed is both a device (the physical

bed), and has an associated location and features. This guide defines the characteristics of a bed, its location and associated features as a set of characteristics that define a group of beds. The members of the group are those beds which have matching characteristics.

A Device Group describes a collection of medical devices based on their availability status, type of device, and entity managing the device. The Device Group is supported by actors that implement the [Resource Option](#) described in this guide.

Group resources are distinguished by the characteristics which define the group. This guide describes the [Extensible](#) vocabularies used to describe these characteristics.

Bed Group Characteristics

Status

The status characteristic corresponds to the [status](#) field of the the FHIR [Location Resource](#).

The vocabulary for the Status Characteristic is defined by the required vocabulary for Location.status.

Code	Description	Implementation Guidance
active	Active	Beds described by this characteristic are operational (but may be in use).
suspended	Suspended	Beds described by this characteristic are temporarily out of service.
inactive	Inactive	Beds described by this characteristic are no longer operational (e.g., Closed).

Operational Status

The Operational Status characteristic corresponds to the [operationalStatus](#) field of the FHIR [Location Resource](#). The vocabulary for the Operational Status Characteristic is defined by the preferred vocabulary for Location.operationalStatus.

Code	Description	Implementation Guidance
C	Closed	This bed is no longer in service
H	Housekeeping	This bed is not in used, but is presently ready for use.
K	Contaminated	This bed needs decontamination before it can be readied for use. Not used by this guide. See Feature below.
I	Isolated	The ability to support isolation is a feature which can be combined with other operational status values.
O	Occupied	This bed is presently in use.
U	Unoccupied	This bed is presently ready for use.

Type

The Type characteristic corresponds to the [type](#) field of the FHIR [Location Resource](#).

The vocabulary for the type characteristic is informed by the work of AHRQ, ANSI/HITSP, HL7, and OASIS in advancement of the OASIS HAVE standards, and the AHRQ [HAVBED](#) specification.

Feature : The feature characteristic describes other important capabilities of the Bed (or device). At present, this characteristic is used to identify beds that support negative airflow or other isolation. Isolation capabilities are "features" that can be added to a "Bed" by placing it in a location that supports isolation.

Code ²	HAVE Concept	Description
NEGISO	NegativeFlowIsolation	Negative airflow isolation beds. These provide respiratory isolation. Isolation beds.
OTHISO	OtherIsolation	These provide isolation where airflow is not a concern. Non-Isolation beds.
NONISO	Not defined	These beds do not provide isolation.

****Footnotes**** Note 1: May be combined with PEDU to identify pediatric psychiatric beds. Note 2: This code is defined in the value set defined by this implementation guide.

Code(s)	HAVE Category	HAVE/HAvBed Description
		Adult ICU bed type
ICU	AdultICU	These can support critically ill or injured patients, including ventilator support This category includes all major subtypes of ICU beds, including neurological, cardiac, trauma, or medical, with the exception that this category does not include burn ICU beds Pediatric ICU beds.
PEDICU	PediatricICU	This is similar to adult ICU beds, but for patients 17-years-old and younger.
PEDNICU	NeonatalICU	Neonatal ICU beds
ER	ED	Emergency Department beds used for acute care
Not Supported	NurseryBeds	Capacity Status for Neonatal or newborn care beds including all bed types other than Neonatal ICU Medical-surgical beds
HU	MedicalSurgical	These are also thought of as ward beds. These beds may or may not include cardiac telemetry capability Rehabilitation/Long term care beds
RHU	RehabLongTermCare	Beds designated as long term care rehabilitation. These do not include floor beds Burn beds
Not Supported	Burn	These are thought of as burn ICU beds, either approved by the American Burn Association or self-designated. These beds are NOT to be included in other ICU bed counts. Pediatrics beds.
PEDU	Pediatrics	These are ward medical/surgical beds for patients 17-years-old and younger
PHU ¹	Psychiatric	Ward beds on a closed/locked psychiatric unit or ward beds where a patient will be staffed by an attendant. Negative airflow isolation beds.
See Feature	NegativeFlowIsolation	These provide respiratory isolation. NOTE: This value may represent available beds included in the counts of other types Isolation beds.
	OtherIsolation	These provide isolation where airflow is not a concern. NOTE: This value may represent available beds included in the counts of other types
OR ²	OperatingRooms	Operating rooms which are equipped, staffed and could be made available for patient care in a short period of time

Transaction 1

- [Scope](#)
- [Actors Roles](#)
- [Referenced Standards](#)
- [Interactions](#)

This section describes the PULL-TX of this guide. This transaction is used by the Availability Source and Availability Collector actors.

Scope

The Query Availability transaction allows an Availability Collector to periodically query about the availability of a resource from an Availability Source.

Actors Roles

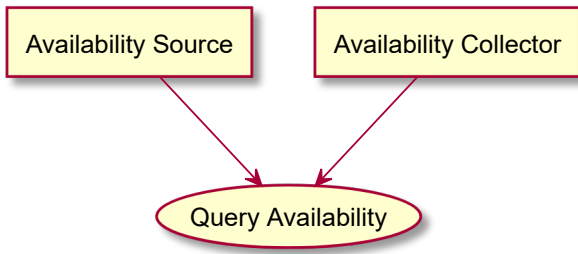


Figure 2.1-1: Query Availability Use Case Diagram

Table 2.1-1: Actor Roles

Actor	Role
Availability Source	Responds to a query, reporting on selected data.
Availability Collector	Collects availability data on a periodic basis

Referenced Standards

Table 3.71.3-1: Referenced Standards

Standard	Name
FHIR-R4	HL7 FHIR Release 4.0
RFC-7230	Hypertext Transfer Protocol - HTTP/1.1

Interactions

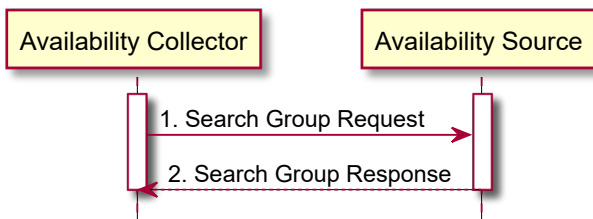


Figure 2.1-2: Query Availability Interactions

Search Group Request

Trigger Event - Periodic Reporting Interval Elapsed

Message Semantics

Expected Actions

An Availability Collector sends a Query to the Availability Source

The Availability Collector sends a query.

Search Group Response

This transaction enables query on the availability of resources.

Trigger Event - A query of Group resources has been requested.

Message Semantics

Expected Actions

Availability Source responds with Bundle

The Availability Source will generate a Bundle of matching Group resources and return it with a 200 OK response.

If there are no matching resources, the Availability Source responds with an empty bundle and a 200 OK response. If errors occur during retrieval, the Availability Source makes a best effort to return what it can and may include an OperationOutcome resource in the response indicating more details about what might be missing. If the retrieval cannot be performed, the Availability Source may return a 4XX error or 5XX error to indicate that an error has occurred.

Transaction 2

- [Scope](#)
- [Actors Roles](#)
- [Referenced Standards](#)
- [Interactions](#)

This section describes the PUSH-TX of this guide. This transaction is used by the Availability Source and Availability Collector actors.

Scope

The Update Availability transaction allows an Availability Source to periodically update the availability of resources to an Availability Collector.

Actors Roles

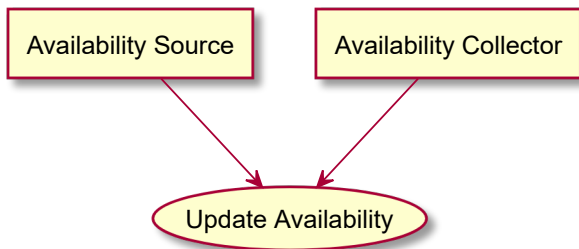


Figure 2.2-1: Update Availability Use Case Diagram

Table 2.2-1: Actor Roles

Actor	Role
Availability Source	Periodically pushes selected data to an Availability Collector.
Availability Collector	Receives availability data on a periodic basis

Referenced Standards

Table 3.71.3-1: Referenced Standards

Standard	Name
FHIR-R4	HL7 FHIR Release 4.0
RFC-7230	Hypertext Transfer Protocol - HTTP/1.1

Interactions

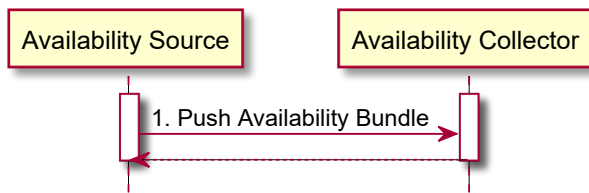


Figure 2.2-2: Update Availability Interactions

Push Availability Bundle

Trigger Event - Periodic Reporting Interval elapsed

Message Semantics

Expected Actions

Availability Source reports a Bundle

The Availability Source posts a Bundle of matching Group resources to the Availability Collector.

If there are no matching resources, the Availability Source reports with an empty bundle. If errors occur during producing the report, the Availability Source makes a best effort to send what it can and may include an OperationOutcome resource in the bundle indicating more details about what might be missing.

The Availability Collector responds with Success

The Availability Collector reports success using 200 OK, 201 Created, or 204 No Content to indicate a successful update.

If an error occurred during the update, the Availability collector should report it using a 4XX or 5XX error depending on the cause.

Transaction 3

- [Scope](#)
- [Actors Roles](#)
- [Referenced Standards](#)
- [Interactions](#)

This section describes the REPORT-TX of this guide. This transaction is used by the Availability Reporter actors.

Scope

The Report Results transaction allows users (e.g., Public Health Officials) to view current resource availability.

Actors Roles



Figure 2.3-1: Report Results Use Case Diagram

Table 2.3-1: Actor Roles

Actor	Role
Availability Reporter	Display reports using availability data

Referenced Standards

Table 3.71.3-1: Referenced Standards

Standard	Name
RFC-7230	Hypertext Transfer Protocol - HTTP/1.1

Interactions

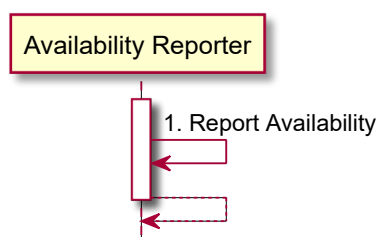


Figure 2.3-2: Report Results Interactions

Report Availability

Trigger Event -

Message Semantics

Expected Actions

Artifacts Summary

Contents:

- [Structures: Resource Profiles](#)
- [Terminology: Value Sets](#)
- [Terminology: Code Systems](#)

This page provides a list of the FHIR artifacts defined as part of this implementation guide.

Structures: Resource Profiles

These define constraints on FHIR resources that need to be complied with by conformant implementations

Bed Group Profile	Defines constraints on the Group Resource for data communicating about Bed availability.
Bed Location Profile	Defines constraints on the Location Resource for data communicating about Beds.
Device Group Profile	Defines constraints on the Group Resource for data communicating about device availability.
Supporting Device Profile	Defines constraints on the Device Resource for data communicating about supporting devices.

Terminology: Value Sets

These define sets of codes used by systems conforming with this implementation guide

[BedFeature](#)[BedLocationOperationalStatus](#)[BedType](#)

Terminology: Code Systems

These define new code systems used by systems conforming with this implementation guide

[Bed Type Coding System](#)

- [Content](#)
- [Detailed Descriptions](#)
- [Mappings](#)
- [Examples](#)
- [XML](#)
- [JSON](#)
- [Turtle](#)

StructureDefinition: BedGroup

Defines constraints on the Group Resource for data communicating about Bed availability.

The official URL for this profile is:

<http://ainq.com/fhir/us/saner/StructureDefinition/saner-bed-group>

Formal Views of Profile Content

[Description of Profiles, Differentials, Snapshots and how the different presentations work.](#)

- [Text Summary](#)
- [Differential Table](#)
- [Snapshot Table](#)
- [All](#)

This structure is derived from [Group](#)

Summary

Mandatory: 9 elements

Fixed Value: 4 elements



Prohibited: 2 elements

Slices

This structure defines the following [Slices](#):

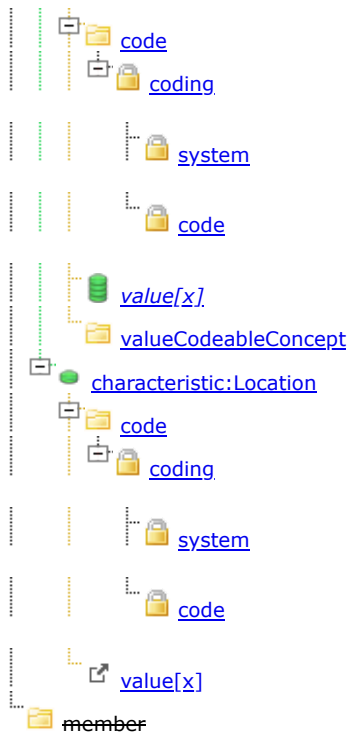
- The element Group.characteristic is sliced based on the value of pattern:code
- The element Group.characteristic.value[x] is sliced based on the value of type:\$this

This structure is derived from [Group](#)

Name	Flags	Card.	Type	Description & Constraints
 Group		0..*	Group	
 type		1..1	code	Fixed Value: device
		1..1	boolean	Fixed Value: true



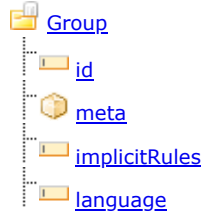
 actual	0..1	CodeableConcept	Required Pattern: At least the following
 code	1..*	Coding	Code defined by a terminology system
 coding			Fixed Value: (complex)
 system	1..1	uri	Identity of the terminology system
 code	1..1	code	Symbol in syntax defined by the system
 name	1..1	string	Fixed Value: bd
 quantity	1..1	unsignedInt	
 managingEntity	1..1	Reference(Organization)	
 identifier	1..1	Identifier	
 system	0..1	uri	Fixed Value: http://hl7.org/fhir/sid/us-npi
 characteristic	5..*	(Slice Definition)	Slice: Unordered, Open by pattern:code
 characteristic:All Slices			Content/Rules for all slices
 exclude	1..1	boolean	Fixed Value: false
 period	0..0		
 characteristic:Status	1..1	BackboneElement	
 code	1..1	CodeableConcept	Required Pattern: At least the following
 coding	1..*	Coding	Code defined by a terminology system
 system	1..1	uri	Identity of the terminology system
 code	1..1	code	Fixed Value: http://hl7.org/fhir/location-definitions.html
 value[x]	1..1	(Slice Definition)	Fixed Value: Location.status
 valueCodeableConcept	0..1	CodeableConcept	Slice: Unordered, Open by type:\$this
 characteristic:OperationalStatus	1..1	BackboneElement	Binding: LocationStatus (required)
 code	1..1	CodeableConcept	Required Pattern: At least the following
 coding	1..*	Coding	Code defined by a terminology system
 system	1..1	uri	Identity of the terminology system
 code	1..1	code	Fixed Value: http://hl7.org/fhir/location-definitions.html
 value[x]	1..1	(Slice Definition)	Fixed Value: Location.operationalStatus
 valueCodeableConcept	0..1	CodeableConcept	Slice: Unordered, Open by type:\$this
 characteristic:Type	1..1	BackboneElement	Binding: BedLocationOperationalStatus (required)
 code	1..1	CodeableConcept	Required Pattern: At least the following
 coding	1..*	Coding	Code defined by a terminology system
 system	1..1	uri	Identity of the terminology system
 code	1..1	code	Fixed Value: http://hl7.org/fhir/location-definitions.html
 value[x]	1..1	(Slice Definition)	Fixed Value: Location.type
 valueCodeableConcept	0..1	CodeableConcept	Slice: Unordered, Open by type:\$this
 characteristic:Feature	1..1	BackboneElement	Binding: V3 Value SetServiceDeliveryLocationRoleType (extensible)



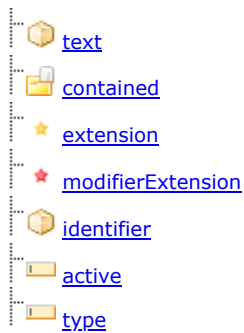
1..1	CodeableConcept	Required Pattern: At least the following
1..*	Coding	Code defined by a terminology system
1..1	uri	Fixed Value: (complex) Identity of the terminology system
1..1	code	Fixed Value: http://hl7.org/fhir/location-definitions.html Symbol in syntax defined by the system
1..1	(Slice Definition)	Fixed Value: Location.Feature Slice: <i>Unordered, Open by type:\$this</i>
0..1	CodeableConcept	Binding: BedFeature (required)
1..1	BackboneElement	
1..1	CodeableConcept	Required Pattern: At least the following
1..*	Coding	Code defined by a terminology system
1..1	uri	Fixed Value: (complex) Identity of the terminology system
1..1	code	Fixed Value: http://hl7.org/fhir/location-definitions.html Symbol in syntax defined by the system
1..1	Reference(Location)	Fixed Value: Location.partOf
0..0		

[Documentation for this format](#)

Name



Flags	Card.	Type	Description & Constraints
I	0..*	Group	Group of multiple entities
Σ	0..1	string	Logical id of this artifact
Σ I	0..1	Meta	Metadata about the resource
?! Σ I	0..1	uri	A set of rules under which this content was created
I	0..1	code	Language of the resource content Binding: CommonLanguages (preferred) Max Binding: AllLanguages
I	0..1	Narrative	Text summary of the resource, for human interpretation
	0..*	Resource	Contained, inline Resources
I	0..*	Extension	Additional content defined by implementations
?! I	0..*	Extension	Extensions that cannot be ignored
Σ I	0..*	Identifier	Unique id
Σ I	0..1	boolean	Whether this group's record is in active use
Σ I	1..1	code	person animal practitioner device medication substance Binding: GroupType (required)
Σ I	1..1	boolean	Fixed Value: device Descriptive or actual
Σ I	0..1	CodeableConcept	Fixed Value: true Kind of Group members Binding: (unbound) (example)
	0..1	string	Required Pattern: At least the following Unique id for inter-element referencing
	0..*	Extension	Additional content defined by implementations
	1..*	Coding	Code defined by a terminology system
	0..1	string	Fixed Value: (complex) Unique id for inter-element referencing



 extension	0..*	Extension	Additional content defined by implementations
 system	1..1	uri	Identity of the terminology system
			Fixed Value: http://terminology.hl7.org/CodeSystem/location-physical-type
 version	0..1	string	Version of the system - if relevant
 code	1..1	code	Symbol in syntax defined by the system
			Fixed Value: bd Representation defined by the system
 display	0..1	string	Representation defined by the system
 userSelected	0..1	boolean	If this coding was chosen directly by the user
 text	0..1	string	Plain text representation of the concept
 name	Σ I	1..1	string Label for Group
 quantity	Σ I	1..1	unsignedInt Number of members
 managingEntity	Σ I	1..1	Reference(Organization) Entity that is the custodian of the Group's definition
 id	0..1	string	Unique id for inter-element referencing
 extension	I	0..*	Extension Additional content defined by implementations
			Slice: Unordered, Open by value:url
 reference	Σ I	0..1	string Literal reference, Relative, internal or absolute URL
 type	Σ I	0..1	uri Type the reference refers to (e.g. "Patient")
			Binding: ResourceType (extensible) Logical reference, when literal reference is not known
 identifier	Σ I	1..1	Identifier Unique id for inter-element referencing
 id	0..1	string	Unique id for inter-element referencing
 extension	I	0..*	Extension Additional content defined by implementations
			Slice: Unordered, Open by value:url
 use	?! Σ I	0..1	code usual official temp secondary old (If known)
 type	Σ I	0..1	CodeableConcept Description of identifier
			Binding: Identifier Use (required)
 system	Σ I	0..1	uri The namespace for the identifier value
			Binding: Identifier Type Codes (extensible) The value that is unique
 value	Σ I	0..1	string The value that is unique
			Fixed Value: http://hl7.org/fhir/sid/us-npi
 period	Σ I	0..1	Period Time period when id is/was valid for use
 assigner	Σ I	0..1	Reference(Organization) Organization that issued id (may be just text)
 display	Σ I	0..1	string Text alternative for the resource
 characteristic	I	5..*	(Slice Definition) <i>Include / Exclude group members by Trait</i>
			Slice: Unordered, Open by pattern:code
 characteristic:All Slices			Content/Rules for all slices
 id	0..1	string	Unique id for inter-element referencing
 extension	I	0..*	Extension Additional content defined by implementations
 modifierExtension	?! Σ I	0..*	Extension Extensions that cannot be ignored even if unrecognized
 code	I	1..1	CodeableConcept Kind of characteristic
			Binding: (unbound) (example) Value held by characteristic
 value[x]	I	1..1	
			Binding: (unbound) (example)
 valueCodeableConcept			CodeableConcept
 valueBoolean			boolean
 valueQuantity			Quantity

	valueRange			Range	
	valueReference			Reference (Any)	
	exclude	I	1..1	boolean	Group includes or excludes Fixed Value: false
	characteristic:Status	I	1..1	BackboneElement	Include / Exclude group members by Trait
	id		0..1	string	Unique id for inter-element referencing
	extension	I	0..*	Extension	Additional content defined by implementations
	modifierExtension	?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
	code	I	1..1	CodeableConcept	Kind of characteristic Binding: (unbound) (example)
	id		0..1	string	Required Pattern: At least the following Unique id for inter-element referencing
	extension		0..*	Extension	Additional content defined by implementations
	coding		1..*	Coding	Code defined by a terminology system Fixed Value: (complex)
	id		0..1	string	Unique id for inter-element referencing
	extension		0..*	Extension	Additional content defined by implementations
	system		1..1	uri	Identity of the terminology system Fixed Value: http://hl7.org/fhir/location-definitions.html
	version		0..1	string	Version of the system - if relevant
	code		1..1	code	Symbol in syntax defined by the system Fixed Value: Location.status
	display		0..1	string	Representation defined by the system
	userSelected		0..1	boolean	If this coding was chosen directly by the user
	text		0..1	string	Plain text representation of the concept
	value[x]	I	1..1	(Slice Definition)	<i>Value held by characteristic</i> Slice: <i>Unordered, Closed by type:\$this</i> Binding: (unbound) (example)
	value[x]:valueCodeableConcept	I	0..1	CodeableConcept	Value held by characteristic Binding: LocationStatus (required)
	exclude	I	1..1	boolean	Group includes or excludes
	period	I	0..1	Period	Period over which characteristic is tested
	characteristic:OperationalStatus	I	1..1	BackboneElement	Include / Exclude group members by Trait
	id		0..1	string	Unique id for inter-element referencing
	extension	I	0..*	Extension	Additional content defined by implementations
	modifierExtension	?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
	code	I	1..1	CodeableConcept	Kind of characteristic Binding: (unbound) (example)
	id		0..1	string	Required Pattern: At least the following Unique id for inter-element referencing
	extension		0..*	Extension	Additional content defined by implementations
	coding		1..*	Coding	Code defined by a terminology system Fixed Value: (complex)
	id		0..1	string	Unique id for inter-element referencing
	extension		0..*	Extension	Additional content defined by implementations
	system		1..1	uri	Identity of the terminology system

	0..1	string	Fixed Value: http://hl7.org/fhir/location-definitions.html Version of the system - if relevant
	1..1	code	Symbol in syntax defined by the system
	0..1	string	Fixed Value: Location.operationalStatus Representation defined by the system
	0..1	boolean	If this coding was chosen directly by the user
	0..1	string	Plain text representation of the concept
	I 1..1	(Slice Definition)	Value held by characteristic Slice: <i>Unordered, Closed by type:\$this</i>
	I 0..1	CodeableConcept	Binding: (unbound) (example) Value held by characteristic
	I 1..1	boolean	Binding: BedLocationOperationalStatus (required) Group includes or excludes
	I 0..1	Period	Period over which characteristic is tested
	I 1..1	BackboneElement	Include / Exclude group members by Trait
	0..1	string	Unique id for inter-element referencing
	I 0..*	Extension	Additional content defined by implementations
	?! Σ I 0..*	Extension	Extensions that cannot be ignored even if unrecognized
	I 1..1	CodeableConcept	Kind of characteristic Binding: (unbound) (example)
	0..1	string	Required Pattern: At least the following Unique id for inter-element referencing
	0..*	Extension	Additional content defined by implementations
	1..*	Coding	Code defined by a terminology system Fixed Value: (complex) Unique id for inter-element referencing
	0..1	string	Unique id for inter-element referencing
	0..*	Extension	Additional content defined by implementations
	1..1	uri	Identity of the terminology system Fixed Value: http://hl7.org/fhir/location-definitions.html Version of the system - if relevant
	0..1	string	Version of the system - if relevant
	1..1	code	Symbol in syntax defined by the system
	0..1	string	Fixed Value: Location.type Representation defined by the system
	0..1	boolean	If this coding was chosen directly by the user
	0..1	string	Plain text representation of the concept
	I 1..1	(Slice Definition)	Value held by characteristic Slice: <i>Unordered, Closed by type:\$this</i>
	I 0..1	CodeableConcept	Binding: (unbound) (example) Value held by characteristic
	I 1..1	boolean	Binding: V3 Value SetServiceDeliveryLocationRoleType (extensible) Group includes or excludes
	I 0..1	Period	Period over which characteristic is tested
	I 1..1	BackboneElement	Include / Exclude group members by Trait
	0..1	string	Unique id for inter-element referencing
	I 0..*	Extension	Additional content defined by implementations
	?! Σ I 0..*	Extension	Extensions that cannot be ignored even if unrecognized

	I	1..1	CodeableConcept	Kind of characteristic
				Binding: (unbound) (example)
				Required Pattern: At least the following
		0..1	string	Unique id for inter-element referencing
		0..*	Extension	Additional content defined by implementations
		1..*	Coding	Code defined by a terminology system
				Fixed Value: (complex)
		0..1	string	Unique id for inter-element referencing
		0..*	Extension	Additional content defined by implementations
		1..1	uri	Identity of the terminology system
				Fixed Value: http://hl7.org/fhir/location-definitions.html
				Version of the system - if relevant
		0..1	string	Symbol in syntax defined by the system
		1..1	code	Symbol in syntax defined by the system
				Fixed Value: Location.Feature
				Representation defined by the system
		0..1	string	Representation defined by the system
		0..1	boolean	If this coding was chosen directly by the user
		0..1	string	Plain text representation of the concept
	I	1..1	(Slice Definition)	Value held by characteristic
				Slice: <i>Unordered, Closed by type:\$this</i>
				Binding: (unbound) (example)
	I	0..1	CodeableConcept	Value held by characteristic
	I	1..1	boolean	Group includes or excludes
	I	0..1	Period	Period over which characteristic is tested
	I	1..1	BackboneElement	Include / Exclude group members by Trait
		0..1	string	Unique id for inter-element referencing
	I	0..*	Extension	Additional content defined by implementations
	?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
	I	1..1	CodeableConcept	Kind of characteristic
				Binding: (unbound) (example)
				Required Pattern: At least the following
		0..1	string	Unique id for inter-element referencing
		0..*	Extension	Additional content defined by implementations
		1..*	Coding	Code defined by a terminology system
				Fixed Value: (complex)
		0..1	string	Unique id for inter-element referencing
		0..*	Extension	Additional content defined by implementations
		1..1	uri	Identity of the terminology system
				Fixed Value: http://hl7.org/fhir/location-definitions.html
				Version of the system - if relevant
		0..1	string	Symbol in syntax defined by the system
		1..1	code	Symbol in syntax defined by the system
				Fixed Value: Location.partOf
				Representation defined by the system
		0..1	string	Representation defined by the system
		0..1	boolean	If this coding was chosen directly by the user
		0..1	string	Plain text representation of the concept
	I	1..1	Reference(Location)	Value held by characteristic



I	1..1	boolean	Group includes or excludes
I	0..1	Period	Period over which characteristic is tested

[? Documentation for this format](#)

This structure is derived from [Group](#)

Summary

Mandatory: 9 elements

Fixed Value: 4 elements

Prohibited: 2 elements

Slices

This structure defines the following [Slices](#):

- The element Group.characteristic is sliced based on the value of pattern:code
- The element Group.characteristic.value[x] is sliced based on the value of type:\$this

Differential View



This structure is derived from [Group](#)

Name	Flags	Card.	Type	Description & Constraints
Group		0..*	Group	
type		1..1	code	Fixed Value: device
actual		1..1	boolean	Fixed Value: true
code		0..1	CodeableConcept	Required Pattern: At least the following
coding		1..*	Coding	Code defined by a terminology system
system		1..1	uri	Fixed Value: (complex) Identity of the terminology system
code		1..1	code	Fixed Value: http://terminology.hl7.org/CodeSystem/location-physical-type Symbol in syntax defined by the system
name		1..1	string	Fixed Value: bd
quantity		1..1	unsignedInt	
managingEntity		1..1	Reference(Organization)	
identifier		1..1	Identifier	
system		0..1	uri	Fixed Value: http://hl7.org/fhir/sid/us-npi
characteristic		5..*	(Slice Definition)	Slice: Unordered, Open by pattern:code
characteristic:All Slices				Content/Rules for all slices
exclude		1..1	boolean	Fixed Value: false
period		0..0		
characteristic:Status		1..1	BackboneElement	
code		1..1	CodeableConcept	Required Pattern: At least the following
coding		1..*	Coding	Code defined by a terminology system
system		1..1	uri	Fixed Value: (complex) Identity of the terminology system
code		1..1	code	Fixed Value: http://hl7.org/fhir/location-definitions.html Symbol in syntax defined by the system

 code	1..1	(Slice Definition)	Fixed Value: Location.status Slice: <i>Unordered, Open by type:\$this</i>
 value[x]	0..1	CodeableConcept	Binding: LocationStatus (required)
 valueCodeableConcept	1..1	BackboneElement	
 characteristic:OperationalStatus	1..1	CodeableConcept	Required Pattern: At least the following
 code	1..*	Coding	Code defined by a terminology system
 coding			Fixed Value: (complex) Identity of the terminology system
 system	1..1	uri	Fixed Value: http://hl7.org/fhir/location-definitions.html Symbol in syntax defined by the system
 code	1..1	code	Fixed Value: Location.operationalStatus Slice: <i>Unordered, Open by type:\$this</i>
 value[x]	0..1	CodeableConcept	Binding: BedLocationOperationalStatus (required)
 valueCodeableConcept	1..1	BackboneElement	
 characteristic:Type	1..1	CodeableConcept	Required Pattern: At least the following
 code	1..*	Coding	Code defined by a terminology system
 coding			Fixed Value: (complex) Identity of the terminology system
 system	1..1	uri	Fixed Value: http://hl7.org/fhir/location-definitions.html Symbol in syntax defined by the system
 code	1..1	code	Fixed Value: Location.type Slice: <i>Unordered, Open by type:\$this</i>
 value[x]	0..1	CodeableConcept	Binding: V3 Value SetServiceDeliveryLocationRoleType (extensible)
 valueCodeableConcept	1..1	BackboneElement	
 characteristic:Feature	1..1	CodeableConcept	Required Pattern: At least the following
 code	1..*	Coding	Code defined by a terminology system
 coding			Fixed Value: (complex) Identity of the terminology system
 system	1..1	uri	Fixed Value: http://hl7.org/fhir/location-definitions.html Symbol in syntax defined by the system
 code	1..1	code	Fixed Value: Location.Feature Slice: <i>Unordered, Open by type:\$this</i>
 value[x]	0..1	CodeableConcept	Binding: BedFeature (required)
 valueCodeableConcept	1..1	BackboneElement	
 characteristic:Location	1..1	CodeableConcept	Required Pattern: At least the following
 code	1..*	Coding	Code defined by a terminology system
 coding			Fixed Value: (complex) Identity of the terminology system
 system	1..1	uri	Fixed Value: http://hl7.org/fhir/location-definitions.html Symbol in syntax defined by the system
 code	1..1	code	Fixed Value: Location.partOf
 value[x]	1..1	Reference (Location)	
 member	0..0		

 [Documentation for this format](#)

Snapshot View

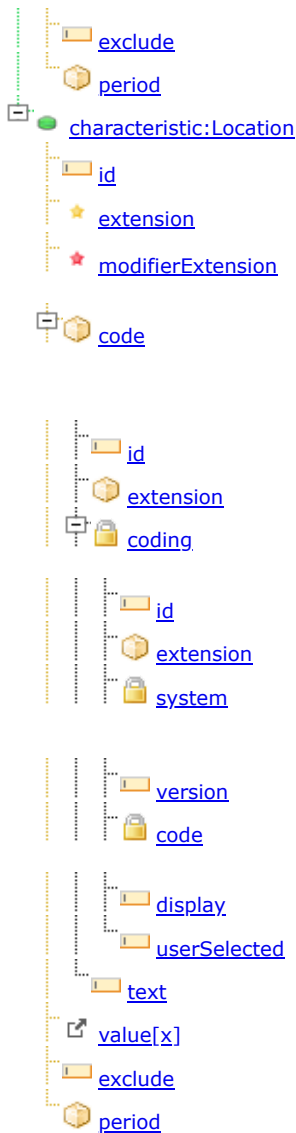
Name	Flags	Card.	Type	Description & Constraints	
 Group	I	0..*	Group	Group of multiple entities	
	Σ	0..1	string	Logical id of this artifact	

	id	Σ I	0..1	Meta	Metadata about the resource
	meta	?! Σ I	0..1	uri	A set of rules under which this content was created
	implicitRules	I	0..1	code	Language of the resource content
	language				Binding: CommonLanguages (preferred)
	text	I	0..1	Narrative	Max Binding: AllLanguages Text summary of the resource, for human interpretation
	contained		0..*	Resource	Contained, inline Resources
	extension	I	0..*	Extension	Additional content defined by implementations
	modifierExtension	?! I	0..*	Extension	Extensions that cannot be ignored
	identifier	Σ I	0..*	Identifier	Unique id
	active	Σ I	0..1	boolean	Whether this group's record is in active use
	type	Σ I	1..1	code	person animal practitioner device medication substance
					Binding: GroupType (required)
	actual	Σ I	1..1	boolean	Fixed Value: device Descriptive or actual
	code	Σ I	0..1	CodeableConcept	Fixed Value: true Kind of Group members
					Binding: (unbound) (example)
	id		0..1	string	Required Pattern: At least the following Unique id for inter-element referencing
	extension		0..*	Extension	Additional content defined by implementations
	coding		1..*	Coding	Code defined by a terminology system
	id		0..1	string	Fixed Value: (complex) Unique id for inter-element referencing
	extension		0..*	Extension	Additional content defined by implementations
	system		1..1	uri	Identity of the terminology system
					Fixed Value: http://terminology.hl7.org/CodeSystem/location-physical-type Version of the system - if relevant
	version		0..1	string	Version of the system - if relevant
	code		1..1	code	Symbol in syntax defined by the system
					Fixed Value: bd Representation defined by the system
	display		0..1	string	Representation defined by the system
	userSelected		0..1	boolean	If this coding was chosen directly by the user
	text		0..1	string	Plain text representation of the concept
	name	Σ I	1..1	string	Label for Group
	quantity	Σ I	1..1	unsignedInt	Number of members
	managingEntity	Σ I	1..1	Reference(Organization)	Entity that is the custodian of the Group's definition
	id		0..1	string	Unique id for inter-element referencing
	extension	I	0..*	Extension	Additional content defined by implementations
					Slice: Unordered, Open by value:url
	reference	Σ I	0..1	string	Literal reference, Relative, internal or absolute URL
	type	Σ I	0..1	uri	Type the reference refers to (e.g. "Patient")
	identifier	Σ I	1..1	Identifier	Binding: ResourceType (extendible) Logical reference, when literal reference is not known
	id		0..1	string	Unique id for inter-element referencing
		I	0..*	Extension	Additional content defined by implementations

extension					Slice: Unordered, Open by value:url
use	?! Σ I	0..1	code		usual official temp secondary old (If known)
type	Σ I	0..1	CodeableConcept		Binding: IdentifierUse (required) Description of identifier
system	Σ I	0..1	uri		Binding: Identifier Type Codes (extensible) The namespace for the identifier value
value	Σ I	0..1	string		Fixed Value: http://hl7.org/fhir/sid/us-npi The value that is unique
period	Σ I	0..1	Period		Example General: 123456 Time period when id is/was valid for use
assigner	Σ I	0..1	Reference(Organization)		Organization that issued id (may be just text)
display	Σ I	0..1	string		Text alternative for the resource
characteristic	I	5..*	(Slice Definition)		<i>Include / Exclude group members by Trait</i> Slice: Unordered, Open by pattern:code Content/Rules for all slices
characteristic:All Slices					
id		0..1	string		Unique id for inter-element referencing
extension	I	0..*	Extension		Additional content defined by implementations
modifierExtension	?! Σ I	0..*	Extension		Extensions that cannot be ignored even if unrecognized
code	I	1..1	CodeableConcept		Kind of characteristic
value[x]	I	1..1			Binding: (unbound) (example) Value held by characteristic
valueCodeableConcept			CodeableConcept		
valueBoolean			boolean		
valueQuantity			Quantity		
valueRange			Range		
valueReference			Reference(Any)		
exclude	I	1..1	boolean		Group includes or excludes
characteristic:Status	I	1..1	BackboneElement		Fixed Value: false Include / Exclude group members by Trait
id		0..1	string		Unique id for inter-element referencing
extension	I	0..*	Extension		Additional content defined by implementations
modifierExtension	?! Σ I	0..*	Extension		Extensions that cannot be ignored even if unrecognized
code	I	1..1	CodeableConcept		Kind of characteristic
					Binding: (unbound) (example)
id		0..1	string		Required Pattern: At least the following Unique id for inter-element referencing
extension		0..*	Extension		Additional content defined by implementations
coding		1..*	Coding		Code defined by a terminology system
					Fixed Value: (complex) Unique id for inter-element referencing
id		0..1	string		Unique id for inter-element referencing
extension		0..*	Extension		Additional content defined by implementations
system		1..1	uri		Identity of the terminology system
					Fixed Value: http://hl7.org/fhir/location-definitions.html Version of the system - if relevant
version		0..1	string		Version of the system - if relevant
code		1..1	code		Symbol in syntax defined by the system

	0..1	string		Fixed Value: Location.status Representation defined by the system
	0..1	boolean		If this coding was chosen directly by the user
	0..1	string		Plain text representation of the concept
	I	1..1	(Slice Definition)	Value held by characteristic
				Slice: <i>Unordered, Closed by type:\$this</i>
				Binding: (unbound) (example) Value held by characteristic
	I	0..1	CodeableConcept	
	I	1..1	boolean	
	I	0..1	Period	Period over which characteristic is tested
	I	1..1	BackboneElement	Include / Exclude group members by Trait
	0..1	string		Unique id for inter-element referencing
	I	0..*	Extension	Additional content defined by implementations
	?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
	I	1..1	CodeableConcept	Kind of characteristic
				Binding: (unbound) (example)
	0..1	string		Required Pattern: At least the following Unique id for inter-element referencing
	0..*	Extension		Additional content defined by implementations
	1..*	Coding		Code defined by a terminology system
	0..1	string		Fixed Value: (complex) Unique id for inter-element referencing
	0..*	Extension		Additional content defined by implementations
	1..1	uri		Identity of the terminology system
				Fixed Value: http://hl7.org/fhir/location-definitions.html Version of the system - if relevant
	0..1	string		Version of the system - if relevant
	1..1	code		Symbol in syntax defined by the system
	0..1	string		Fixed Value: Location.operationalStatus Representation defined by the system
	0..1	boolean		If this coding was chosen directly by the user
	0..1	string		Plain text representation of the concept
	I	1..1	(Slice Definition)	Value held by characteristic
				Slice: <i>Unordered, Closed by type:\$this</i>
				Binding: (unbound) (example) Value held by characteristic
	I	0..1	CodeableConcept	
	I	1..1	boolean	
	I	0..1	Period	Period over which characteristic is tested
	I	1..1	BackboneElement	Include / Exclude group members by Trait
	0..1	string		Unique id for inter-element referencing
	I	0..*	Extension	Additional content defined by implementations
	?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
	I	1..1	CodeableConcept	Kind of characteristic
				Binding: (unbound) (example)
				Required Pattern: At least the following

	0..1	string	Unique id for inter-element referencing
	0..*	Extension	Additional content defined by implementations
	1..*	Coding	Code defined by a terminology system
			Fixed Value: (complex) Unique id for inter-element referencing
	0..1	string	Unique id for inter-element by implementations
	0..*	Extension	Additional content defined by implementations
	1..1	uri	Identity of the terminology system
			Fixed Value: http://hl7.org/fhir/location-definitions.html Version of the system - if relevant
	0..1	string	Symbol in syntax defined by the system
	1..1	code	Symbol in syntax defined by the system
			Fixed Value: Location.type Representation defined by the system
	0..1	string	Representation defined by the system
	0..1	boolean	If this coding was chosen directly by the user
	0..1	string	Plain text representation of the concept
	I	1..1	(Slice Definition) Value held by characteristic
			Slice: Unordered, Closed by type:\$this
	I	0..1	CodeableConcept Value held by characteristic
			Binding: (unbound) (example)
	I	1..1	boolean Group includes or excludes
	I	0..1	Period Period over which characteristic is tested
	I	1..1	BackboneElement Include / Exclude group members by Trait
		0..1	string Unique id for inter-element referencing
	I	0..*	Extension Additional content defined by implementations
	?! Σ I	0..*	Extension Extensions that cannot be ignored even if unrecognized
	I	1..1	CodeableConcept Kind of characteristic
			Binding: (unbound) (example)
			Required Pattern: At least the following Unique id for inter-element referencing
	0..1	string	Unique id for inter-element referencing
	0..*	Extension	Additional content defined by implementations
	1..*	Coding	Code defined by a terminology system
			Fixed Value: (complex) Unique id for inter-element referencing
	0..1	string	Unique id for inter-element referencing
	0..*	Extension	Additional content defined by implementations
	1..1	uri	Identity of the terminology system
			Fixed Value: http://hl7.org/fhir/location-definitions.html Version of the system - if relevant
	0..1	string	Symbol in syntax defined by the system
	1..1	code	Symbol in syntax defined by the system
			Fixed Value: Location.Feature Representation defined by the system
	0..1	string	Representation defined by the system
	0..1	boolean	If this coding was chosen directly by the user
	0..1	string	Plain text representation of the concept
	I	1..1	(Slice Definition) Value held by characteristic
			Slice: Unordered, Closed by type:\$this
	I	0..1	CodeableConcept Value held by characteristic
			Binding: (unbound) (example)



I	1..1	boolean	Binding: BedFeature (required) Group includes or excludes
I	0..1	Period	Period over which characteristic is tested
I	1..1	BackboneElement	Include / Exclude group members by Trait
	0..1	string	Unique id for inter-element referencing
I	0..*	Extension	Additional content defined by implementations
?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
I	1..1	CodeableConcept	Kind of characteristic
			Binding: (unbound) (example)
	0..1	string	Required Pattern: <i>At least the following</i> Unique id for inter-element referencing
	0..*	Extension	Additional content defined by implementations
	1..*	Coding	Code defined by a terminology system
	0..1	string	Fixed Value: (complex) Unique id for inter-element referencing
	0..*	Extension	Additional content defined by implementations
	1..1	uri	Identity of the terminology system
			Fixed Value: http://hl7.org/fhir/location-definitions.html
	0..1	string	Version of the system - if relevant
	1..1	code	Symbol in syntax defined by the system
			Fixed Value: Location.partOf Representation defined by the system
	0..1	boolean	If this coding was chosen directly by the user
	0..1	string	Plain text representation of the concept
I	1..1	Reference(Location)	Value held by characteristic
I	1..1	boolean	Group includes or excludes
I	0..1	Period	Period over which characteristic is tested

[? Documentation for this format](#)

Other representations of profile: [Schematron](#)

Terminology Bindings

Terminology Bindings

Path

Group.language

Group.type

Group.code

Group.managingEntity.type

Group.managingEntity.identifier.use

Group.managingEntity.identifier.type

Group.characteristic.code

Group.characteristic.value[x]

Conformance ValueSet / Code

[CommonLanguages](#)

[preferred](#)

Max Binding: [AllLanguages](#)

[required](#)

Fixed Value: device

[example](#)

Pattern: [bd](#)

[extensible](#)

[ResourceType](#)

[required](#)

[IdentifierUse](#)

[extensible](#)

[Identifier Type Codes](#)

[example](#)

[example](#)

Group.characteristic:Status.code	example	Pattern: Location.status
Group.characteristic:Status.value[x]	example	
Group.characteristic:Status.value[x]:valueCodeableConcept	required	LocationStatus
Group.characteristic:OperationalStatus.code	example	Pattern: Location.operationalStatus
Group.characteristic:OperationalStatus.value[x]	example	
Group.characteristic:OperationalStatus.value[x]:valueCodeableConcept	required	BedLocationOperationalStatus
Group.characteristic:Type.code	example	Pattern: Location.type
Group.characteristic:Type.value[x]	example	
Group.characteristic:Type.value[x]:valueCodeableConcept	extensible	v3.ServiceDeliveryLocationRoleType
Group.characteristic:Feature.code	example	Pattern: Location.Feature
Group.characteristic:Feature.value[x]	example	
Group.characteristic:Feature.value[x]:valueCodeableConcept	required	BedFeature
		Pattern: Location.partOf

Constraints

Constraints

Group.characteristic:Location.code	example	Id	Path	Details	Requirements
------------------------------------	-------------------------	-----------	-------------	----------------	---------------------

IG © 2020+ [Audacious Inquiry](#).
 Package ainq.fhir.us.saner#0.1.0
 based on [FHIR 4.0.1](#). Generated
 2020-03-23

Links: [Table of Contents](#) | [QA Report](#)

- [Content](#)
- [Detailed Descriptions](#)
- [Mappings](#)
- [Examples](#)
- [XML](#)
- [JSON](#)
- [Turtle](#)

StructureDefinition: BedLocation

Defines constraints on the Location Resource for data communicating about Beds.

The official URL for this profile is:

<http://ainq.com/fhir/us/saner/StructureDefinition/saner-bed-location>

Formal Views of Profile Content

[Description of Profiles, Differentials, Snapshots and how the different presentations work.](#)

- [Text Summary](#)
- [Differential Table](#)
- [Snapshot Table](#)
- [All](#)

This structure is derived from [Location](#)

Summary

This structure is derived from [Location](#)

Name **Flags** **Card.** **Type** **Description & Constraints** ?

[Location](#) 0..* [Location](#)

? [Documentation for this format](#)

Name **Flags** **Card.** **Type** **Description & Constraints** ?

	Location		I	0..*	Location	Details and position information for a physical place
	id		Σ	0..1	string	Logical id of this artifact
	meta		Σ I	0..1	Meta	Metadata about the resource
	implicitRules		?! Σ I	0..1	uri	A set of rules under which this content was created
	language		I	0..1	code	Language of the resource content Binding: CommonLanguages (preferred) Max Binding: AllLanguages
	text		I	0..1	Narrative	Text summary of the resource, for human interpretation
	contained			0..*	Resource	Contained, inline Resources
	extension		I	0..*	Extension	Additional content defined by implementations
	modifierExtension		?! I	0..*	Extension	Extensions that cannot be ignored
	identifier		Σ I	0..*	Identifier	Unique code or number identifying the location to its users
	status		?! Σ I	0..1	code	active suspended inactive Binding: LocationStatus (required) The operational status of the location (typically only for a bed/room)
	operationalStatus		Σ I	0..1	Coding	Binding: v2 BED STATUS (preferred) Name of the location as used by humans
	name		Σ I	0..1	string	A list of alternate names that the location is known as, or was known as, in the past
	alias		I	0..*	string	Additional details about the location that could be displayed as further information to identify the location beyond its name
	description		Σ I	0..1	string	instance kind Binding: LocationMode (required) Type of function performed
	mode		Σ I	0..1	code	Binding: V3 Value SetServiceDeliveryLocationRoleType (extensible)
	type		Σ I	0..*	CodeableConcept	Contact details of the location
	telecom		I	0..*	ContactPoint	Physical location
	address		I	0..1	Address	Physical form of the location
	physicalType		Σ I	0..1	CodeableConcept	Binding: LocationType (example) The absolute geographic location
	position		I	0..1	BackboneElement	Unique id for inter-element referencing
	id			0..1	string	Additional content defined by implementations
	extension		I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
	modifierExtension		?! Σ I	0..*	Extension	Longitude with WGS84 datum
	longitude		I	1..1	decimal	Latitude with WGS84 datum
	latitude		I	1..1	decimal	Altitude with WGS84 datum
	altitude		I	0..1	decimal	Organization responsible for provisioning and upkeep
	managingOrganization		Σ I	0..1	Reference(Organization)	Another Location this one is physically a part of
	partOf		I	0..1	Reference(Location)	What days/times during a week is this location usually open
	hoursOfOperation		I	0..*	BackboneElement	Unique id for inter-element referencing
	id			0..1	string	Additional content defined by implementations
	extension		I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
	extension		?! Σ I	0..*	Extension	

modifierExtension	I	0..*	code	mon tue wed thu fri sat sun
daysOfWeek				
allDay	I	0..1	boolean	The Location is open all day
openingTime	I	0..1	time	Time that the Location opens
closingTime	I	0..1	time	Time that the Location closes
availabilityExceptions	I	0..1	string	Description of availability exceptions
endpoint	I	0..*	Reference(Endpoint)	Technical endpoints providing access to services operated for the location

Binding: [DaysOfWeek](#) (required)

[? Documentation for this format](#)

This structure is derived from [Location](#)

Summary

Differential View

This structure is derived from [Location](#)

Name	Flags	Card.	Type	Description & Constraints ?
Location		0..*	Location	

[? Documentation for this format](#)

Snapshot View

Name	Flags	Card.	Type	Description & Constraints ?
Location	I	0..*	Location	Details and position information for a physical place
id	Σ	0..1	string	Logical id of this artifact
meta	Σ I	0..1	Meta	Metadata about the resource
implicitRules	?! Σ I	0..1	uri	A set of rules under which this content was created
language	I	0..1	code	Language of the resource content
				Binding: CommonLanguages (preferred)
				Max Binding: AllLanguages
text	I	0..1	Narrative	Text summary of the resource, for human interpretation
contained		0..*	Resource	Contained, inline Resources
extension	I	0..*	Extension	Additional content defined by implementations
modifierExtension	?! I	0..*	Extension	Extensions that cannot be ignored
identifier	Σ I	0..*	Identifier	Unique code or number identifying the location to its users
status	?! Σ I	0..1	code	active suspended inactive
				Binding: LocationStatus (required)
operationalStatus	Σ I	0..1	Coding	The operational status of the location (typically only for a bed/room)
				Binding: v2 BED STATUS (preferred)
name	Σ I	0..1	string	Name of the location as used by humans
alias	I	0..*	string	A list of alternate names that the location is known as, or was known as, in the past
description	Σ I	0..1	string	Additional details about the location that could be displayed as further information to identify the location beyond its name
mode	Σ I	0..1	code	instance kind
				Binding: LocationMode (required)
type	Σ I	0..*	CodeableConcept	Type of function performed

Binding: [V3 Value SetServiceDeliveryLocationRoleType \(extensible\)](#)

telecom	I	0..*	ContactPoint	Contact details of the location
address	I	0..1	Address	Physical location
physicalType	Σ I	0..1	CodeableConcept	Physical form of the location
position	I	0..1	BackboneElement	Binding: LocationType (example) The absolute geographic location
id		0..1	string	Unique id for inter-element referencing
extension	I	0..*	Extension	Additional content defined by implementations
modifierExtension	?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
longitude	I	1..1	decimal	Longitude with WGS84 datum
latitude	I	1..1	decimal	Latitude with WGS84 datum
altitude	I	0..1	decimal	Altitude with WGS84 datum
managingOrganization	Σ I	0..1	Reference(Organization)	Organization responsible for provisioning and upkeep
partOf	I	0..1	Reference(Location)	Another Location this one is physically a part of
hoursOfOperation	I	0..*	BackboneElement	What days/times during a week is this location usually open
id		0..1	string	Unique id for inter-element referencing
extension	I	0..*	Extension	Additional content defined by implementations
modifierExtension	?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
daysOfWeek	I	0..*	code	mon tue wed thu fri sat sun
				Binding: DaysOfWeek (required)
allDay	I	0..1	boolean	The Location is open all day
openingTime	I	0..1	time	Time that the Location opens
closingTime	I	0..1	time	Time that the Location closes
availabilityExceptions	I	0..1	string	Description of availability exceptions
endpoint	I	0..*	Reference(Endpoint)	Technical endpoints providing access to services operated for the location

[Documentation for this format](#)

Other representations of profile: [Schematron](#)

Terminology Bindings

Terminology Bindings

Path	Conformance	ValueSet
Location.language	preferred	CommonLanguages
Location.status	required	LocationStatus
Location.operationalStatus	preferred	v2.0116
Location.mode	required	LocationMode
Location.type	extensible	v3.ServiceDeliveryLocationRoleType
Location.physicalType	example	LocationType
Location.hoursOfOperation.daysOfWeek	required	DaysOfWeek

Constraints

Constraints

Id Path Details Requirements

- [Content](#)
- [Detailed Descriptions](#)
- [Mappings](#)
- [Examples](#)
- [XML](#)
- [JSON](#)
- [Turtle](#)

StructureDefinition: DeviceGroup

Defines constraints on the Group Resource for data communicating about device availability.

The official URL for this profile is:

<http://ainq.com/fhir/us/saner/StructureDefinition/saner-device-group>

Formal Views of Profile Content

[Description of Profiles, Differentials, Snapshots and how the different presentations work.](#)

- [Text Summary](#)
- [Differential Table](#)
- [Snapshot Table](#)
- [All](#)









This structure is derived from [Group](#)

Summary

This structure is derived from [Group](#)

Name	Flags	Card.	Type	Description & Constraints ?
 Group		0..*	Group	

 [Documentation for this format](#)

Name	Flags	Card.	Type	Description & Constraints ?
 Group	I	0..*	Group	Group of multiple entities
 id	Σ	0..1	string	Logical id of this artifact
 meta	Σ I	0..1	Meta	Metadata about the resource
 implicitRules	?! Σ I	0..1	uri	A set of rules under which this content was created
 language	I	0..1	code	Language of the resource content
Binding: CommonLanguages (preferred)				
 text	I	0..1	Narrative	Max Binding: AllLanguages Text summary of the resource, for human interpretation
 contained		0..*	Resource	Contained, inline Resources
 extension	I	0..*	Extension	Additional content defined by implementations
 modifierExtension	?! I	0..*	Extension	Extensions that cannot be ignored

identifier	Σ I	0..*	Identifier	Unique id
active	Σ I	0..1	boolean	Whether this group's record is in active use
type	Σ I	1..1	code	person animal practitioner device medication substance
actual	Σ I	1..1	boolean	Binding: GroupType (required) Descriptive or actual
code	Σ I	0..1	CodeableConcept	Kind of Group members
name	Σ I	0..1	string	Binding: (unbound) (example) Label for Group
quantity	Σ I	0..1	unsignedInt	Number of members
managingEntity	Σ I	0..1	Reference (Organization RelatedPerson Practitioner PractitionerRole)	Entity that is the custodian of the Group's definition
characteristic	I	0..*	BackboneElement	Include / Exclude group members by Trait
id		0..1	string	Unique id for inter-element referencing
extension	I	0..*	Extension	Additional content defined by implementations
modifierExtension	?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
code	I	1..1	CodeableConcept	Kind of characteristic
value[x]	I	1..1		Binding: (unbound) (example) Value held by characteristic
valueCodeableConcept			CodeableConcept	
valueBoolean			boolean	
valueQuantity			Quantity	
valueRange			Range	
valueReference			Reference (Any)	
exclude	I	1..1	boolean	Group includes or excludes
period	I	0..1	Period	Period over which characteristic is tested
member	I	0..*	BackboneElement	Who or what is in group
id		0..1	string	Unique id for inter-element referencing
extension	I	0..*	Extension	Additional content defined by implementations
modifierExtension	?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
entity	I	1..1	Reference (Patient Practitioner PractitionerRole Device Medication Substance Group)	Reference to the group member
period	I	0..1	Period	Period member belonged to the group
inactive	I	0..1	boolean	If member is no longer in group

[Documentation for this format](#)

This structure is derived from [Group](#)

Summary

Differential View







This structure is derived from [Group](#)

Name	Flags	Card.	Type	Description & Constraints
Group		0..*	Group	

[? Documentation for this format](#)

Snapshot View

Name	Flags	Card.	Type	Description & Constraints
Group	I	0..*	Group	Group of multiple entities
id	Σ	0..1	string	Logical id of this artifact
meta	Σ I	0..1	Meta	Metadata about the resource
implicitRules	?! Σ I	0..1	uri	A set of rules under which this content was created
language	I	0..1	code	Language of the resource content
				Binding: CommonLanguages (preferred)
text	I	0..1	Narrative	Max Binding: AllLanguages Text summary of the resource, for human interpretation
contained		0..*	Resource	Contained, inline Resources
extension	I	0..*	Extension	Additional content defined by implementations
modifierExtension	?! I	0..*	Extension	Extensions that cannot be ignored
identifier	Σ I	0..*	Identifier	Unique id
active	Σ I	0..1	boolean	Whether this group's record is in active use
type	Σ I	1..1	code	person animal practitioner device medication substance
				Binding: GroupType (required)
actual	Σ I	1..1	boolean	Descriptive or actual
code	Σ I	0..1	CodeableConcept	Kind of Group members
name	Σ I	0..1	string	Binding: (unbound) (example) Label for Group
quantity	Σ I	0..1	unsignedInt	Number of members
managingEntity	Σ I	0..1	Reference(Organization RelatedPerson Practitioner PractitionerRole)	Entity that is the custodian of the Group's definition
characteristic	I	0..*	BackboneElement	Include / Exclude group members by Trait
id		0..1	string	Unique id for inter-element referencing
extension	I	0..*	Extension	Additional content defined by implementations
modifierExtension	?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
code	I	1..1	CodeableConcept	Kind of characteristic
value[x]	I	1..1		Binding: (unbound) (example) Value held by characteristic
valueCodeableConcept			CodeableConcept	
valueBoolean			boolean	
valueQuantity			Quantity	
valueRange			Range	
valueReference			Reference(Any)	
exclude	I	1..1	boolean	Group includes or excludes
period	I	0..1	Period	Period over which characteristic is tested
member	I	0..*	BackboneElement	Who or what is in group
		0..1	string	Unique id for inter-element

 id					referencing
 extension	I	0..*	Extension		Additional content defined by implementations
 modifierExtension	?!	Σ I 0..*	Extension		Extensions that cannot be ignored even if unrecognized
 entity	I	1..1	Reference (Patient Practitioner PractitionerRole Device Medication Substance Group)		Reference to the group member
 period	I	0..1	Period		Period member belonged to the group
 inactive	I	0..1	boolean		If member is no longer in group

 [Documentation for this format](#)

Other representations of profile: [Schematron](#)

Terminology Bindings

Terminology Bindings

Path	Conformance	ValueSet
Group.language	preferred	CommonLanguages
Group.type	required	Max Binding: AllLanguages
Group.code	example	GroupType
Group.characteristic.code	example	
Group.characteristic.value[x]	example	

Constraints

Constraints

Id Path Details Requirements

- [Content](#)
- [Detailed Descriptions](#)
- [Mappings](#)
- [Examples](#)
- [XML](#)
- [JSON](#)
- [Turtle](#)

StructureDefinition: SupportingDevice

Defines constraints on the Device Resource for data communicating about supporting devices.

The official URL for this profile is:

<http://ainq.com/fhir/us/saner/StructureDefinition/saner-supporting-device>

Formal Views of Profile Content

[Description of Profiles, Differentials, Snapshots and how the different presentations work.](#)

- [Text Summary](#)
- [Differential Table](#)
- [Snapshot Table](#)
- [All](#)

This structure is derived from [Location](#)

Summary

This structure is derived from [Location](#)

Name	Flags	Card.	Type	Description & Constraints ?
Location		0..*	Location	
? Documentation for this format				
Name	Flags	Card.	Type	Description & Constraints ?
Location		I	Location	Details and position information for a physical place
id		Σ	string	Logical id of this artifact
meta		Σ I	Meta	Metadata about the resource
implicitRules		?! Σ I	uri	A set of rules under which this content was created
language		I	code	Language of the resource content Binding: CommonLanguages (preferred)
text		I	Narrative	Max Binding: AllLanguages Text summary of the resource, for human interpretation
contained			0..* Resource	Contained, inline Resources
extension		I	Extension	Additional content defined by implementations
modifierExtension		?! I	Extension	Extensions that cannot be ignored
identifier		Σ I	Identifier	Unique code or number identifying the location to its users
status		?! Σ I	code	active suspended inactive Binding: LocationStatus (required) The operational status of the location (typically only for a bed/room)
operationalStatus		Σ I	Coding	Binding: v2 BED STATUS (preferred) Name of the location as used by humans
name		Σ I	string	A list of alternate names that the location is known as, or was known as, in the past
alias		I	string	
description		Σ I	string	Additional details about the location that could be displayed as further information to identify the location beyond its name
mode		Σ I	code	instance kind Binding: LocationMode (required) Type of function performed
type		Σ I	CodeableConcept	Binding: V3 Value SetServiceDeliveryLocationRoleType (extensible)
telecom		I	ContactPoint	Contact details of the location
address		I	Address	Physical location
physicalType		Σ I	CodeableConcept	Physical form of the location
position		I	BackboneElement	Binding: LocationType (example) The absolute geographic location
id			0..1 string	Unique id for inter-element referencing
extension		I	Extension	Additional content defined by implementations
modifierExtension		?! Σ I	Extension	Extensions that cannot be ignored even if unrecognized
longitude		I	1..1 decimal	Longitude with WGS84 datum
latitude		I	1..1 decimal	Latitude with WGS84 datum

altitude	I	0..1	decimal	Altitude with WGS84 datum
managingOrganization	Σ I	0..1	Reference(Organization)	Organization responsible for provisioning and upkeep
partOf	I	0..1	Reference(Location)	Another Location this one is physically a part of
hoursOfOperation	I	0..*	BackboneElement	What days/times during a week is this location usually open
id		0..1	string	Unique id for inter-element referencing
extension	I	0..*	Extension	Additional content defined by implementations
modifierExtension	?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
daysOfWeek	I	0..*	code	mon tue wed thu fri sat sun Binding: DaysOfWeek (required)
allDay	I	0..1	boolean	The Location is open all day
openingTime	I	0..1	time	Time that the Location opens
closingTime	I	0..1	time	Time that the Location closes
availabilityExceptions	I	0..1	string	Description of availability exceptions
endpoint	I	0..*	Reference(Endpoint)	Technical endpoints providing access to services operated for the location

[Documentation for this format](#)

This structure is derived from [Location](#)

Summary

Differential View

This structure is derived from [Location](#)

Name	Flags	Card.	Type	Description & Constraints
Location		0..*	Location	

[Documentation for this format](#)

Snapshot View

Name	Flags	Card.	Type	Description & Constraints
Location	I	0..*	Location	Details and position information for a physical place
id	Σ	0..1	string	Logical id of this artifact
meta	Σ I	0..1	Meta	Metadata about the resource
implicitRules	?! Σ I	0..1	uri	A set of rules under which this content was created
language	I	0..1	code	Language of the resource content Binding: CommonLanguages (preferred)
text	I	0..1	Narrative	Max Binding: AllLanguages Text summary of the resource, for human interpretation
contained		0..*	Resource	Contained, inline Resources
extension	I	0..*	Extension	Additional content defined by implementations
modifierExtension	?! I	0..*	Extension	Extensions that cannot be ignored
identifier	Σ I	0..*	Identifier	Unique code or number identifying the location to its users
status	?! Σ I	0..1	code	active suspended inactive Binding: LocationStatus (required)
operationalStatus	Σ I	0..1	Coding	The operational status of the location (typically only for a bed/room) Binding: v2 BED STATUS (preferred)

 name	Σ I	0..1	string	Name of the location as used by humans
 alias	I	0..*	string	A list of alternate names that the location is known as, or was known as, in the past
 description	Σ I	0..1	string	Additional details about the location that could be displayed as further information to identify the location beyond its name instance kind
 mode	Σ I	0..1	code	
 type	Σ I	0..*	CodeableConcept	Binding: LocationMode (required) Type of function performed
 telecom	I	0..*	ContactPoint	Contact details of the location
 address	I	0..1	Address	Physical location
 physicalType	Σ I	0..1	CodeableConcept	Physical form of the location
 position	I	0..1	BackboneElement	Binding: LocationType (example) The absolute geographic location
 id		0..1	string	Unique id for inter-element referencing
 extension	I	0..*	Extension	Additional content defined by implementations
 modifierExtension	?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
 longitude	I	1..1	decimal	Longitude with WGS84 datum
 latitude	I	1..1	decimal	Latitude with WGS84 datum
 altitude	I	0..1	decimal	Altitude with WGS84 datum
 managingOrganization	Σ I	0..1	Reference(Organization)	Organization responsible for provisioning and upkeep
 partOf	I	0..1	Reference(Location)	Another Location this one is physically a part of
 hoursOfOperation	I	0..*	BackboneElement	What days/times during a week is this location usually open
 id		0..1	string	Unique id for inter-element referencing
 extension	I	0..*	Extension	Additional content defined by implementations
 modifierExtension	?! Σ I	0..*	Extension	Extensions that cannot be ignored even if unrecognized
 daysOfWeek	I	0..*	code	mon tue wed thu fri sat sun
 allDay	I	0..1	boolean	The Location is open all day
 openingTime	I	0..1	time	Time that the Location opens
 closingTime	I	0..1	time	Time that the Location closes
 availabilityExceptions	I	0..1	string	Description of availability exceptions
 endpoint	I	0..*	Reference(Endpoint)	Technical endpoints providing access to services operated for the location

 [Documentation for this format](#)

Other representations of profile: [Schematron](#)

Terminology Bindings

Terminology Bindings

Path

Location.language

Conformance ValueSet

[CommonLanguages](#)

[preferred](#)

Max Binding: [AllLanguages](#)

Location.status	required	LocationStatus
Location.operationalStatus	preferred	v2.0116
Location.mode	required	LocationMode
Location.type	extensible	v3.ServiceDeliveryLocationRoleType
Location.physicalType	example	LocationType
Location.hoursOfOperation.daysOfWeek	required	DaysOfWeek

Constraints

Constraints

Id **Path Details Requirements**

BedFeature

Summary

Defining URL: <http://ainq.com/fhir/us/saner/ValueSet/BedFeature>

Version: 0.1.0

Name: BedFeature

Status: Active

Publisher: Audacious Inquiry

Source Resource: [XML](#) / [JSON](#) / [Turtle](#)

References

- [Bed Group Profile](#)

Content Logical Definition

Definition

- Include these codes as defined in <http://ainq.com/fhir/us/saner/CodeSystem/SanerBedType>

Code	Display
NEGISO	Negative Pressure Isolation Unit Beds in a negative pressure isolation environment
OTHISO	Other Isolation Unit Beds in an other (non-negative pressure) isolation environment
NONISO	Non-isolating unit Bed in a unit that does not support isolation

Expansion

This value set contains 3 concepts

Expansion based on <http://ainq.com/fhir/us/saner/CodeSystem/SanerBedType> version 0.1.0

All codes from system <http://ainq.com/fhir/us/saner/CodeSystem/SanerBedType>

Code	Display	Definition
NEGISO	Negative Pressure Isolation Unit	Beds in a negative pressure isolation environment
OTHISO	Other Isolation Unit	Beds in an other (non-negative pressure) isolation environment
NONISO	Non-isolating unit	Bed in a unit that does not support isolation

Explanation of the columns that may appear on this page:

Level	A few code lists that FHIR defines are hierarchical - each code is assigned a level. In this scheme, some codes are under other codes, and imply that the code they are under also applies
Source	The source of the definition of the code (when the value set draws in codes defined elsewhere)
Code	The code (used as the code in the resource instance)
Display	The display (used in the <i>display</i> element of a Coding). If there is no display, implementers should not simply display the code, but map the concept into their application
Definition	An explanation of the meaning of the concept
Comments	Additional notes about how to use the code

BedLocationOperationalStatus

Summary

Defining URL: <http://ainq.com/fhir/us/saner/ValueSet/BedLocationOperationalStatus>
 Version: 0.1.0
 Name: BedLocationOperationalStatus
 Status: Active
 Publisher: Audacious Inquiry
 Source Resource: [XML](#) / [JSON](#) / [Turtle](#)

References

- [Bed Group Profile](#)

Content Logical Definition

Definition

- Import all the codes that are contained in <http://terminology.hl7.org/ValueSet/v2-0116>
- Exclude these codes as defined in <http://terminology.hl7.org/CodeSystem/v2-0116>

Code Display

[I](#) Isolated

This value set includes codes based on the following rules:

Expansion

This value set contains 5 concepts

Expansion based on <http://terminology.hl7.org/ValueSet/v2-0116> version 2.9, <http://terminology.hl7.org/CodeSystem/v2-0116> version 2.9

All codes from system <http://terminology.hl7.org/CodeSystem/v2-0116>

Code Display	Definition
C	Closed
H	Housekeeping
K	Contaminated
O	Occupied

U Unoccupied

Explanation of the columns that may appear on this page:

Level	A few code lists that FHIR defines are hierarchical - each code is assigned a level. In this scheme, some codes are under other codes, and imply that the code they are under also applies
Source	The source of the definition of the code (when the value set draws in codes defined elsewhere)
Code	The code (used as the code in the resource instance)
Display	The display (used in the <i>display</i> element of a Coding). If there is no display, implementers should not simply display the code, but map the concept into their application
Definition	An explanation of the meaning of the concept
Comments	Additional notes about how to use the code

BedType

Summary

Defining URL:	http://ainq.com/fhir/us/saner/ValueSet/BedType
Version:	0.1.0
Name:	BedType
Status:	Active
Publisher:	Audacious Inquiry
Source Resource:	XML / JSON / Turtle

References

This value set is not used

Content Logical Definition

Definition

- Include these codes as defined in <http://terminology.hl7.org/CodeSystem/v3-RoleCode>

Code	Display	
ICU	Intensive care unit	Intensive care unit
PEDICU	Pediatric intensive care unit	Pediatric intensive care unit
PEDNICU	Pediatric neonatal intensive care unit	Pediatric neonatal intensive care unit
ER	Emergency room	The section of a health care facility for providing rapid treatment to victims of sudden illness or trauma.
HU	Hospital unit	Hospital unit
RHU	Rehabilitation hospital unit	Rehabilitation hospital unit
PEDU	Pediatric unit	Pediatric unit
PHU	Psychiatric hospital unit	(X12N 273R00000N)

- Include these codes as defined in <http://ainq.com/fhir/us/saner/CodeSystem/SanerBedType>

Code	Display	
OR	Operating Room	Operating Rooms
NURSERY	Nursery	Neonatal or newborn (non-ICU) care beds
BURNU	Burn Unit	Burn ICU beds

This value set includes codes based on the following rules:

Expansion

This value set contains 11 concepts

Expansion based on <http://terminology.hl7.org/CodeSystem/v3-RoleCode> version 2018-08-12,
<http://ainq.com/fhir/us/saner/CodeSystem/SanerBedType> version 0.1.0

Code	System	Display	Definition
ICU	http://terminology.hl7.org/CodeSystem/v3-RoleCode	Intensive care unit	Intensive care unit
PEDICU	http://terminology.hl7.org/CodeSystem/v3-RoleCode	Pediatric intensive care unit	Pediatric intensive care unit
PEDNICU	http://terminology.hl7.org/CodeSystem/v3-RoleCode	Pediatric neonatal intensive care unit	Pediatric neonatal intensive care unit
ER	http://terminology.hl7.org/CodeSystem/v3-RoleCode	Emergency room	The section of a health care facility for providing rapid treatment to victims of sudden illness or trauma.
HU	http://terminology.hl7.org/CodeSystem/v3-RoleCode	Hospital unit	Hospital unit
RHU	http://terminology.hl7.org/CodeSystem/v3-RoleCode	Rehabilitation hospital unit	Rehabilitation hospital unit
PEDU	http://terminology.hl7.org/CodeSystem/v3-RoleCode	Pediatric unit	Pediatric unit
PHU	http://terminology.hl7.org/CodeSystem/v3-RoleCode	Psychiatric hospital unit	(X12N 273R00000N)
OR	http://ainq.com/fhir/us/saner/CodeSystem/SanerBedType	Operating Room	Operating Rooms
NURSERY	http://ainq.com/fhir/us/saner/CodeSystem/SanerBedType	Nursery	Neonatal or newborn (non-ICU) care beds
BURNU	http://ainq.com/fhir/us/saner/CodeSystem/SanerBedType	Burn Unit	Burn ICU beds

Explanation of the columns that may appear on this page:

Level	A few code lists that FHIR defines are hierarchical - each code is assigned a level. In this scheme, some codes are under other codes, and imply that the code they are under also applies
Source	The source of the definition of the code (when the value set draws in codes defined elsewhere)
Code	The code (used as the code in the resource instance)
Display	The display (used in the <i>display</i> element of a Coding). If there is no display, implementers should not simply display the code, but map the concept into their application
Definition	An explanation of the meaning of the concept
Comments	Additional notes about how to use the code

Bed Type Coding System

Summary

Defining URL:	http://ainq.com/fhir/us/saner/CodeSystem/SanerBedType
Version:	0.1.0
Name:	SanerBedType
Title:	Bed Type Coding System

Status: Active
Content: All the concepts defined by the code system are included in the code system resource
Publisher: Audacious Inquiry
Source Resource: [XML](#) / [JSON](#) / [Turtle](#)

This Code system is referenced in the content logical definition of the following value sets:

- [BedFeature](#)
- [BedType](#)

Bed Type Coding System

This code system <http://ainq.com/fhir/us/saner/CodeSystem/SanerBedType> defines the following codes:

Code	Display	Definition
OR	Operating Room	Operating Rooms
NURSERY	Nursery	Neonatal or newborn (non-ICU) care beds
BURNU	Burn Unit	Burn ICU beds
NEGISO	Negative Pressure Isolation Unit	Beds in a negative pressure isolation environment
OTHISO	Other Isolation Unit	Beds in an other (non-negative pressure) isolation environment
NONISO	Non-isolating unit	Bed in a unit that does not support isolation

IG © 2020+ [Audacious Inquiry](#). Package ainq.fhir.us.saner#0.1.0 based on [FHIR 4.0.1](#). Generated 2020-03-23

Links: [Table of Contents](#) | [QA Report](#)