

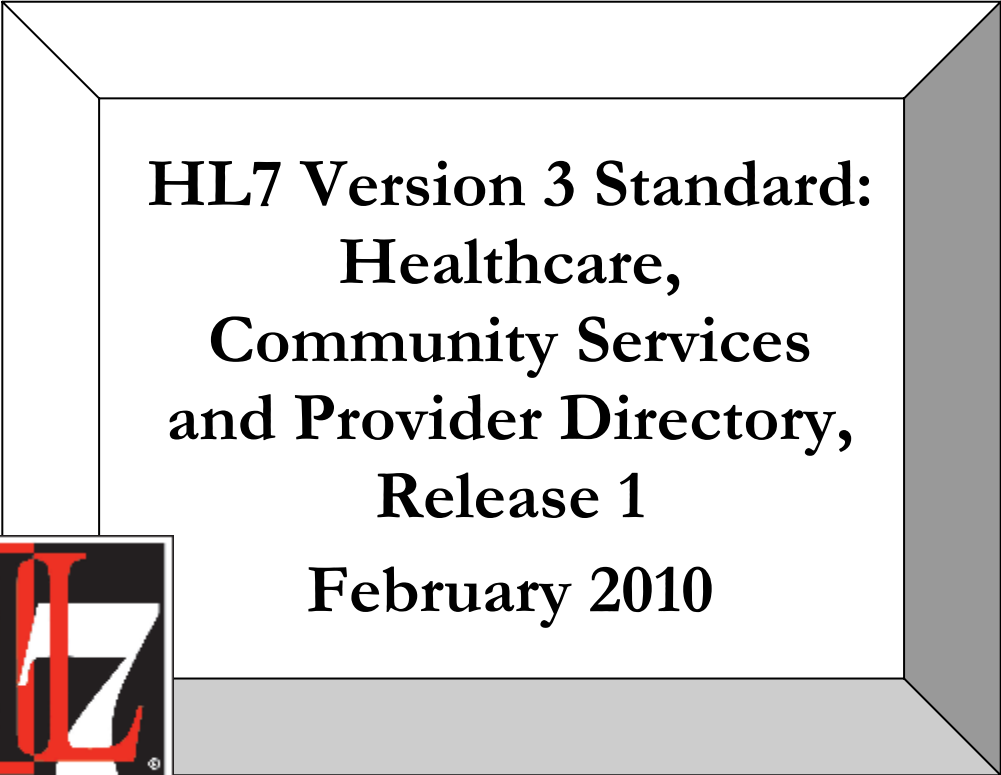


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HL7 Version 3 Standard: Healthcare, Community Services
and Provider Directory, Release 1

A Service Model Specification

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HL7 Version 3 Standard: Healthcare, Community Services and Provider Directory, Release 1 February 2010



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Preface

Notes to Readers

This document is the Service Functional Model (SFM) for the Healthcare, Community Services and Provider Directory which is specified under the Service Specification Framework process under the auspices of the Healthcare Services Specification Project (HSSP).

Further context is given in the overview section below, but one key point to note is that the SFM provides a Service **Interface** specification, NOT the specification of a service implementation. This is a critical distinction in terms of Service Oriented Architecture. There could be many different ways of implementing all or part of the functionality to support the behaviour described in this specification.

Changes from Previous Release

This is the Fourth public release of this document. It contains further Use Cases and general profile information with an overall tidy up.

Acknowledgements

In addition to the listed authors, the following individuals are acknowledged for their contributions during the development of this specification.

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Table of Contents

1	OVERVIEW	7
1.1	INTRODUCTION.....	7
1.1.1	<i>HL7-OMG Healthcare Services Specification Project (HSSP)</i>	7
1.1.2	<i>Context of this SFM within HSSP Roadmap</i>	8
1.1.3	<i>Context and Relationship of this SFM within HL7</i>	8
2	SERVICE OVERVIEW AND BUSINESS CASE.....	9
2.1	SERVICE OVERVIEW.....	9
2.1.1	<i>Service Description and Purpose</i>	9
2.1.2	<i>Scope of the Service</i>	11
2.1.3	<i>The reason why the service is necessary</i>	12
2.2	STRUCTURE OF THE SERVICE	12
2.2.1	<i>Interfaces</i>	12
2.3	IMPLEMENTATION CONSIDERATIONS.....	12
3	BUSINESS SCENARIOS	13
3.1	ACTORS	13
3.2	USE CASES	14
3.2.1	<i>Business Use Cases</i>	14
3.3	SCENARIOS.....	21
3.3.1	<i>Scenario 1 - Referral between organisations</i>	21
3.3.2	<i>Scenario 2 – Telephone Triage</i>	21
3.3.3	<i>Scenario 3 - Determine eligibility</i>	21
3.3.4	<i>Scenario 4 – Determine Availability for Referral</i>	22
3.3.5	<i>Scenario 5 – Determine Availability of Testing Equipment</i>	22
4	SERVICE DEFINITION AND DEPENDENCIES	22
4.1	SERVICE DEFINITION PRINCIPLES	22
4.2	OVERALL PRE-CONDITIONS, DEPENDENCIES, AND/OR “OUT OF SCOPE STATEMENTS”	23
5	DETAILED FUNCTIONAL MODEL FOR EACH INTERFACE	24
5.1	ADMINISTRATION FUNCTIONS.....	25
5.1.1	<i>Add a Provider / Organization demographics</i>	25
5.1.2	<i>Update a Provider / Provider Organization demographics</i>	27
5.1.3	<i>Relate a Provider to Provider Organization</i>	29
5.1.4	<i>Disassociate a Provider from a Provider Organization</i>	30
5.1.5	<i>Add a Location</i>	32
5.1.6	<i>Update a Location</i>	32
5.1.7	<i>Relate an Organization to a Location</i>	34
5.1.8	<i>Disassociate an Organisation from a Location</i>	34
5.1.9	<i>Relate a Provider To a Location</i>	36
5.1.10	<i>Disassociate a Provider from a Location</i>	37
5.1.11	<i>Add a Resource</i>	38
5.1.12	<i>Update a Resource</i>	39
5.1.13	<i>Relate a Resource to a Location</i>	40
5.1.14	<i>Disassociate a Resource from a Location</i>	41
5.1.15	<i>Delete an Organization</i>	42
5.1.16	<i>Delete a Provider</i>	43
5.2	MAINTENANCE FUNCTIONS.....	45
5.2.1	<i>Add A Resource Allocation</i>	45

5.2.2	<i>Remove A Resource Allocation</i>	47
5.2.3	<i>Add A Resource Calendar</i>	48
5.2.4	<i>Update A Resource Calendar</i>	49
5.2.5	<i>Add an Organization Calendar</i>	50
5.2.6	<i>Update An Organization Calendar</i>	51
5.2.7	<i>Add A Provider Calendar</i>	52
5.2.8	<i>Update a Provider Calendar</i>	53
5.2.9	<i>Add A Provider Allocation</i>	54
5.2.10	<i>Update a Provider Allocation</i>	55
5.3	CONTENT MANAGER MAINTENANCE	56
5.4	QUERY FUNCTIONS	57
5.4.1	<i>Service & Provider Directory Lookup</i>	57
6	PROFILES	58
6.1	INTRODUCTION	58
6.2	CASES	58
6.2.1	<i>Profile Case One</i>	58
6.2.2	<i>Profile Case Two</i>	59
6.2.3	<i>Functional Profiles</i>	60
6.2.4	<i>Semantic Profiles</i>	61
7	USER SCENARIO INTERACTION DETAILS [OPTIONAL]	61
8	THE SERVICES FRAMEWORK FUNCTIONAL MODEL	61
9	INFORMATION MODEL AND SEMANTIC BINDING APPROACH	61
9.1	DOMAIN ANALYSIS MODEL (INFORMATIVE)	63
9.2	SERVICE COMPONENT STRUCTURE	64
10	DOMAIN ANALYSIS MODEL FUNCTIONAL USE	65
10.1	PROVIDER:	65
10.2	AGENCY/ORGANISATION:	66
10.3	LOCATION:	67
10.4	RESOURCE:	67
11	PROFILE GUIDANCE – E-REFERRAL FUNCTIONAL USE	68
12	PROFILE GUIDANCE – WAIT-LIST MANAGEMENT	68
13	RECOMMENDATIONS FOR TECHNICAL RFP ISSUANCE	69
14	GLOSSARY	69
15	APPENDIX A - RELEVANT STANDARDS AND REFERENCE CONTENT	73
16	APPENDIX B - HL7 EHR FUNCTIONAL MODEL TRACEABILITY	74
17	APPENDIX C – HSD DATA DICTIONARY	75
17.1.1	<i>Agency:</i>	75
17.1.2	<i>Agency Name:</i>	75
17.1.3	<i>Agency Address:</i>	76
17.1.4	<i>Agency Contact Point:</i>	77
17.1.5	<i>Agency Specialty:</i>	78
17.1.6	<i>Agency Identifier:</i>	78
17.1.7	<i>Agency Availability:</i>	79
17.1.8	<i>Agency Service Site:</i>	79

17.1.9	Agency Service Provider:.....	80
17.1.10	Agency Service Site Address:	80
17.1.11	Agency Site Contact Point:	81
17.1.12	Service Provider:.....	82
17.1.13	Service Provider Name:	82
17.1.14	Service Provider Address:	83
17.1.15	Service Provider Contact Point:.....	84
17.1.16	Service Provider Identifier:.....	84
17.1.17	Service Provider Credential:.....	85
17.1.18	Service Provider Qualifications:	86
17.1.19	Service Provider Practice/Service:.....	86
17.1.20	Service Provider Site Specialty:.....	87
17.1.21	Service Provider Language:.....	87
17.1.22	Service Provider License / Registration:	88
17.1.23	Service Provider Service Site:.....	88
17.1.24	Service Provider Site Role:.....	89
17.1.25	Service Provider Referral Method:	89
17.1.26	Service Site Provider Referral Method:	89
17.1.27	Service Site Provider Contact Point:.....	90
17.1.28	Service Site:	91
17.1.29	Service Site Geographical Coordinates:	91
17.1.30	Service Site Contact Point:	92
17.1.31	Service Site Address:.....	93
17.1.32	Service Site Referral Method:.....	94
17.1.33	Service Site Instance Characteristic:	94
17.1.34	Service Site Identifier:.....	95
17.1.35	Service Site Target Group:.....	95
17.1.36	Service Site Setting:	96
17.1.37	Agency Service Site Catchment Area:.....	96
17.1.38	Service Site Availability:.....	97
17.1.39	Service Site Resource:.....	97
17.1.40	Provider Service Site Availability:.....	98
17.1.41	Service Site Resource Availability:.....	98
17.1.42	Resource:	99
17.1.43	Resource Restricted Availability:	99
17.1.44	Resource Instance Capability Characteristic:	100
17.1.45	Resource Identifier:	100
17.1.46	Site Resource Booking:.....	101
17.1.47	Provider Service Site Booking:	101

Note that sections of this document in <blue> indicate text that is consistent across HSSP specifications

1 Overview

1.1 Introduction

1.1.1 HL7-OMG Healthcare Services Specification Project (HSSP)

The Healthcare Services Specification Project (HSSP) [<http://hssp.wikispaces.com>] is a joint endeavour between Health Level Seven (HL7) [<http://www.hl7.org>] and the Object Management Group (OMG) [<http://www.omg.org>]. The HSSP was chartered at the January 2005 HL7 meeting under the Electronic Health Records Technical Committee, and the Board of Directors of both organizations subsequently validated the project.

The HSSP has several objectives. These objectives include the following:

- To stimulate the adoption and use of standardized “plug-and-play” services by healthcare software product vendors;
- To facilitate the development of a set of implementable interface standards supporting agreed-upon services specifications to form the basis for provider purchasing and procurement decisions; and,
- To complement and not conflict with existing HL7 work products and activities, leveraging content and lessons learned from elsewhere within the organization.

Within this process, HL7 has primary responsibility for:

- (1) identifying and prioritizing services as candidates for standardization;
- (2) specifying the functional requirements and conformance criteria for these services in the form of Service Functional Model (SFM) specifications such as this document; and
- (3) adopting these SFMs as balloted HL7 standards.

These activities are coordinated by the HL7 Services Oriented Architecture SIG in collaboration with other HL7 committees which currently include the Vocabulary TC and the Clinical Decision Support TC.

Based on the HL7 SFMs, the OMG will develop “Requests for Proposals” (RFPs) that are the basis of the OMG standardization process. This process allows vendors, and other submitters, to propose solutions that satisfy the mandatory and optional requirements expressed in the RFP, while leaving design flexibility to the submitters and implementation flexibility to the users of the standard. The result of this collaboration is an RFP Submission, which will be referred to in the HSSP process as a Service Technical Model (STM). HL7 members content and concerns are integral to this process, and will be explicitly included in the RFP creation and evaluation process.

It is important to note that the HL7 SFM documents will focus on specifying the functional requirements of a service, while OMG specifications will focus on specifying the technical interface requirements of a service. In many cases, SFMs will also describe an overall coherent set of functional capabilities. These capabilities may be specialized or subdivided from both

functional and informational (semantic) perspectives to provide specific “profiles” that may be used as the basis for the OMG RFPs and/or implemented.

1.1.2 Context of this SFM within HSSP Roadmap

As described above, the purpose of an HL7 SFM is to identify and document the functional requirements of services important to healthcare. Accordingly, this particular SFM seeks to define the functional requirements of a Healthcare, Community Services, and Provider Directory Service (Referred to from here on as Human Services Directory or HSD).

There are many different interoperability scenarios between Service Providers, Service Provider Organisations, and Consumers (such as e-Referral), which require access to a directory of Services and/or Providers to establish what services and locations are available when and to whom.

HSD will provide an important foundation component for many healthcare interoperability scenarios, both within and across organizations. Although in many business scenarios it may be used in conjunction with other services, it has been specified to provide stand-alone capabilities.

Note: throughout this document, a clear distinction will be maintained between the concept of “Healthcare Services”, which are the actual services delivered to patients by providers and provider organizations, and computerized (or IT) services provided within a Service Oriented Architecture (SOA). In particular, this service will be referred to by the acronym HSD wherever possible.

1.1.3 Context and Relationship of this SFM within HL7

In terms of publishing, it is intended that this specification will appear in the “Services” section of the HL7 V3 publication, along with other IT Services, such as RLUS, EIS and CDS. The relationship of IT Service definitions to the message definition work traditionally carried out under the V3 banner will continue to be refined. This will involve joint sessions between the HL7 SOA WG and MnM Committees, and potential changes to the overall V3 guide. In the mean time, this section identifies the relationship of this specific specification with HL7 V3 artefacts.

SOA and Messaging offer an alternative paradigm for implementing similar functionality. It is beyond the scope of this document to consider the merits of each approach. However, both paradigms use information content structures known as “messages”. Where both messaging and SOA based solutions are provided in a similar functional space, they must be based on the same conceptual information model. What may differ is the way that the information is “chunked” and the overall granularity of the message content. This alignment is achieved through the use of “semantic profiles” which are based on (i.e. use content extracted from) existing RIM based domain models. An example of this is given in Section 6 below.

This specification (along with other HSSP specifications) provides a separation of function from information content. This allows for different content models to be used within the same interface constructs. This has the advantage of enabling simpler version upgrades (e.g. when new RIM or domain model versions appear the functional specification does not have to change), but

also allows organizations the flexibility of using semantic profiles based on other content models, e.g. HL7 V2 message constructs or non-HL7 content¹.

The Directory Service will assist in the support of Collaborative Care and the establishing and promotion of Shared Care. Specific functions that would be supported are such as Referrals between Service Providers and Hospital Discharges, but the Services Directory would also have a role in assisting Care Coordination. These activities are covered by the HL7 Domains of Patient Administration and Patient Care, and have particular relevance to the Community Based Collaborative Care (formerly Community Based Health Services) Special Interest Group.

2 Service Overview and Business case

2.1 Service Overview

2.1.1 Service Description and Purpose

Human Services
Directory

-eReferral

- Waitlist
management

- Provider registry

Human Services Directory provides key capabilities to enable practitioners, via a set of parameters, to locate other practitioners to assist in the continuum of care. Effective referral is an integral part of patient/client care. This enables the right treatment and/or diagnosis to be given at the right place at the right time. To date many attempts have been made, by many organizations throughout the world, to create effective Service (as in Healthcare Services) Directories, with very little success.

Ensuring effective referral takes place means medical errors and unnecessary complications can be avoided. This creates better outcomes for the client, practitioner and the Health/Welfare System.

During a consultation/examination, the practitioner decides assistance is required to ensure the optimum care for the patient/client. In accessing the patient/client's record via the patient/client administration system, the practitioner requests a referral according to expertise, availability and location. A list of entities that represent the specified criteria is presented to the practitioner. Upon selection of a suitable provider, the appropriate detail is supplied to assist in the creation of a Referral.

Similarly, during the process of discharging a patient from hospital, the designated physician will describe a list of services to be provided to assist in rehabilitation. The hospital patient administration system can then access online details of suitable services providers for selection for referral.

Human Services Directory is based on a directory of information relating to organizations and individuals that provide services in the areas of Healthcare, Aged Care and Community Care.

¹ This document presents a data model for illustrative purposes. The data model presents structures that are assumed to describe implementations of Electronic Health Records registries: Provider, Location, Agency, and Resource. The additional data required by eReferral / Waitlist management services is identified outside of those registries. There is no requirement within this specification to implement the data model shown – its role is to aid understanding of the services presented and is therefore both illustrative and informative.

This information can then be selected and provided to other applications based on parameters supplied to the service.

Typically these parameters would be based on Healthcare Service Type or Organisation Name or Provider Name and Town or Suburb. Other optional parameters will be such things as out of hours, current bookings, and languages spoken. This will return all matches to the requesting application.

If the request is for a referral, then the service will expect the selection of a provider/organisation to be made and be passed back to the service. The service will then interface to other IT Services as required for security or other reasons. However HSD must support other requirements, such as Public Viewing, Hospital Discharges and Call Centre Support. The aim is to have one Healthcare Services Directory for a jurisdiction(s) that gives a comprehensive and accurate description on the Healthcare Services available to that community.

Within a jurisdiction that is friendly to resource allocation as it applies to specialists and specialized equipment, the concept of the Health Services Directory can take on an even larger role in the delivery of healthcare.

In Canada for example, wait-list management is an important consideration. As the doctor population decreases due to the demographic character of the aging baby-boom generation, it becomes ever more important to ensure that specialists are well utilized. An under-utilized resource in one area most often means a waitlist in some other area. Large centres experience long wait times to see specialists or to make use of expensive testing equipment, while those same resources in a less populated area may be less affected.

The health services directory, when extended to hold information about current availability of providers and equipment, can then become the basis for a much wider service which can:

- 1) Identify not only where, but when, a specialist or special piece of equipment or both, is available for booking
- 2) Provide for on-line booking of the resources should that be desired

This provides the patient with options with respect to their treatment, and promises to reduce overall wait-times, while increasing provider utilization.

In order to accomplish this, the existing health services registry model being used within Australia needs to be extended to allow:

- 1) More precise office hour specification.
The current model provides for a single opening and closing time to be applied to all days when the provider site is open for business. This should be expanded to allow for a varying schedule by day, or to accommodate even more varied hours of operation on a schedule basis.
- 2) The specification of resources should provide for a different schedule than the office hours (may vary from strict public reception times.)
- 3) Bookings should be recorded by resource (whether provider or equipment or both) and bookings should allow for different parameter-driven block sizes based on resource (for example: a physician may book times in 15-minute intervals where-as a specialized piece of equipment may be booked on a hourly basis (dialysis for example.)

- 4) Resources may have blackout times: machines may require preventive maintenance; persons have vacation times and other personal or professional times away.
- 5) Functionality would have to be provided through a web interface and through standards-based messaging, to manage the resource booking times including: add a time for a resource; book a time for a resource; cancel a booking for a resource; manage a resource schedule.

The directory service will be a client to all functions with the exception of when it is providing extra services (such as provider authentication and obtaining encryption tokens) for the creation of the referral message. During this process it will be providing a service-to-service function. The service will be able to search its data based on parameters supplied by the requesting application. All matches will be returned to the application.

The above descriptions in this section are illustrations while the service being specified is canonical and can be leveraged into a variety of organizational contexts or needs that is at the discretion of the implementer or consumer and these are minimal limitations inherent in the specification that do not preclude its use in a variety of contexts.

2.1.2 Scope of the Service

eReferral

HSD will provide look up capabilities for healthcare services and providers that may be used, or provide support for, many functions in addition to practitioner referral. There are the requirements for public access (self referral), call centre support, and non-direct healthcare services to name a few.

Waitlist management

A side-benefit of such a service is the ability to better manage wait times. This is especially required for specialists and expensive testing equipment such as MRIs. By referring a patient to an **available** provider, the patient may receive service faster, and providers across the board will be better utilized. This does require that the service locations identify calendar slots and maintain accuracy of availability data, but the benefits to individual providers (more patients) and the community at large (shorter wait time with less adverse impact on health) are significant.

Provider confidentiality

HSD supports all of these functions while maintaining appropriate security and integrity. Practitioner ‘provider numbers’, for example, are often required by the hospital discharge departments, but are rarely visible to external parties. . Some institutions wish to withhold certain practitioner details and only authorised individuals can update specific information. Where possible, HSD should access other IT Services to provide supplementary information and functionality, such as Encryption Keys, Digital Signatures and Provider Authentication.

Secure communication of Patient Data

The only things that would be excluded from the scope are other services and functions that have not yet been developed/implemented.

2.1.3 The reason why the service is necessary

A Healthcare Service Directory is an integral component of true e-Referral (i.e. Client/Patient Management System to Client/Patient Management System). Not only does it allow the practitioner to expediently find an appropriate and available provider to whom to refer his client, but it can also provide many other benefits, such as system address and security profiles, all at the finger-tip or push of a button.

Vendors of client and patient management systems will merely have to include simple functionality to access HSD instances rather than build in their own functionality, which includes searching algorithms and data management.

Customers will ultimately see improved levels of service and hence better care. Imagine walking out of the GP's surgery, not only with the referral information but a confirmed appointment as well!

2.2 Structure of the Service

2.2.1 Interfaces

HSD defines three categories of interface:

- Administrative Functions
- Maintenance Functions
- Query Functions

Each of these interfaces and their operations are described in detail in Section 5 below.

As with other HSSP services, the interfaces and capabilities are designed to provide functional capabilities that may support different methods of representing information content. The HSSP method for achieving this specialization is to define "Semantic Profiles", which are identified in Section 6. This specialization will identify the specific information models that are supported. For example, this allows for representation of Provider or Healthcare Service information using different information models, e.g. HL7 RIM based or OpenEHR archetypes.

Inherent in HSSP specifications is the ability to create *service profiles* that allow bodies or organizations to enumerate the specific semantics and related behaviour needed to support targeted business objectives. Conformance and compliance pertaining to the standard is done with respect to these service profiles. This version of the specification does not include any specific *service profiles*, though it is envisioned that many detailed specifications profiles will be both developed and defined at later stages. Participants in the technical specification process may elect to define additional profiles.

2.3 Implementation Considerations

It is anticipated that the directory service will be accessed via secure Web Services though this is but one means of implementation. In a similar fashion it will access other services required to effectively support such things as e-Referral.

From a technical perspective interfaces to the service are fairly standard. The real consideration and challenge will be in obtaining and maintaining the content of the Directory. As businesses (Service Provider Organisations) open & close, change location, change business model and/or change staff they need to be located and the Directory Service database altered to reflect the current situation. Similarly for individuals who change jobs, change vocations or retire,

Appropriate infrastructure, models & methodologies must be developed and established to support the reliable capture of this information.

Matters pertaining to the infrastructure, in which this service would be deployed, such as the security architecture, is beyond the scope of this specification.

3 Business Scenarios

3.1 Actors

Consumer An individual (patient/client/service user) who has or will receive healthcare services. The consumer may self-refer to a service.

Service provider An individual practitioner or an organisation licensed or credentialed to administer healthcare services.

Referring service provider A service provider who is referring the consumer to another service provider.

Referred to service provider A service provider who is receiving a referred consumer from another service provider.

Duty worker A healthcare professional who registers a consumer, identifies the consumer's needs and administers referrals.

General Practitioner (GP) A healthcare professional (usually main primary healthcare provider) chosen by the consumer for healthcare services.

Aged Care Assessment Service Service provider type – provides comprehensive multidisciplinary assessments of older people needs.

Community Health Service Service provider type - provides a wide range of primary health care services (e.g. physiotherapy, public dental, counselling, general practice, health promotion) to eligible population.

Healthcare Resource Either a service provider or a specialized piece of equipment that is subject to demand, and whose availability affects wait times experienced by patients.

3.2 Use Cases

3.2.1 Business Use Cases

3.2.1.1 BUC-HSD-001 Locate Healthcare Services

BUC Identifier	BUC-HSD-001
BUC Name	Locate Service
Goal in Context	<ol style="list-style-type: none"> 1. Provide a healthcare service search and response capability from a clinical system (CS) into an externally provided healthcare services directory (HSD). 2. The CS is able to retrieve a list of services as known to the HSD, with summary information on each service. 3. The criteria used in the search, and the content of the summary information in the response, can be adapted to fit local requirements.
Scope	<p>A CS user initiates local system action to search for a healthcare service and enters search criteria into system.</p> <p>The CS sends the search request to the HSD. Search criteria are expected to include, for example:</p> <ul style="list-style-type: none"> • Type of service required • Geographical location <p>HSD retrieves a set of matches based on criteria supplied and returns the result to the CS.</p> <p>Similarly the CS user can select extra criteria to both extend and refine the search request to the HSD, such as</p> <ul style="list-style-type: none"> • Type of service required • Geographical location • Languages spoken • Gender of practitioner • Availability

	<p>Or</p> <ul style="list-style-type: none"> • Type of service required • Geographical location • Target group • Availability
Preconditions	All required access and retrieval authorizations are in place.
Success/failed End Conditions	<p>Success: Returned result set, one or more matches.</p> <p>Failure: Error response, zero matches</p>
Assumptions and Constraints	The content of the result set is configured to local requirements.
Notes/comments	The size of the returned result set may be managed e.g. by limiting the number of results or by providing a caching/paging mechanism.

2 BUC-HSD-002 Get Details about Healthcare Service

BUC Identifier	BUC-INT-002
BUC Name	Get Details about Healthcare Service
Goal in Context	<ol style="list-style-type: none"> 1. Provide the capability for a clinical system (CS) to retrieve detailed information about a healthcare service from an externally provided healthcare services directory (HSD). 2. The content of the detailed information in the response can be adapted to fit local requirements.
Scope	<p>A CS user initiates local system action to obtain details of a specific healthcare service in the HSD.</p> <p>The CS sends the request to the HSD.</p> <p>Identifying traits will be used according to the EIS, for example:</p> <ul style="list-style-type: none"> • Locally or globally assigned unique identifier of the service • Set of identifying traits of the service <p>HSD returns detailed information about the service to the CS.</p>
Preconditions	All required access and retrieval authorizations are in place.
Success/failed End Conditions	<p>Success: Returned detailed information about the service</p> <p>Failure: Error response, service not identifiable or detailed information not available</p>
Assumptions and Constraints	The content of the result set is configured to local requirements.
Notes/comments	

3 BUC-HSD-003 Add new Healthcare Service to Directory

BUC Identifier	BUC-INT-003
BUC Name	Add new Healthcare Service to Directory
Goal in Context	<ol style="list-style-type: none"> 1. Enable a healthcare provider or other authorized entity to add an additional healthcare service into an externally provided healthcare services directory 2. The content of the summary information required in a request to add a new service can be adapted to fit local requirements.
Scope	<p>A CS or administrative system (AS) user initiates local system action to add a healthcare service and enters summary information as required into local system.</p> <p>CS/AS sends a request to the HSD to add the new service.</p> <p>HSD confirms existence and content of new entry.</p> <p>The business rules concerning the addition of a new healthcare service are internal to the HSD, however will influence the specific summary information required in the request.</p>
Preconditions	All required access and retrieval authorizations are in place.
Success/failed End Conditions	<p>Success: New service with summary information exists in the HSD.</p> <p>Failure: Error response, dependent on the business rules in the HSD instance.</p>
Assumptions and Constraints	Business rules are internal to the HSD and are governed by regulation etc applicable to the HSD instance.
Notes/comments	

4 BUC-INT-004 Update Details of Healthcare Service in Directory

BUC Identifier	BUC-INT-004
BUC Name	Update Details of Healthcare Service in Directory
Goal in Context	Enable a healthcare provider or other authorized entity to maintain the detailed information held concerning a healthcare service in the HSD.
Scope	<p>A CS or administrative system (AS) user initiates local system action to add or update details held about a healthcare service in the HSD.</p> <p>The CS/AS sends a request to the HSD to add/update the details.</p> <p>HSD confirms updated content of details held.</p> <p>Business rules concerning the details that are held about a healthcare service are internal to the HSD, however will influence the content of the request.</p>
Preconditions	All required authorizations are in place.
Success/failed End Conditions	<p>Success: Detailed information about the healthcare service in the HSD has been updated in accordance with the request made.</p> <p>Failure: Error response, dependent on the business rules in the HSD instance.</p>
Assumptions and Constraints	Business rules are internal to the HSD and are governed by regulation etc applicable to the HSD instance.
Notes/comments	Depending of local business rules, clinical coding may be used to classify services, but this is not inherent to the HSD concept

5 BUC-INT-005 Add Resource Schedule

BUC Identifier	BUC-INT-005
BUC Name	Add Resource Schedule
Goal in Context	<p>1. Enable a healthcare provider or other authorized entity to maintain the detailed availability information held concerning a healthcare resource in the HSD.</p>
Scope	<p>A CS or administrative system (AS) user initiates local system action to add or update details held about a healthcare resource in the HSD. This would include free booking windows, down-time windows, etc.</p> <p>CS/AS sends a request to the HSD to add/update the schedule details.</p> <p>HSD confirms updated content of details held.</p> <p>Business rules concerning the details that are held about a healthcare service are internal to the HSD, however will influence the content of the request.</p>
Preconditions	All required authorizations are in place.
Success/failed End Conditions	<p>Success: Detailed information about the healthcare resource in the HSD has been updated in accordance with the request made.</p> <p>Failure: Error response, dependent on the business rules in the HSD instance.</p>
Assumptions and Constraints	Business rules are internal to the HSD and are governed by regulation etc applicable to the HSD instance.
Notes/comments	A resource would have details about availability in predefined periods. For instance, a Physician may be allocated in 15-minute blocks, whereas a specialized piece of equipment might be allocated in 30-minute or 10-minute blocks.

6 BUC-INT-006 Update Resource Schedule

BUC Identifier	BUC-INT-004
BUC Name	Update Details of Healthcare Service in Directory
Goal in Context	<ol style="list-style-type: none"> 1. Enable a healthcare provider or other authorized entity to maintain the detailed schedule information held concerning a healthcare resource in the HSD.
Scope	<p>A CS or administrative system (AS) user initiates local system action to update schedule details held about a healthcare resource in the HSD.</p> <p>The CS/AS sends a request to the HSD to update the details.</p> <p>HSD confirms updated content of details held.</p> <p>Business rules concerning the details that are held about a healthcare service are internal to the HSD, however will influence the content of the request.</p>
Preconditions	All required authorizations are in place.
Success/failed End Conditions	<p>Success: Detailed information about the healthcare resource in the HSD has been updated in accordance with the request made.</p> <p>Failure: Error response, dependent on the business rules in the HSD instance.</p>
Assumptions and Constraints	Business rules are internal to the HSD and are governed by regulation etc applicable to the HSD instance.
Notes/comments	A resource would have details about availability in predefined periods. For instance, a Physician may be allocated in 15-minute blocks, whereas a specialized piece of equipment might be allocated in 30-minute or 10-minute blocks.

3.3 Scenarios

3.3.1 Scenario 1 - Referral between organisations

For example, following is a referral from a General Practice to an Aged Care Assessment Service.

Marge White (**consumer**), a frail elderly woman, presents to her local **general practitioner (service provider)** having experienced a fall at home.

Marge's GP identifies her needs and determines that a referral to an **Aged Care Assessment Service** (for comprehensive **assessment**) will be required to assess whether Marge is coping with living at home on her own. Marge's GP uses the HSD to search the jurisdiction-wide human services directory for the most appropriate Aged Care Assessment Service closest to Marge's place of residence and arrange for an appointment.

A Referral message generated using the GP's clinical software and sent via encrypted email to the Aged Care Assessment Service (**service provider**). The Aged Care Assessment Service receives the encrypted email. The referral message is decrypted and imported into the software application used by the Aged Care Assessment Service. Feedback (**referral acknowledgement**) stating acceptance of referral is provided via an encrypted message to the referring GP. Additional feedback (**referral outcome feedback**) is provided several weeks later to inform the GP regarding outcomes of the comprehensive **assessment**.

3.3.2 Scenario 2 – Telephone Triage

Ten-year-old John arrives home from school, at the normal time of 4:40 pm. John's mother Agnes notices what appears to be a significant cut on his leg. Concerned that medical treatment may be required, and it is too late in the day to make an appointment with the family GP, Agnes gets the telephone number for the 24 hour Nurse Triage Service.

Nurse Sue answers Agnes' call, gets her basic details and description of the problem. Sue then makes suggestions regarding antiseptic and bandaging and advises Agnes to monitor John's leg for redness or continuation of bleeding. If redness appears around the cut she should book an appointment with the family GP to check for infection. If continued bleeding occurs Agnes should take John to a Clinic that operates out of hours. Sue interrogates the HSD using the Service Type General Practitioner, the Suburb where Agnes and John live and the parameter Out of Hours. This immediately returns 2 results of matches of Medical Clinics that operate outside of normal working hours (8:30 am to 6:00 pm), one of which is open 24hrs per day. Sue then passes this information on to Agnes.

3.3.3 Scenario 3 - Determine eligibility

Dr Jim Beam (GP) has long a standing client Margaret Marsh, a 72 year old who was recently widowed after 50 years of blissful marriage. Of late Margaret has been a frequent visitor to Jim's surgery sporting abrasions and bruising. Jim suspects an alcohol problem. In the latest visit Jim has a lengthy discussion with Margaret probing this subject and obtains Margaret's permission to be referred to a Service that includes counselling for Drug & Alcohol issues.

Jim, via his Client Management System, interrogates the HSD for a local Drug & Alcohol Counselling Services. Jim then checks the 3 results returned by the HSD for one that would be

suitable for Margaret to attend and also eligible to attend. He then selects the appropriate Service and electronically sends a Referral for Margaret to attend that Service.

3.3.4 Scenario 4 – Determine Availability for Referral

Andrew has an issue with his knee, and his GP, Dr. Kneebone, wishes to **refer** Andrew to an **Orthopaedic Surgeon**. Andrew lives in a high-density area, and the local Orthopaedic surgeons are in high demand, creating **long wait list times** in the area. Dr. Kneebone enquires of the health registry for a specialist Orthopaedic Surgeon that is within a radius of 100km and has more immediate availability.

Dr. Kneebone determines that Dr. Fixknees has availability next week, and is only 75km away from where Andrew lives. Andrew agrees to make the trip, and is booked into Dr. Fixknees' surgery for 14:00 on Thursday next. A referral is automatically sent to Dr. Fixknees.

3.3.5 Scenario 5 – Determine Availability of Testing Equipment

Dr. Fixknees sees Andrew about his knee, and determines that an MRI would be beneficial in planning his surgery. Dr. Fixknees enquires of the health service registry where the closest MRI machine is that has availability within the next 30 days. He is told that there is a machine in the next town that has time available in three weeks, and he books Andrew's visit within that time slot. He also searches for an available surgery within the institutions where he has privileges and determines that there is an opening in five weeks at one of those facilities. He confers with Andrew and books the surgery. He then has his admin book the times in his clinic availability calendar.

4 Service Definition and Dependencies

4.1 Service Definition Principles

The high level principles regarding service definition that have been adopted by the Services Specification Project are as follows:

- Service Specifications shall be well defined and clearly scoped and with well understood requirements and responsibilities.
- Services should have a unity of purpose (e.g., fulfilling one domain or area) but services themselves may be compose-able.
- Services will be specified sufficiently to address functional, semantic, and structural interoperability.
- It must be possible to replace one conformant service implementation with another meeting the same service specification while maintaining functionality of the system.

A Service at the SFM level is regarded as a system component; the meaning of the term “(system) component” in this context is consistent with UML usage². A component is a modular

² It is expected that services will be defined, in response to the OMG RFP process, as UML components, however that level of design is outside the scope of the Service Functional Model.

unit with well-defined interfaces that is replaceable within its environment. A component can always be considered an autonomous unit within a system or subsystem. A component has one or more provided and/or required interfaces, and its internals are hidden and inaccessible other than as provided by its interfaces.

Each service's Service Functional Model defines the interfaces that the service exposes to its environment, and the service's dependencies on services provided by other components in its environment. Dependencies in the Service Functional Model relate to services that have or may in future have, a Functional Model at a similar level; detail dependencies on low-level utility services should not be included, as that level of design is not in scope for the Service Functional Model.

The manner in which services and interfaces are deployed, discovered, and so forth is outside the scope of the Service Functional Model. However, HSSP Service Functional Models may reference content from other areas of HSSP work that deal with architecture, deployment, naming and so forth. Except where explicitly specified, these references are to be considered informative only. All other interactions within the scope of the scenarios identified above are in the scope of the Service Functional Model.

Reference may be made to other specifications for interface descriptions, for example where an interface is governed by an existing standard.

4.2 Overall Pre-Conditions, Dependencies, and/or “Out of Scope Statements”

Examples are illustrative and not normative unless otherwise specified

It is assumed that Digital Signatures and Encryption Keys are issues and maintained by a central body that provides an online service that validates and allows access to these tokens. This service is also a dependency as without it the Client/Patient Management Service accessing the Services Directory for Referral will not be able to secure the message. Security of the HSD itself is out of scope of this project, but it is assumed that the levels of security will be applied so that the service will work effectively within any appropriate security framework.

Individual and Organizational Provider Identifiers (if they exist and are accessible) will be maintained within a Provider Registry which will also provide a service that will not only allow for the allocation of the identifier, but also include Provider Authentication.

Access to this Service may also be gained through the Entity Identification Service (EIS) which provides a set of capabilities to manage and retrieve identifying information for various kinds of entities (people, organizations, devices etc.).

EIS provides an important foundation component for many healthcare interoperability scenarios, both within and across organizations. Although in many business scenarios it may be used in conjunction with other services, it has been specified to also provide stand alone capabilities.

5 Detailed Functional Model for each Interface

This section gives the functional description of the interfaces for this service. Three separate interfaces have been defined:

- **Administrative Functions:** These functions are to be used only by systems administrators who maintain the Information Technology Infrastructure.
 - Add a Provider / Organization demographics
 - Update a Provider / Organization demographics
 - Relate a Provider to an Organization
 - Disassociate a Provider from an Organization
 - Add a Location
 - Update a Location
 - Relate an Organization to a Location
 - Disassociate an Organization from a Location
 - Relate a Provider to a Location
 - Disassociate a Provider from a Location
 - Add a Resource
 - Update a Resource
 - Relate a Resource to a Location
 - Disassociate a Resource from a Location
 - Delete an Organisation
 - Mark Provider Inactive

In each of the above the post-condition is an alteration to the database. In the case of Add either an additional (new) unique Organisation or Provider record is stored in the database. In the case of Delete the Organisation record is removed from the database. In all other cases the information discussed is stored in the data base against the record selected. The audit trail will also be updated.

- **Maintenance Functions:** Provides operations for managing Provider, Location and Service information.
 - Add a Resource Allocation
 - Remove a Resource Allocation
 - Add a Resource Calendar
 - Update a Resource Calendar
 - Add an Organization Calendar
 - Update an Organization Calendar

- Add a Provider Calendar
- Update a Provider Calendar
- Add a Provider Allocation
- Update a Provider Allocation

In each of the above the post-condition is an alteration to the database. In the Case of Add either a additional (new) Calendar or Allocation record with be added to the database. In the case of Remove the Resource Allocator in question will be deleted from the database. In the case of update the changed information will be stored against the record discussed. The Audit Trail will also be updated.

- Query Functions: Provide look-up operations for discovering providers and services and related information. Also includes the capability to query which service profiles (see section 6) an HSD instance supports
 - Find a Provider / Organization
 - Find all Locations for a Provider / Organization
 - Find all Provider / Organizations for a Location
 - Find an available Resource within an area
 - Find all Locations that have a specified Resource
 - Find all Resource at a Location
 - Find all Resources associated with a Provider / Organization
 - Return a Calendar for a specified Resource / Provider at a specified Organization / Location

The post-condition is that no physical alteration to the service was made, however the audit trails were updated.

5.1 Administration Functions

These functions are to be used only by systems administrators who maintain the operations of HSD instances. It is expected that further “operational” operations would be defined in the technical specification, e.g. start service, stop service, notify if service is operational, etc. These have not been defined in this service functional model and it is assumed that this will be covered in the Technical RFP issuance and response.

5.1.1 Add a Provider / Organization demographics

Description	This method verifies if a specified provider or provider organization already exists within the registry, and if net new, supports the addition of the new provider / provider organization into the
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	<p>registry.</p> <p>Where required, the addition of a provider / provider organization will trigger notifications and an approval process.</p>
Precondition	<p>The addition of a service provider or provider organization sometimes requires that a regulating body be involved in legitimizing the existence of the provider or organization. This service presumes that it has been called by a trusted application, the user of that application being appropriately authenticated and authorized.</p>
Inputs	<p>Provider / Provider Organization demographics consisting of items that describe the provider / provider organization independent of any associations.</p> <p>Data would include: legal name, status with respect to licensing, license numbers if applicable, contact information (if independent: such as a cell phone) and so on.</p>
Outputs	<p>Acknowledgement of success, and the assignment of a registry identifier for the provider / provider organization</p>
Invariants	
Post-conditions	<p>Log updated to show data has at least been checked. Possible changes to Directory data.</p> <p>Notification generated and sent to Approver and updates to data if approved.</p> <p>Additional (new) unique record added to the database.</p>
Exception Conditions	<p>The Provider / Provider Organization already exists within the registry.</p>
Aspects left to RFP Submitters	<p>Directory data elements, mandatory fields and exact business rules</p>
Relationship to levels of conformance	<p>Syntactic correctness of the message interaction.</p> <p>Semantic correctness of the message payload.</p>
Miscellaneous notes	<p>The existence of a Provider / Provider Organization is established independent of any associations / roles they may play in the larger sense of the registry.</p>
Other relevant content	<p>Once the changes are accepted that are applied to the Directory data and a notification to this effect is sent to the person who made the changes. If the approval/rejection of the changes has not been</p>

	<p>actioned, within a configurable period of time, a reminder notice is sent to both parties. If a further configured time period elapses, a notification is sent to the content manager.</p> <p>If the changes are rejected by the Approver a notification to that effect is sent to the person who made the changes.</p> <p>* Note this process may also include approval from Organization or Provider in question.</p>
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5.1.2 Update a Provider / Provider Organization demographics

Description	<p>This method provides for the maintenance of demographic details about Providers / Provider Organizations.</p> <p>Where those changes affect status or licensing of providers, notification and approval processes will result.</p>
Precondition	User is authorized to view and update the selected provider. (Appropriate username/password checking is carried out)
Inputs	<p>Provider / Provider Organization Id.</p> <p>Optional changes to individual data items.</p>
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	<p>Log updated to show data has at least been checked. Possible changes to Directory data.</p> <p>Notification generated and sent to Approver and updates to data if approved.</p> <p>Updates are stored against the record discussed.</p>
Exception Conditions	The Provider / Provider Organization ID provided is no longer considered active (either does not exist, or has been logically deleted.)
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	<p>Syntactic correctness of the message interaction.</p> <p>Semantic correctness of the message payload.</p>
Miscellaneous	

notes	
Other relevant content	<p>Once the changes are accepted that are applied to the Directory data and a notification to this affect is sent to the person who made the changes.</p> <p>If the approval/rejection of the changes has not been actioned, within a configurable period of time, a reminder notice is sent to both parties. If a further configurable time period elapses, a notification is sent to the content manager. If the changes are rejected by the Approver, a notification to that effect is sent to the person who made the changes.</p> <p>* Note this process may also include approval from Organization or Provider in question.</p>

5.1.3 Relate a Provider to Provider Organization

Description	Providers MAY be related to zero, one or many provider organizations at one time (regardless of the nature of the employment contract.) This service provides functionality to link a specified provider to a specified provider organization.
Precondition	User is authorized to view and update the selected provider. (Appropriate username/password checking is carried out)
Inputs	Provider and Provider Organization Ids, Effective date. Optional changes to individual data items.
Outputs	Acknowledgement of success.
Invariants	
Post-condition	Log updated to show data has at least been checked. Possible changes to Directory data. Notification generated and sent to Approver and updates to data if approved. Changes are stored in the database against the record discussed.
Exception Conditions	The Provider and/or Provider Organization Id provided are no longer considered active (either does not exist, or has been logically deleted.)
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	
Other relevant content	Once the changes are accepted that are applied to the Directory data and a notification to this affect is sent to the person who made the changes. If the approval/rejection of the changes has not been actioned, within a configurable period of time, a reminder notice is sent to both parties. If a further configurable time period elapses, a notification is sent to the content manager. If the changes are rejected by the Approver, a notification to that effect is sent to the

	<p>person who made the changes.</p> <p>Changes that only affect availability will not require approval.</p> <p>* Note this process may also include approval from Organization or Provider in question.</p>
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5.1.4 Disassociate a Provider from a Provider Organization

Description	This method is used to sever the relationship between a Provider and a Provider Organization at a specified date.
Precondition	User is authorized to view and update the selected provider. (Appropriate username/password checking is carried out)
Inputs	Provider Id, Provider Organization Id, Effective Date. Optional changes to individual data items.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show data has at least been checked. Changes will stored in the database against the record discussed.
Exception Conditions	The Provider and/or Provider Organization IDs provided are no longer considered active (either does not exist, or has been logically deleted.) There is no existing relationship between the specified provider / provider organization.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	For legal reasons, a provider cannot be removed from an organization through deletion. A provider / organization relationship can only be logically terminated at an effective date.
Other relevant content	Once the changes are accepted that are applied to the Directory data and a notification to this affect is sent to the person who made the changes. If the approval/rejection of the changes has not been actioned,

	<p>within a configurable period of time, a reminder notice is sent to both parties. If a further configurable time period elapses, a notification is sent to the content manager. If the changes are rejected by the Approver, a notification to that effect is sent to the person who made the changes.</p> <p>Changes that only affect availability will not require approval.</p> <p>* Note this process may also include approval from Organization or Provider in question.</p>
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5.1.5 Add a Location

Description	This method is used to identify Locations to the registry.
Precondition	User is authorized to add locations to the registry.
Inputs	Location information such as: descriptive name, latitude, longitude, altitude, effective date. Optional changes to individual data items.
Outputs	Acknowledgement of success. Assignment of a registry id for the location.
Invariants	
Post-conditions	Log updated to show data has at least been checked. Additional (new) unique record is added to the database.
Exception Conditions	The Location already exists within the registry. A location can only have one instance within the registry.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	A location represents places which can be specified in terms of providers and equipment.
Other relevant content	

5.1.6 Update a Location

Description	This method is used to change Locations data within the registry.
Precondition	User is authorized to update locations to the registry.
Inputs	Location demographic information such as: descriptive name, latitude, longitude, altitude, effective date.

	Optional changes to individual data items.
Outputs	Acknowledgement of success. Modified Location data set.
Invariants	
Post-conditions	Log updated to show data has at least been checked. Updates are stored in the database against the record discussed..
Exception Conditions	The Location does not exist within the registry.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	A location represents places which can be specified in terms of providers and equipment.
Other relevant content	

5.1.7 Relate an Organization to a Location

Description	This method is used to create a relationship between a Provider Organization and a Location at a specified date
Precondition	User is authorized to view and update the selected provider organization. (Appropriate username/password checking is carried out)
Inputs	Location Id, Provider Organization Id, Effective Date. Optional changes to individual data items.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show data has at least been checked. Updates are stored in the database.
Exception Conditions	The Location and/or Provider Organization IDs provided are no longer active (either does not exist, or has been logically deleted.) There is an existing relationship between the specified location / provider organization.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	
Other relevant content	

5.1.8 Disassociate an Organisation from a Location

Description	This method is used to sever the relationship between an Organisation and a Location at a specified date.
Precondition	User is authorized to view and update the selected Location relationship. (Appropriate username/password checking is carried out)

Inputs	Location Id, Provider Organization Id, Effective Date. Optional changes to individual data items.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show data has at least been checked. Changes will stored in the database against the record discussed.
Exception Conditions	The Location and/or Provider Organization IDs provided are no longer considered active (either does not exist, or has been logically deleted.) There is no existing relationship between the specified location / provider organization.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	An organisation cannot be removed from an location through deletion. A location / organization relationship can only be terminated at an effective date.
Other relevant content	Once the changes are accepted that are applied to the Directory data and a notification to this affect is sent to the person who made the changes. If the approval/rejection of the changes has not been actioned, within a configurable period of time, a reminder notice is sent to both parties. If a further configurable time period elapses, a notification is sent to the content manager. If the changes are rejected by the Approver, a notification to that effect is sent to the person who made the changes. Changes that only affect availability will not require approval.

5.1.9 Relate a Provider To a Location

Description	This method is used to create the relationship between a Provider and a Location at a specified date.
Precondition	User is authorized to view and update the selected provider. (Appropriate username/password checking is carried out)
Inputs	Provider Id, Location Id, Effective Date. Optional changes to individual data items.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show data has at least been checked. Updates are stored in the database against the record discussed.
Exception Conditions	The Provider and/or Location IDs provided are no longer considered active (either does not exist, or has been logically deleted.) There is an existing relationship between the specified provider / location.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	
Other relevant content	

5.1.10 Disassociate a Provider from a Location

Description	This method is used to sever the relationship between a Provider and a Location at a specified date.
Precondition	User is authorized to view and update the selected provider. (Appropriate username/password checking is carried out)
Inputs	Provider Id, Location Id, Effective Date. Optional changes to individual data items.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show data has at least been checked. Updates are stored in the database.
Exception Conditions	The Provider and/or Location IDs provided are no longer considered active (either does not exist, or has been logically deleted.) There is no existing relationship between the specified provider / location.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	Effective end dates could be scheduled into the future.
Other relevant content	

5.1.11 Add a Resource

Description	This method is used to create an instance of a resource.
Precondition	User is authorized to view and update resources. (Appropriate username/password checking is carried out)
Inputs	Resource description, Resource Type, and other pertinent information such as: make, model, last maintenance, last calibration, service hours, time to next service, warranty date, warranty length, capabilities. Optional changes to individual data items.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show data has at least been checked. Additions are stored in the database.
Exception Conditions	The specified Resource already exists.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	
Other relevant content	

5.1.12 Update a Resource

Description	This method is used to update details about specific resource.
Precondition	User is authorized to view and update resources. (Appropriate username/password checking is carried out)
Inputs	Resource Id and data to be changed. Optional changes to individual data items.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show data has at least been checked. Updates are stored in the database.
Exception Conditions	The Resource ID provided is no longer considered active (either does not exist, or has been logically deleted.)
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	
Other relevant content	<p>Once the changes are accepted that are applied to the Directory data and a notification to this affect is sent to the person who made the changes.</p> <p>If the approval/rejection of the changes has not been actioned, within a configurable period of time, a reminder notice is sent to both parties. If a further configurable time period elapses, a notification is sent to the content manager. If the changes are rejected by the Approver, a notification to that effect is sent to the person who made the changes.</p> <p>Changes that only affect availability will not require approval.</p> <p>* Note this process may also include approval from Organization or Provider in question.</p>

5.1.13 Relate a Resource to a Location

Description	This method creates a relationship between a specified resource and a specified location.
Precondition	User is authorized to view and update resources. (Appropriate username/password checking is carried out) A single resource cannot be in two locations in the same time period.
Inputs	Resource Id, Location Id and effective date.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show data has at least been checked. Updates are stored in the database. The Location and the Resource are now related.
Exception Conditions	The Resource and/or Location IDs provided are no longer considered active (either does not exist, or has been logically deleted.) There is an existing relationship between the specified resource / location for the specified time period.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	A location is a geographical point of service, and can have amenities and equipment that are of interest for scheduling and wait-list management.
Other relevant content	

Explanation: Relationship of Resources & Location

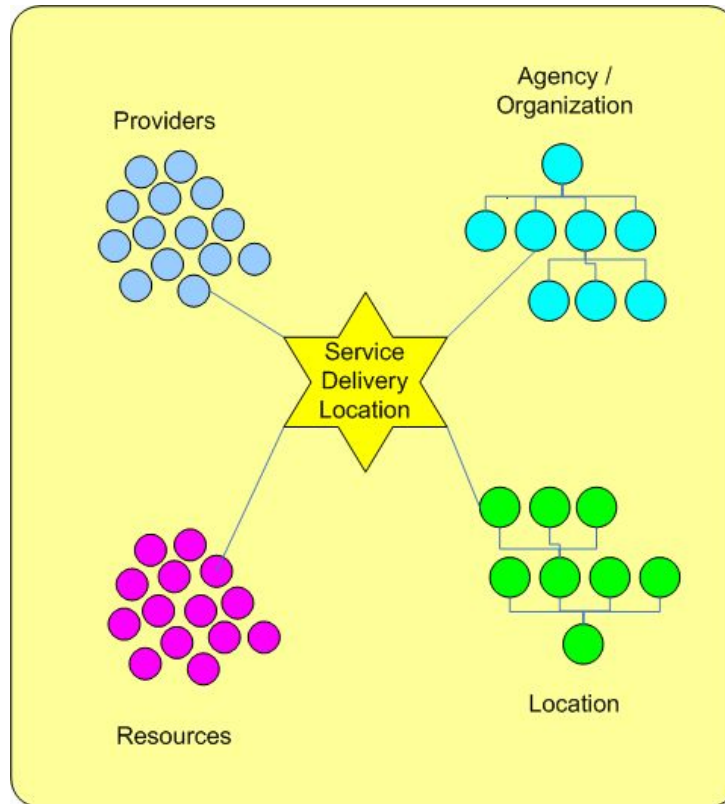


Figure 1 - Concept Relationships

In the diagram above, the trinity of location, organization (or provider) and resource come together to represent a schedulable object, which is the interest of waitlist management. An organization can exist in many locations; a provider may work at many locations; however a resource can only be in one location at a time.

A resource may be scheduled independent of any requirement for a provider, however there are times when the provider and the resource must both be available at the same time. The registry has to understand these relationships and provide for configurable ties in and amongst the various resources, organizations and providers.

5.1.14 Disassociate a Resource from a Location

Description	This method disables a relationship between a specified resource and a specified location.
Precondition	User is authorized to view and update resources. (Appropriate username/password checking is carried out)

Inputs	Resource Id, Location Id and effective date.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show data has at least been checked. Updates are stored in the database against the record discussed. The Resource is no longer associated with the Location.
Exception Conditions	The Resource and/or Location IDs provided are no longer considered active (either does not exist, or has been logically deleted.) The resource is not currently linked to the location.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	A location is a geographical point of service, and can have amenities and equipment that are of interest for scheduling and wait-list management.
Other relevant content	

5.1.15 Delete an Organization

Description	This service is used to logically remove an organisation.
Precondition	User is authorized to view and update the selected organisation. (Appropriate username/password checking is carried out) The Organisation has no active relationships. Any relationships should be expired prior to expiring the Organisation. Business rules will determine if the expiring of relationships can be done at the same time.
Inputs	Provider Organization Id, Effective Date. Optional changes to individual data items.

Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show data has at least been checked. Changes will stored in the database against the record discussed.
Exception Conditions	The Provider Organization ID provided is no longer considered active (either does not exist, or has been logically deleted.) The effective date is greater than today. The organisation has active relationships.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	For legal reasons, a provider organisation cannot be physically deleted.
Other relevant content	Once the changes are accepted that are applied to the Directory data and a notification to this affect is sent to the person who made the changes. If the approval/rejection of the changes has not been actioned, within a configurable period of time, a reminder notice is sent to both parties. If a further configurable time period elapses, a notification is sent to the content manager. If the changes are rejected by the Approver, a notification to that effect is sent to the person who made the changes. Changes that only affect availability will not require approval..

5.1.16 Delete a Provider

Description	This service is used to logically delete a provider.
Precondition	User is authorized to view and update the selected provider. (Appropriate username/password checking is carried out) The provider should not have any active relationships. Business rules will determine if the expiring of relationships can be done at the same time. Effective date must be greater than today.

Inputs	Provider Id, Effective Date. Optional changes to individual data items.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show data has at least been checked. Changes will stored in the database against the record discussed.
Exception Conditions	The Provider ID provided is no longer considered active (either does not exist, or has been logically deleted.) The provider has active relationships. The effective date is less than or equal to today.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	For legal reasons, a provider cannot be removed from an organization through deletion. A provider / organization relationship can only be terminated at an effective date.
Other relevant content	Once the changes are accepted that are applied to the Directory data and a notification to this affect is sent to the person who made the changes. If the approval/rejection of the changes has not been actioned, within a configurable period of time, a reminder notice is sent to both parties. If a further configurable time period elapses, a notification is sent to the content manager. If the changes are rejected by the Approver, a notification to that effect is sent to the person who made the changes. Changes that only affect availability will not require approval. * Note this process may also include approval from Organization or Provider in question.

5.2 Maintenance Functions

These functions provide capabilities to create and maintain details of Providers and Services that can subsequently found and retrieved using the look-up capabilities. Note that these capabilities may be provided by other means, e.g. importing details from another separate directory or database, so this interface is considered optional (or at least is defined in a separate profile).

5.2.1 Add A Resource Allocation

Description	This method is used to block off some amount of time against a specified resource. This could be the booking of an appointment / referral, or identification of scheduled down-time for the resource (if equipment), or personal time off for a person. The result is the creation of an Event against which other resources can be assigned.
Precondition	User is authorized to view and update resources. (Appropriate username/password checking is carried out)
Inputs	Resource Id, Location Id, Type of booking (Appointment, Blocked Time, Preventive Maintenance), Event Id of the event against which the allocation is to be made, Location Id of where the resource booking is to occur, .
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show the allocation of the resource. If the resource was previously allocated, and the entry is for recording forced downtime, then it is expected that any previous allocations that are not for downtime would trigger notifications or some form of rescheduling. The actions related to overridden allocations are the responsibility of the service consumer. An additional record has been added to the database.
Exception Conditions	The Resource ID provided is no longer considered active (either does not exist, or has been logically deleted.) The Location Id is not valid. The resource is not linked to the specified location. There are prior allocations assigned to this resource. The event to which the allocation is to be assigned is not valid.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules

Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	
Other relevant content	

5.2.2 Remove A Resource Allocation

Description	This method is used to update details about a specific resource allocation. This method would be called when a resource allocation is cancelled. The cancellation may be an outright cancellation, or part of a rescheduling of the resource. When a resource is rescheduled, the service consumer may wish to advise those responsible for other events scheduled after the date of the one being cancelled, that a new opening has occurred, and they may elect to move appointments up to fill the space. This is not the responsibility of this service, but is a function that should be considered within scheduling software that may make use of this service.
Precondition	User is authorized to view and update resources. (Appropriate username/password checking is carried out)
Inputs	Resource Id of the resource to be modified, Event Id of the event no longer requiring the resource.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show the de-allocation of the resource. A record has been deleted from the database.
Exception Conditions	The Resource Id provided does not exist. The Resource Id provided is not currently allocated against the specified Event Id. The Event Id does not exist.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	
Other relevant content	

5.2.3 Add A Resource Calendar

Description	This method is used to update the calendar with respect to a specific resource.
Precondition	User is authorized to view and update resources. (Appropriate username/password checking is carried out)
Inputs	Resource Id Location Id Resource availability times specified in the appropriate time blocks) Each resource can have different time-block length; for example, a physician might have 15 minute blocks, whereas a dialysis machine might have 1 hour blocks.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show calendar entries were made. A record has been added to the database.
Exception Conditions	The Resource Id does not exist. The Location Id does not exist. The Resource is not assigned to the Location specified. The calendar updates conflict with existing calendar entries for the resource. The calendar entries conflict with existing allocations against the resource.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	
Other relevant content	

5.2.4 Update A Resource Calendar

Description	This method is used to update details about specific resource calendar.
Precondition	User is authorized to view and update resources. (Appropriate username/password checking is carried out)
Inputs	Resource Id, Specified calendar entries in appropriate time-blocks for the resource, Location Id.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show calendar entry changes. Updates were stored in the database against the record discussed.
Exception Conditions	The Resource Id does not exist. Location Id does not exist. Resource is not assigned to the specified Location. The calendar updates conflict with existing resource allocations.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	A calendar for a resource can only be changed for time blocks that have no existing allocations. If there are allocations, then those allocations must be de-allocated (rescheduled, cancelled) before the calendar updates can be processed.
Other relevant content	

5.2.5 Add an Organization Calendar

Description	<p>This method is used to update details about specific organization calendar.</p> <p>An Organization Calendar specifies the days when the organization is open for business, and the times within those days.</p>
Precondition	User is authorized to view and update Organizations. (Appropriate username/password checking is carried out)
Inputs	Organization Id, specified calendar times for the specified organization, Location Id.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	<p>Log updated to show calendar changes.</p> <p>A record has been added to the database.</p>
Exception Conditions	<p>The Organization Id does not exist.</p> <p>The Location Id does not exist.</p> <p>The Organization is not assigned to the specified Location.</p> <p>There exist calendar entries for the Organization that overlap what is being asked.</p> <p>There are events booked within the organization which overlap the calendar entries being specified.</p>
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	<p>Syntactic correctness of the message interaction.</p> <p>Semantic correctness of the message payload.</p>
Miscellaneous notes	
Other relevant content	

5.2.6 Update An Organization Calendar

Description	This method is used to update details about specific organization calendar.
Precondition	User is authorized to view and update organizations. (Appropriate username/password checking is carried out)
Inputs	Organization Id, Calendar dates and times, Location Id.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show calendar changes. Updates were stored in the database against the record discussed.
Exception Conditions	The Organization Id does not exist. The Location Id does not exist. The Organization is not assigned to the specified Location. There are events allocated against the calendar entries being modified, and the changes would impact those events.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	
Other relevant content	

5.2.7 Add A Provider Calendar

Description	This method is used to update details about specific Provider.
Precondition	User is authorized to view and update Providers. (Appropriate username/password checking is carried out)
Inputs	Provider Id, Calendar entries expressed in appropriate time-blocks for the provider, Location Id.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show calendar entries. A record has been added to the database.
Exception Conditions	The Provider ID is no longer considered active (either does not exist, or has been logically deleted.) Location Id does not exist. Provider is not assigned to the specified Location. The calendar entries supplied conflict with existing calendar entries for the Provider.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	
Other relevant content	

5.2.8 Update a Provider Calendar

Description	This method is used to update details about specific provider calendar.
Precondition	User is authorized to view and update providers. (Appropriate username/password checking is carried out)
Inputs	Provider Id, Calendar entries, Location Id.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show calendar changes. Updates were stored in the database against the record discussed.
Exception Conditions	The Provider ID is no longer considered active (either does not exist, or has been logically deleted.) Location Id does not exist. Provider is not assigned to the specified Location. Calendar entries provided modify time periods against which there are existing events allocated.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	A calendar cannot be modified if it affects existing allocations. Those allocations must be dealt with prior to the change to calendar being processed. It is the responsibility of the service consumer to work out how to manage that in a user friendly manner.
Other relevant content	

5.2.9 Add A Provider Allocation

Description	This method is used to book time for a particular provider. The result is the creation of an Event against which other resources can be assigned.
Precondition	User is authorized to view and update provider allocations. (Appropriate username/password checking is carried out)
Inputs	Provider Id, Location Id, Event date and time.
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show allocation of the provider. Updates were stored in the database. An allocation event is established for the specified time.
Exception Conditions	The Provider ID is no longer considered active (either does not exist, or has been logically deleted.) The Location Id does not exist. The Provider is not related to the specified location. The Provider is not available in the time slot specified.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	
Other relevant content	

5.2.10 Update a Provider Allocation

Description	This method is used to update details about specific resource, including cancelling an appointment (allocation.)
Precondition	User is authorized to view and update resources. (Appropriate username/password checking is carried out)
Inputs	Event Id for the event to be modified. The action to be performed (cancel, move.)
Outputs	Acknowledgement of success.
Invariants	
Post-conditions	Log updated to show the allocation change. Updates were stored in the record.
Exception Conditions	The Event Id specified does not exist. The action is to move an event to a different time slot and the target time slot is already occupied.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	Syntactic correctness of the message interaction. Semantic correctness of the message payload.
Miscellaneous notes	If the action is to cancel an event, then this creates an opening in the Provider/Resource calendar and the service consumer should respond by notifying other later scheduled events that they may be able to move up.
Other relevant content	

5.3 Content Manager Maintenance

The Content Manager has unrestricted access to all Service Providers and all fields in the database. The Content Manager also has access to the audit logs and can perform User Maintenance. The Content Manager refers to a User Interface into the repository for administrative maintenance.

Description	<p>The database Content Manager views and updates Organisation and Provider details.</p> <p>Via password access through a GUI, the Content Manager can support the view and maintenance of any information fields within any records within the Directory. These changes take effect immediately and include Organization and Provider addition and deletion. All changes are logged.</p>
Precondition	User is authorized to use this tool. (Appropriate username/password checking is carried out)
Inputs	<p>Provider ID, Organization Id, Resource Id, Location Id as appropriate.</p> <p>Optional changes to individual data items.</p>
Outputs	Information fields are updated.
Invariants	
Post-conditions	Log updated to show data that has changed. Updates were stored in the database.
Exception Conditions	If the status of a Provider/Organization/Resource is changed so as to make that data object unavailable, and there are existing events allocated against that object, the action will fail. All events must be redistributed before the desired action can be executed.
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	<p>Syntactic correctness of the message interaction.</p> <p>Semantic correctness of the message payload.</p>
Miscellaneous notes	
Other relevant	

content	
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5.4 Query Functions

These functions provide the core functionality of the Service, i.e. the ability to find and retrieve details of Providers and Healthcare Services.

5.4.1 Service & Provider Directory Lookup

Description	Applications can be developed to interrogate the directory and display the results of the interrogation. This capability will simply provide the information to the calling application.
Precondition	
Inputs	Service (as in Healthcare Service), Organisation Name, Practitioner Name, Location, and Hours Of operation. The minimum input must be Service, Organisation Name, Provider, Resource or Location.
Outputs	Services, Organisation Name, Address, Provider(s) Name, Resource Identification, Hours of Operation, Appointment Required, Phone Number, e-Mail Address, and Client/Patient Management System Address for all successfully matched criteria.
Invariants	
Post-conditions	Activity logs updated.
Exception Conditions	
Aspects left to RFP Submitters	Directory data elements, mandatory fields and exact business rules
Relationship to levels of conformance	
Miscellaneous notes	The service may include many extra fields of information such as target groups, eligibility, Geo Coding, Map References and hence maps, specialties etc, but these will be driven by demand.
Other relevant content	

6 Profiles

6.1 Introduction

A profile is a named set of cohesive capabilities. A profile enables a service to be used at different levels and allows implementers to provide different levels of capabilities in differing contexts. Note that through the use of profiles there are no “optional” interfaces. Conditions that might otherwise merit this optionality should be addressed via a dedicated profile.

A set of profiles may be defined that cover specific functions, semantic information and overall conformance. The SSDF explains in detail the meaning of each of these types of profile. In brief, they are as follows:

- **Functional Profile:** a named list of a subset of the operations defined within this specification which must be supported in order to claim conformance to the profile.
- **Semantic Profile:** identification of a named set of information descriptions (e.g. semantic signifiers) that are supported by one or more operations.
- **Conformance Profile:** this is a combination of a set of functional and semantic profiles taken together to give a complete coherent set of capabilities against which conformance can be claimed. This may optionally include additional constraints where relevant.

In this context, there is a set of atomic services upon which the overall HSD relies. These services are identified in the Domain Analysis Model, and are: Provider Registry, Agency Registry, Location Registry, Client Registry, and Resource Registry. These independent registries hold the defining information about their respective scope but are generally unaware of each other. The HSD ties these independent registries together to provide services in the functional areas of e-referral, scheduling, booking and wait-list management.

Many different messages types may depend upon the same sets of services. The messages are interaction based, with common elements required / provided under differing scenarios. The interaction is important, in that a given interaction will have an associated profile, however many interactions may share the same or similar profiles. This is a result of the power of service oriented architecture (SOA) as it meets interaction oriented architecture (IOA). SOA is used within the inner mechanisms, and IOA is the outer-most layer that first encounters the interactions.

There are three scenarios presented in the following text, each showing how the business interactions work their way out in the service calls. A service call grid is provided to summarize the dependencies. Note, many service calls are not initiated through the business interactions as they exist for administrative and configuration purposes. Those services used in everyday interactions are far fewer in number.

6.2 Cases

6.2.1 Profile Case One

In this scenario, a patient goes to their family practitioner presenting with pain in their knee. The family practitioner decides that a specialist referral is in order, and seeks an appropriate specialist within a reasonable area of where the patient lives. Finding a specialist that is available within an

acceptable time frame, the family practitioner books an appointment for the patient, and forwards an eReferral of the case.

The patient attends the specialist's office and the specialist decides that an MRI would be required. The specialist locates an available MRI within a reasonable distance of the patient, and books the patient, initiating an eReferral for the MRI clinic.

The sequence is as follows.

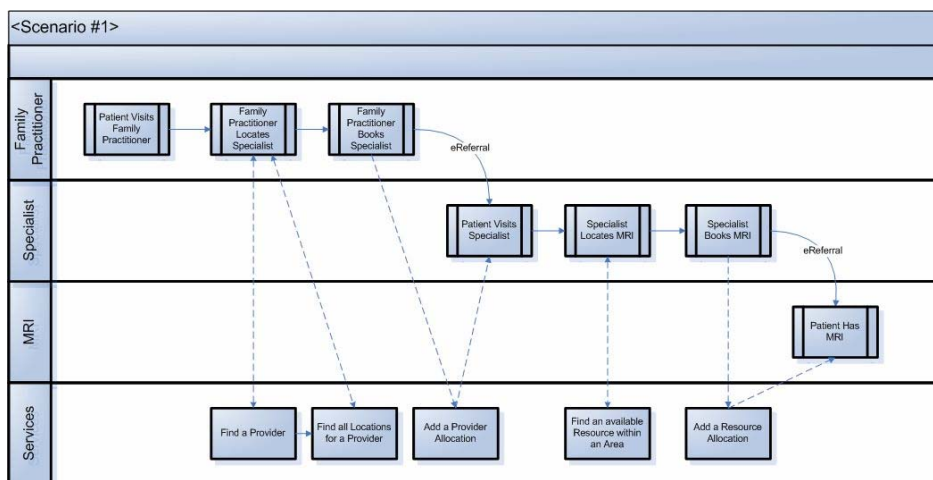


Figure 2 - Scenario #1 Swim-lane Diagram

The sequence has made some assumptions:

- That the Patient has been uniquely identified
- That the Family Practitioner has been validated through the Provider Registry and has capabilities to issue eReferrals
- That there is a service governance framework in place that handles these validations, consent management, log and audit, and other overarching functions.

6.2.2 Profile Case Two

A young man (Joe) moves to the other side of the country seeking work 6 months prior. His occupation is Builders Labourer. As a casual employee the pay is good, however opportunities for sustained employment have not presented themselves. He has no family locally and lives in a rented unit, of which, due to cash flow issues, he is over 1 month behind in rent, although he does have employment at the moment.

It is the weekend and he goes fishing. While walking through bushland he steps on a spike which goes through the sole of his shoe and into his foot. On Monday he appears at work, however is in obvious discomfort.

On Tuesday he appears again at work, but can barely walk. The foreman sends him home and he makes an appointment to see a local GP the next day.

The GP examines the wound and prescribes pharmaceutical drugs to treat infection, however due to a lack of funds Joe does not get the prescription filled.

It is now Sunday and Joe is severely distressed. Out of desperation he calls an Ambulance and is subsequently admitted to Hospital.

Three weeks and 2 operations later Joe is discharged. He is mobile, but only with the aid of crutches. During the Discharge process Joe informs the Nurse that his address is no longer current as he has been evicted, during his stay in Hospital, for defaulting on rent. As a result the Discharge process a Discharge Summary is sent to his GP (indicating further treatment is required), and Referral sent to a Public Housing Officer (in this case located in the Hospital), Local Government, Home Nursing Service and Federal Government Agency detailing :

- The need for temporary accommodation
- The need for home delivered meals and
- The need for additional home care above what will be supplied by the GP
- The need for unemployment/sickness benefits

The Public Housing Officer issues Joe with a Rooming House Voucher (& address) and a Taxi Voucher to deliver him to his new address. He then sends a Referral Update to Local Government, Home Nursing Service and Federal Government Agency updating his temporary address details.

The Public Housing Officer begins a search for more permanent accommodation for Joe while all other parties commence their roles in the process to ensure Joe's full and speedy recovery and rehabilitation.

6.2.3 Functional Profiles

- Provider/Organisation Administration includes :
 - Add Entities
 - Modify Entities
 - Delete Organisations
- Allocation and Calendar Maintenance includes
 - Add Calendar or Allocation
 - Update Calendar or Allocation

- Query includes
 - Get Entity
 - Get all Information on Entity
 - Get Supplementary Information on Entity

6.2.4 Semantic Profiles

At this point these are described in Appendix C – HSD Data Dictionary.

7 User Scenario Interaction Details [Optional]

- Describe the dynamics of the service from a requirement-level architectural view and its interactions with anticipated (services/components/applications, etc.)
- High-level description, illustrating the scenarios
- Elaborated for each scenario (or use case) in Chapter 2.

8 The Services Framework Functional Model

The Services Framework Functional Model identifies common underlying enterprise infrastructure such as naming, directory, security, etc. that may be assumed and referenced by this Functional Model.

Note that the Services Framework Functional Model is being developed in parallel with other service Functional Models; candidate functionality for the Framework should be submitted to the Infrastructure subgroup for evaluation.

The HSD service instances are intended to be middleware services and operate in the context of supporting services that may operate within an enterprise. As a result (and previously mentioned) a number of capabilities and uses have been omitted from the scope this specification (for example Accreditation Validation).

The specification, by design, can be used as a means to integrate a new capability into a service orientated architecture or can be used to provide a service interface to access other services (such as Security Tokens). This is not intended as a replacement of any system, but instead to act as a companion component that facilitates interoperability with data sharing partners through a standard set of API's utilising Web Services.

The HSD also assists in things like Wait List Management with the use of other features such as Calender.

9 Information Model and Semantic Binding Approach

The following principles shall be followed for specifying the information model to be used by the services being specified in this Service Functional Model:

1. SFMs shall provide a conformance profile supporting HL7 content where relevant

2. We shall not preclude the use of non-HL7 content
3. SFMs will reuse to the maximum extent possible the content models as defined in other standards (for example, HL7 RMIMs)
4. Information content representations shall be represented in platform-agnostic formalisms (e.g., UML)
5. SFMs may identify content at varying levels of granularity, depending upon the functions being specified. (For example, the Common Terminology Service will deal with different granularity of information than the Resource Location and Update Service).
6. Conformance Profiles may be balloted or adopted after the release of the initial SFM to address specialized business needs. (realm-specific profiles, domain-specific profiles, etc.)
7. Details about semantics specific to this SFM appear in other sections of this document

In addition this service may utilise the features of other services including RLUS, EIS and CDS.

9.1 Domain Analysis Model (Informative)

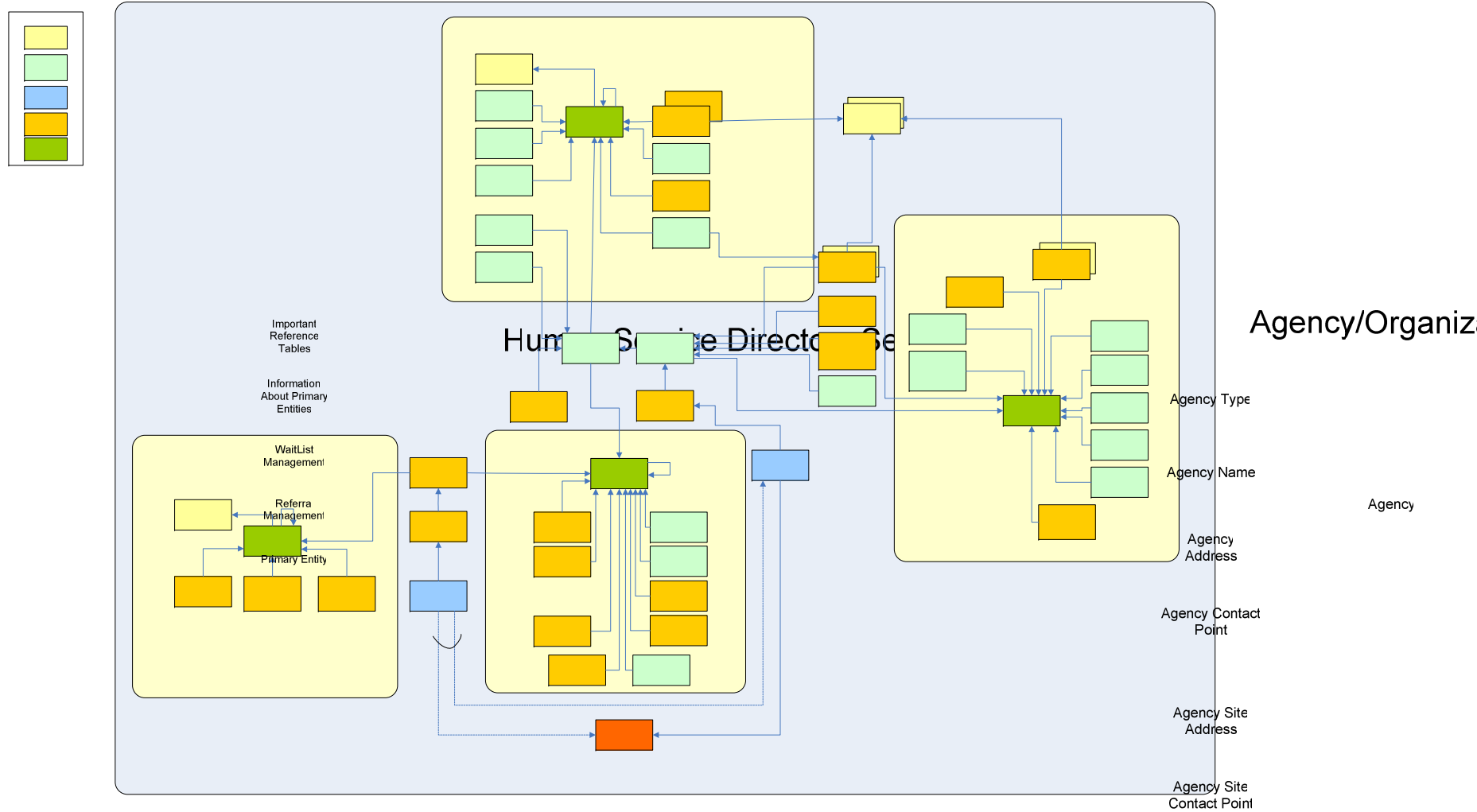


Figure 3 - Domain Analysis Model

9.2 Service Component Structure

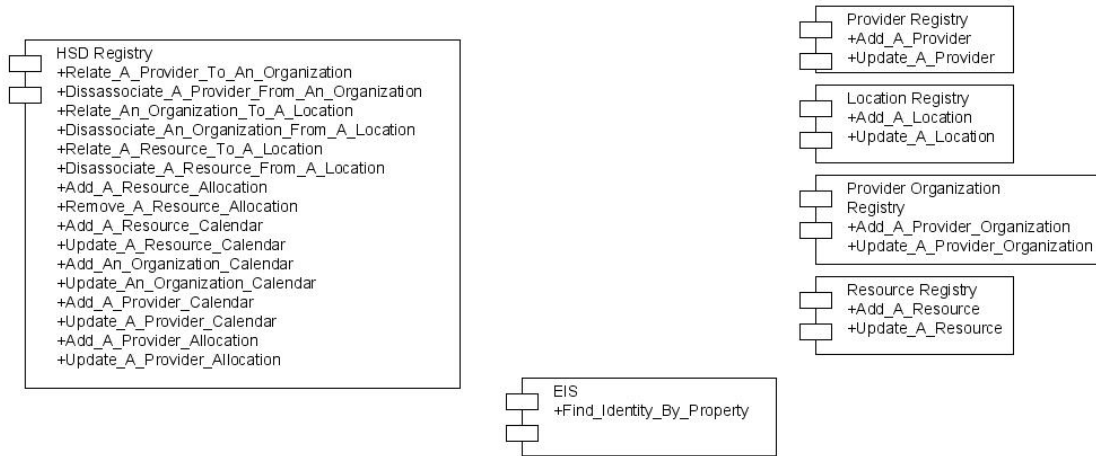


Figure 4 - Service Component Structure

This diagram shows that most of the service calls required to support the expanded functions of the Human Services Directory reside within the service. Dependencies to other services presume that the management of entities within those registries is the domain of those registries, and that the management of the EIS is already looked after in the context of those other registries.

It is also assumed that the Resources and Organizations will be included within the EIS index.

10 Domain Analysis Model Functional Use

The domain analysis model identifies a number of entities, many of which contribute to various functional requirements. Before getting into the specifics related to profiles, an explanation of the entities and their relationships is in order.

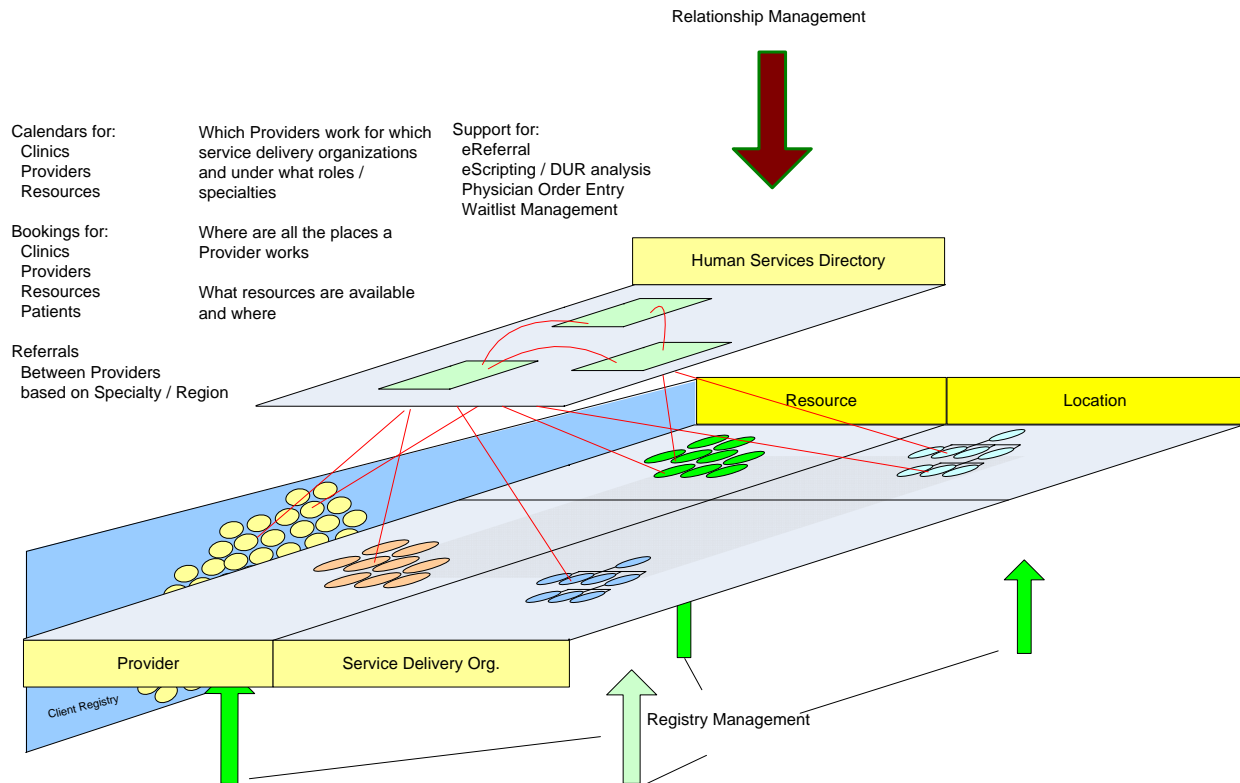


Figure 5 - Human Services Directory Relationships

10.1 Provider:

Some aspects of the Service Provider relate to identification and the establishment of credentials:

- Service Provider
- Service Provider Qualification
- Service Provider Credential
- Service Provider License / Registration
- Service Provider Name
- Service Provider Contact Point
- Service Provider Identifier
- Service Provider Address

These entities are of value in general Provider Registry services such as:

- Naming providers
- Determining status
- Communicating with the provider for license / registration purposes
- Identifying providers from various local identification schemes
- Etc.

In order to extend the provider registry into the e-Referral function, the following entities are added – these assist in searching for providers for referral purposes:

- Service Provider Specialty
- Service Provider Language
- Service Provider Referral Method

These entities represent ‘static’ information about the provider that provide guidance and ‘default’ values when searching for referral purposes.

10.2 Agency/Organisation:

As with providers, some aspects of the Agency/Organisation registry support the basic support functions required of the registry outside of extended functional use required of referral or wait-list management. These are:

- Agency
- Agency Name
- Agency Address
- Agency Contact Point
- Agency Identifier

These entities are of value in general Agency Registry services such as:

- Naming agencies
- Communicating with the agency
- Identifying agencies from various local identification schemes
- Etc.

Agencies are extended to link to providers where the provider is related to the agency in a management capacity.

- Agency Provider

Agency extends to link to Location through:

- Agency Service Site
- Agency Site Contact Point
- Agency Site Address

Agency and Location combined link to Provider through:

- Service Site Service Provider
- Service Site Provider Contact Point

And further, in order to accommodate referral and waitlist management through:

- Agency Service Site Catchment Area
- Provider Service Site Availability and for booking
 - o Provider Service Site Booking
- Service Provider Site Specialty
- Service Provider Site Role
- Service Site Provider Referral Method.

10.3 Location:

The location registry is a fundamental registry within the Electronic Health Record and there are base entities that support those general location registry functions:

- Service Site
- Service Point Contact Point
- Service Site Address
- Service Site Identifier

Extending the location registry to accommodate e-Referral and wait-list management adds:

- Service Site Geographical Coordinate
- Service Site Availability
- Service Site Setting
- Service Site Target Group
- Service Site Referral Method
- Service Site Instance Characteristic

10.4 Resource:

The resource registry exists as a place to maintain the definition of equipment or facility resources that are subject to referral or other forms of booking. As with the other registries, there are basic registry functions which are supported by:

- Resource
- Resource Identifier
- Service Site Resource

And then extended to support e-Referral and wait-list management with:

- Resource Restricted Availability
- Resource Instance Capability Characteristic
- Service Site Resource Availability

- Site Resource Booking

11 Profile Guidance – e-Referral Functional Use

e-Referral can manifest different profiles depending on the needs of the specific implementation.

In progression:

Profile #1

Find a provider that has a given specialty

Find an Agency that supports a given specialty

Find a resource

Profile #2

Find a provider / agency with a given specialty within a given area

Find a resource within a specified area

Profile #3

Find a provider with specified specialty and other characteristics that support the cultural sensitivity of the patient / client.

Find a provider with a specified specialty and other characteristics that support the cultural sensitivity of the patient / client, within a given area.

Profile #4

Book a provider referral

Book a resource referral

12 Profile Guidance – Wait-List Management

Wait-list management extends the concept of e-Referral to consider active scheduling of providers and resources. This is a straight forward booking process with the only variance dictated by how fine-grained the availability calendars are. In the e-Referral case, availability is presumed to be open. Within wait-list management, benefit accrues when availability reflects the normal booking window of the associated resource or provider.

The steps in booking are those identified above under e-Referral.

13 Recommendations for Technical RFP Issuance

- The responders must not only state how the technical solution will be developed, but also how to populate the database with explicitly what. Obviously the ultimate solution is to have all individual providers and provider organisations for a region or jurisdiction to be covered however this would take quite some time and be quite expensive, so for the DSTU to work they must be quite explicit.
- The responders must also identify what other services the Directory Service will be able to access on behalf of the user.
- Consideration should be given to the concept of an international code set Service Provider Service Descriptions for Service Directories. These already exist for some sectors (such as some areas of health) although they are jurisdiction based and can literally run into thousands (which is not suitable for the operation of a Services Directory).
- The responders should also be able to differentiate between a Services Directory and a Provider Directory.

14 Glossary

Citation of terms specific to this functional specification and not included in the overall HSSP Glossary

Term	Definition
Aged Care Assessment Service	Service provider type – provides comprehensive multidisciplinary assessments of older people needs.
Agency	An organization which participates in the delivery of healthcare services
API	Application Programming Interface
Archetype	A structured model of domain content
AS	Administrative System
CDS	Clinical Decision Support
Community Health Service	Service provider type - provides a wide range of primary health care services (e.g. physiotherapy, public dental, counselling, general practice, health promotion) to eligible population.

Term	Definition
Compliance	Either a state of being in accordance with established guidelines, specifications, or legislation or the process of becoming so.
Conformance	A state or acts of adherence to a certain specification, standard, or guideline
Consumer	An individual (patient/client/service user) who has or will receive healthcare services. The consumer may self-refer to a service.
CS	Clinical System
Data Dictionary	A database that contains definitions of all data items defined during analysis.
Digital Signature	A type of asymmetric cryptography providing the electronic equivalent of a handwritten signature.
DSTU	Draft Standard for Trial Use
Duty worker	A healthcare professional who registers a consumer, identifies the consumer's needs and administers referrals.
EHR	Electronic Health Record
EIS	Entity Identification Service
Encryption	The conversion of data into a form that cannot be easily understood by unauthorized people
Encryption Key	A sequence of numbers used to encrypt or decrypt data
General Practitioner (GP)	A healthcare professional (usually main primary healthcare provider) chosen by the consumer for healthcare services.
GUI	Graphical User Interface
HSD	Human Services Directory
Healthcare Resource	Either a service provider or a specialized piece of equipment that is subject to demand, and whose availability affects wait times experienced by patients.
Healthcare Services	Any medical or remedial care or service, including catering, supplies delivered etc. where those services affect the health care

Term	Definition
	or treatment of a person
HSSP	Healthcare Services Specification Project
IOA	Interaction oriented architecture
IT Services	Services provided to one or more Customers, by an Information Technology Service Provider
Location	A geographical point of service
Location ID	An identifier assigned to a location in order to ensure its uniqueness on the HSD
MnM	Modeling and Methodology
MRI	Magnetic Resonance Imaging
OMG	Object Management Group
openEHR	An open standard specification that describes the management and storage, retrieval and exchange of health data in electronic health records
PAS	Patient Administration System
Physician	A person licensed to practice medicine
Profile	A named set of cohesive capabilities
Referral	The practice of sending a patient to another program or practitioner for services or advice which the referring source feels is better qualified to provide.
Referring service provider	A service provider who is referring the consumer to another service provider.
Referred to service provider	A service provider who is receiving a referred consumer from another service provider.
Resource	A resource is any specialized piece of equipment (testing or otherwise) that may be scheduled either directly or through a service provider appointment

Term	Definition
Resource ID	A unique system assigned Id for each resource
RFP	Request for Proposal
RIM	Reference Information Model
RLUS	Retrieve, Locate, Update Service
RMIM	Refined Message Information Model
Security Token	A security token (sometimes called an authentication token) is a small hardware device that the owner carries to authorize access to a network service.
Service Provider	An individual practitioner licensed or credentialed to administer healthcare services.
Service Provider ID	An identifier assigned to a service provider in order to ensure its uniqueness on the HSD
Service Provider Organisation	An organisation licensed or credentialed to administer healthcare services.
Service Provider Organisation ID	An identifier assigned to a service provider organisation in order to ensure its uniqueness on the HSD
SFM	Service Functional Model
SIG	Special Interest Group
SOA	Service Oriented Architecture
SSDF	Service Specification Development Framework
STM	Service Technical Model
Triage Service	A system of assigning priorities of medical treatment based on urgency, chance for survival, etc.
T3F	Transitional Technical Task Force
UML	Unified Modelling Language

Term	Definition
URL	Uniform Resource Locator
Web Service	A software system designed to support interoperable machine-to-machine interaction over a network

15 Appendix A - Relevant Standards and Reference Content

This section identifies key existing standards that are relevant to this specification and how they are related to it. Given the diversity of work that has been carried out and continues to occur, not every standard or implementation can be referenced, so exclusion does not imply any qualitative comment or opinion. The purpose is to differentiate this specification from existing work and offer some guidance on how some of the key existing standards may play a part in implementations based on this specification.

Reference	Description	Relationship to HSD
Health Level Seven V3 Edition 2008: ANSI/HL7 V3 PM, R1- 2005	HL7 Version 3 Standard: Personnel Management, Release 1	This domain includes the HL7 content models for Provider Registries and Organization Registries.
Health Level Seven V3 Edition 2008: HL7 PA, R2- 2007	HL7 Version 3 Standard: Patient Administration, Release 2	This domain includes the HL7 content models for Service Delivery Location Registries.

16 Appendix B - HL7 EHR Functional Model Traceability

This section lists the EHR Functions that are related to this service.

*Note that in general there will not be a direct correspondence between EHR Functions and HSSP Services, since Services are specified from a different system viewpoint. The mapping provided here enables the HSSP Services to be understood in the context of the **EHR-S Functional Model DSTU**. The table below references Version _____ of the EHR Functional Model.*

EHR Function ID	EHR Function Name	EHR Function Statement	Notes <i>For every row, explain the rationale for the specification.</i>

17 Appendix C – HSD Data Dictionary

17.1.1 Agency:

An agency is any organization, or collection of organizations, that participate in the delivery of health care services. An agency is not an individual service provider, though an agency may be the legal representation of an individual service provider.

Agencies may be grouped together in an unlimited corporate hierarchy.

Agency Id	Assigned by the system
Start Date	Effective date of the agency within the system
End Date	Expiry date of the agency entry within the system
Incorporation Date	Date the agency was made legally alive.
Privacy Code	Code identifying the privacy confidentiality option selected by the agency.
Status	The status of the agency. Unapproved, Active, Suspended, Deleted
Availability Time Block code	The size of the time block used to define availability schedules for this agency: expressed in hours.

17.1.2 Agency Name:

An agency may be known by different names distinguished by name type and name purpose. For example, the legal name might be Hollcroft Health Trust, but the trade name might be The Hollcroft Centre.

Name Type	Professional Married Birth Name by Repute
Name Purpose	Mailing Cheques Correspondence
Legal Indicator	Set to 1 for the legal name, 0 for a non-legal name
Preferred Name	Set to 1 for the preferred name, 0 otherwise.
Name Text	The name referenced.
Start date	When the name became effective
End Date	When the name became no longer used.

17.1.3 Agency Address:

An instance of an agency might have addresses that are independent of service delivery sites: such as a corporate head office, mailing address, marketing address, and so on. Each address is identified by a type and purpose.

Agency Id	From Agency entity
Address Line 1	Civic address part
Address Line 2	Civic address part
Jurisdiction	(City, Town, Village, Area) points within a hierarchy that travels from Country down to the lowest level of jurisdiction within the specified country.
Postal Identification code	Postal code, zip code, etc.

Address Type	Residential, Business, Temporary
Address Purpose	Mailing, Delivery, Shipping
Start Date	The first day on which this address is effective
End Date	The last day on which this address is effective

17.1.4 Agency Contact Point:

An agency may have contact points that are independent of any particular service delivery site: such as a corporate website, or other corporate numbers (telephone, fax.) Each contact point is identified by a type and purpose.

Agency Id	From Agency above
Contact Point Type	Phone, Fax, Pager, email
Contact Point Equipment	Cell, Fixed Line, TTY, NA
Contact Point Purpose	Residential, Business, Personal
Contact Point Text	The contact reference
Contact Point Format String	A string indicating how the reference is to be understood. Email for example would indicate [a-z, 1-0, '._-']*@[a-z, 1-0, '._-']*
Start Date	The first day on which this contact point becomes effective.
End Date	The last day on which this contact point is effective.

17.1.5 Agency Specialty:

An agency may provide services under zero, one or more specialties. An agency that is a holding company may have no specialties, while those agencies held by the holding company may have various.

Agency Id	From the Agency entity above
Specialty Code	From a predefined reference table
Start Date	The first date the specialty is effective for this agency
End Date	The last day on which this specialty is active for this agency.

17.1.6 Agency Identifier:

An agency may be known by any number of external identifiers. Each identifier is specified by a type, an issuing authority, and a controlling authority.

Agency Id	From the Agency entity above
Identifier Type	Medical Record Number, Driver's License, Provincial Health Number, National Health Number, etc.
Identifier Issuing Authority	Provincial Department of Health, St. Michael's Hospital (for example)
Identifier Controlling Authority	Public Works and Government Services, Health Region (for example)
Identifier Text	
Start Date	The effective start date of this identifier
End Date	The effective end date of this identifier

Privacy Indicator	If set to 1, this identifier will not show up on view screens – but may be used in searches to find an agency.
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17.1.7 Agency Availability:

Each agency may specify its own calendar as to when its doors are open for business. The various calendar/availability entities work together when determining referrals or booking appointments. The calendar must provide for daily variances in opening / closing times, holiday schedules, and special events.

Agency Id	From Agency entity above
Date	Year/Month/Day of entry
Time Available	Expressed in time blocks from Agency
Start Date	Effective Start date of this entry
End Date	Effective end date of this entry

17.1.8 Agency Service Site:

An agency may provide services at zero, one or more sites, and a site may provide services through one or more agencies.

Agency Id	From Agency entity above
Service Site Id	From Service Site entity below
Start Date	Effective start date fro this entry
End Date	Effective end date for this entry

17.1.9 Agency Service Provider:

An agency may include zero, one or more service providers that work for the agency in capacities outside of service delivery. This entity describes those individuals that work for an agency, but may not be identified with particular service sites. (For example, the CEO may be a service provider that devotes their time to corporate interests only.)

Agency Id	From Agency entity above
Service Provider Id	From Service Provider below
Start Date	The effective start date of this entry
End Date	The effective end date of this entry

17.1.10 Agency Service Site Address:

An agency at a particular site may specify address information that is in addition to, or overrides, the agency address identified above. Each address is specified by a type and a purpose.

(When seeking an address of a particular type, begin by searching at the lowest level (site) and if not found, progress up the agency tree until such an address is found.)

Agency Id	From Agency entity above
Service Site Id	From Service Site entity below
Address Line 1	Civic address part
Address Line 2	Civic address part
Jurisdiction	(City, Town, Village, Area) points within a hierarchy that travels from Country down to the lowest level of jurisdiction within the specified country.
Postal Identification code	Postal code, zip code, etc.
Address Type	Residential, Business, Temporary

Address Purpose	Mailing, Delivery, Shipping
Start Date	The first day on which this address is effective
End Date	The last day on which this address is effective

17.1.11 Agency Site Contact Point:

An agency at a particular site will have different contact information (perhaps) than the information held at the agency level independent of site. This entity provides for any number of contact points that relate specifically to the agency at that site. Each contact point is identified through a type and a purpose.

Agency Id	From Agency above
Service Site Id	From Service Site entity below
Contact Point Type	Phone, Fax, Pager, email
Contact Point Equipment	Cell, Fixed Line, TTY, NA
Contact Point Purpose	Residential, Business, Personal
Contact Point Text	The contact reference
Contact Point Format String	A string indicating how the reference is to be understood. Email for example would indicate [a-z, 1-0, '._-']*@[a-z, 1-0, '._-']*
Start Date	The first day on which this contact point becomes effective.
End Date	The last day on which this contact point is effective.

17.1.12 Service Provider:

A service provider is any person that delivers clinical value in the provision of health services. Anyone who becomes a matter of record on the Electronic Health Record, or is part of a scheduling requirement (operator of an expensive piece of testing equipment perhaps) has to be identified as a service provider within this entity.

Service Provider Id	System assigned canonical id
Privacy Indicator	Set to 1 if this Service Provider does not want their information made available in publically viewable screens
Gender	Male, Female
Cultural Ethnicity Code	Used to match on referrals – cultural sensitivity.
Start Date	The effective start date for this entry.
End Date	The effective end date for this entry
Status	The status of this provider: Unapproved, Active, Suspended, Deleted

17.1.13 Service Provider Name:

A service provider may be known by one or more names distinguished by type and purpose. For example: married name, professional name, birth name, and so on. Also, any one of those names may be identified as the preferred name or the legal name.

Name Type	Professional Married Birth Name by Repute
Name Purpose	Mailing Cheques

	Correspondence
Legal Indicator	Set to 1 for the legal name, 0 for a non-legal name
Preferred Name	Set to 1 for the preferred name, 0 otherwise.
Name Text	The name referenced.
Start date	When the name became effective
End Date	When the name became no longer used.

17.1.14 Service Provider Address:

A service provider may have zero, one or more addresses that relate to them personally outside of the context of any agency relationship. Each address is identified by type and purpose. For example: residence, mailing, and so on. These are generally used by administrators (college or regulating body perhaps) and are normally protected from general view.

Service Provider Id	From Service Provider entity
Address Line 1	Civic address part
Address Line 2	Civic address part
Jurisdiction	(City, Town, Village, Area) points within a hierarchy that travels from Country down to the lowest level of jurisdiction within the specified country.
Postal Identification code	Postal code, zip code, etc.
Address Type	Residential, Business, Temporary
Address Purpose	Mailing, Delivery, Shipping
Start Date	The first day on which this address is effective

End Date	The last day on which this address is effective
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17.1.15 Service Provider Contact Point:

A service provider may have zero, one or more contact points that relate to them personally outside the context of any agency relationship. Each contact point is identified by a type and a purpose. An example of a contact point that is personal might be: a home fax number, a cell phone number, or an email address. These are generally used by administrators (college or regulating body perhaps) and are normally protected from general view.

Service Provider Id	From Service Provider above
Contact Point Type	Phone, Fax, Pager, email
Contact Point Equipment	Cell, Fixed Line, TTY, NA
Contact Point Purpose	Residential, Business, Personal
Contact Point Text	The contact reference
Contact Point Format String	A string indicating how the reference is to be understood. Email for example would indicate [a-z, 1-0, ‘.-’]*@[a-z, 1-0, ‘.-’]*
Start Date	The first day on which this contact point becomes effective.
End Date	The last day on which this contact point is effective.

17.1.16 Service Provider Identifier:

A service provider may be known by various identifiers issued by numerous authorities. Each identifier is specified with a type as well as the issuing authority and a controlling authority. These identifiers could represent things as mundane as a passport number to clinical identifiers such as a provider’s health billing number.

Service Provider Id	From the Service Provider entity above
Identifier Type	Medical Record Number, Driver's License, Provincial Health Number, National Health Number, etc.
Identifier Issuing Authority	Provincial Department of Health, St. Michael's Hospital (for example)
Identifier Controlling Authority	Public Works and Government Services, Health Region (for example)
Identifier Text	
Start Date	The effective start date of this identifier
End Date	The effective end date of this identifier
Privacy Indicator	If set to 1, this identifier will not show up on view screens – but may be used in searches to find a service provider.

17.1.17 Service Provider Credential:

A service provider may have zero, one or more credentials indicating their academic and professional certifications.

Service Provider Id	From Service Provider entity above
Credential Code	A code from a predefined credential list.
Start Date	The effective start date of this entry
End Date	The effective end date of this entry

Status	Unverified, Verified, Not Valid
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17.1.18 Service Provider Qualifications:

A service provider may have zero, one or more qualifications based on their experience and training.

Service Provider Id	From Service Provider entity above
Qualification Code	A code from a predefined qualification list.
Start Date	The effective start date of this entry
End Date	The effective end date of this entry
Status	Unverified, Verified, Not Valid

17.1.19 Service Provider Practice/Service:

A service provider offers a Service based upon their credentials and qualifications.

Service Provider Id	From Service Provider entity above
Practice/Service Code	A code from a predefined specialty list.
Start Date	The effective start date of this entry
End Date	The effective end date of this entry
Status	Unverified, Verified, Not Valid

17.1.20 Service Provider Site Specialty:

A service provider, in addition to the base Practice/Service offered, may be able to work under only specified specialties within a given site. If a hospital, for example, the physician provider may only be licensed to act in one specialty, whereas in another site, they may be able to work in different specialties.

Service Provider Id	From Service Provider entity above
Service Site	From Service Site entity below
Specialty Code	A code from a predefined specialty list.
Start Date	The effective start date of this entry
End Date	The effective end date of this entry

17.1.21 Service Provider Language:

A service provider is able to deliver services in one or more languages. This entity records the capabilities of the provider within the identified languages, and is useful for the referral processes.

Service Provider Id	From Service Provider entity above
Language Code	A code from a predefined language list.
Start Date	The effective start date of this entry
End Date	The effective end date of this entry

17.1.22 Service Provider License / Registration:

A service provider may be regulated by one or more external bodies, and only able to practice at the discretion of those bodies. This entity holds the particular status of the service provider within the various bodies under which they are controlled.

Service Provider Id	From Service Provider entity above
Governing Body	From a reference table of governing bodies
Status	Status of this provider within this governing body (Member in good standing, Pending Status, Suspended, Under Investigation, Removed)
Start Date	The effective start date of this entry
End Date	The effective end date of this entry

17.1.23 Service Provider Service Site:

A service provider may work from zero, one or more service sites.

Service Provider Id	From the Service Provider entity
Service Site Id	From the Service Site Entity
Start Date	The effective start date of this entry
End Date	The effective end date of this entry
Status	The status of the provider within this site. Approved, Pending, Unapproved, Deleted

17.1.24 Service Provider Site Role:

A service provider may be restricted to zero, one or more roles within a site.

Service Provider Id	From the Service Provider entity
Service Site Id	From the Service Site Entity
Start Date	The effective start date of this entry
End Date	The effective end date of this entry
Role	The role the service provider plays within the site. Defined in a reference list of valid roles.

17.1.25 Service Provider Referral Method:

A service provider may specify zero, one or more referral methods under which they may be referred by colleagues.

Service Provider Id	From the Service Provider entity
Referral Method Code	A code that identifies a referral method that is acceptable to this provider
Start Date	The effective start date for this association
End Date	The effective end date of this association

17.1.26 Service Site Provider Referral Method:

A service provider can specify the referral methods which are applicable to them for a given service location.

Agency Id	From the Agency entity
Service Site Id	From the Service Site Entity
Service Provider Id	From the Service Provider entity
Referral Method Code	A code that identifies a referral method that is acceptable to this provider within this agency at this site.
Start Date	The effective start date for this association
End Date	The effective end date of this association

17.1.27 Service Site Provider Contact Point:

A service provider may have specific contact point information that is relevant to a particular service site. Each contact point is described by a type and a purpose.

Agency Id	From the Agency entity
Service Site Id	From the Service Site entity
Service Provider Id	From Service Provider
Contact Point Type	Phone, Fax, Pager, email
Contact Point Equipment	Cell, Fixed Line, TTY, NA
Contact Point Purpose	Residential, Business, Personal
Contact Point Text	The contact reference
Contact Point Format String	A string indicating how the reference is to be understood. Email for example would indicate [a-z, 1-0, '._-']*@[a-z, 1-0, '._-']*
Start Date	The first day on which this contact point becomes effective.

End Date	The last day on which this contact point is effective.
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17.1.28 Service Site:

A service site is some place where service is provided. This may be a bricks-and-mortar location, a mobile laboratory, a temporary location, or any other relevant site.

Service Site Id	A system assigned Id for each unique service site
Description	A textual description of the service site
Service Availability Time Block	The size of the time block used to define availability schedules for this site: expressed in hours.
Start Date	The effective start date of this service site
End Date	The effective end date of this service site

17.1.29 Service Site Geographical Coordinates:

A service site may be described in many different ways in order to place the site into a geographical context. For example: one method is to assign to each site a longitude, latitude and altitude. Another method is to assign each site within some larger context such as a bounded area which could be defined by postal codes, electoral districts, or some other means of dividing areas. Each method of description is represented by a different instance within this entity, allowing a service site to have zero, one or more geographical definitions.

Service Site Id	From the Service Site entity
Geo Reference Id	A unique id assigned within this entity
Geo Reference Method Code	A code that defines the geo method being used

Geo Text 1	A text field defining the first value in the coordinates required (ie: longitude)
Geo Text 2	A text field defining the second of the coordinates required (ie; latitude)
Geo Text 3	A text field defining the third of the coordinates required (ie: altitude)
Start Date	The effective start date of this entry
End Date	The effective end date of this entry

17.1.30 Service Site Contact Point:

A service site may have zero, one or more contact points associated with it. Each contact point is described through a type and purpose.

Service Site Id	From the Service Site entity
Contact Point Type	Phone, Fax, Pager, email
Contact Point Equipment	Cell, Fixed Line, TTY, NA
Contact Point Purpose	Residential, Business, Personal
Contact Point Text	The contact reference
Contact Point Format String	A string indicating how the reference is to be understood. Email for example would indicate [a-z, 1-0, '._-']*@[a-z, 1-0, '._-']*
Start Date	The first day on which this contact point becomes effective.
End Date	The last day on which this contact point is effective.

17.1.31 Service Site Address:

For a fixed service site, there may be zero, one or more addresses specified. Each address is described through a type and purpose.

Service Site Id	From Service Site entity
Address Line 1	Civic address part
Address Line 2	Civic address part
Jurisdiction	(City, Town, Village, Area) points within a hierarchy that travels from Country down to the lowest level of jurisdiction within the specified country.
Postal Identification code	Postal code, zip code, etc.
Address Type	Residential, Business, Temporary
Address Purpose	Mailing, Delivery, Shipping
Start Date	The first day on which this address is effective
End Date	The last day on which this address is effective

17.1.32 Service Site Referral Method:

A service site may identify the referral methods that are appropriate to its circumstances.

Service Site Id	From the Service Site entity
Referral Method Code	A code that identifies a referral method that is acceptable to this site
Start Date	The effective start date for this association
End Date	The effective end date of this association

17.1.33 Service Site Instance Characteristic:

Characteristics are those things of interest to the business that further define a service site. This is table driven, so there is not a set list of characteristics defined. In general, the characteristics that one defines would assist in locating a service site with appropriate capability for the given referral one is trying to make. (One example of a characteristic might be whether the site is accessible to wheel chairs.)

Service Site Id	From the Service Site entity
Characteristic Id	From the Characteristic reference table
Characteristic Value	The content value of the specified characteristic
Start Date	The effective start date of this entry
End Date	The effective end date of this entry

17.1.34 Service Site Identifier:

A service site may be known by many different coding systems across the portfolio of systems that interact. This entity provides for cross-referencing those identifiers to a single common identifier (canonical id.) Each identifier is described by a type, issuing authority and controlling authority.

Service Site Id	From the Service Site entity
Identifier Type	System Identifier, Global Reference, Jurisdiction Reference
Identifier Issuing Authority	Provincial Department of Health, St. Michael's Hospital (for example)
Identifier Controlling Authority	The body responsible for governance of the id. In this case, it could be an external system
Identifier Text	
Start Date	The effective start date of this identifier
End Date	The effective end date of this identifier
Privacy Indicator	If set to 1, this identifier will not show up on view screens – but may be used in searches to find a service site.

17.1.35 Service Site Target Group:

Some service sites are directed to specific target groups: the site might be on a reserve and available to First Nations peoples. A site might be in existence to serve the HIV community, and so on. This entity allows a site to be classified if required.

Service Site Id	From the Service Site entity
Target Group Id	From the Target Group reference

	table
Start Date	The effective start date of this entry
End Date	The effective end date of this entry

17.1.36 Service Site Setting:

This entity describes the service site with respect to facilities arrangement. Is this a walk-in clinic, a corporate office environment, a surgical suite, and so on?

Service Site Id	From the Service Site entity
Setting Id	From the Setting reference table
Start Date	The effective start date of this entry
End Date	The effective end date of this entry

17.1.37 Agency Service Site Catchment Area:

This entity provides for grouping service sites into geographical areas appropriate for specific agencies, each with their own catchment area. This is to assist in the selection of sites for referral management.

Agency Id	From the Agency entity
Service Site Id	From the Service Site entity
Catchment Area Id	From the Catchment Area reference table
Start Date	The effective start date of this entry
End Date	The effective end date of this entry

17.1.38 Service Site Availability:

This entity identifies the hours of operation for this service site. The calendar may be different than that of associated providers or agencies and is used in booking and in managing calendars under resources and providers.

Service Site Id	From Service Site entity
Date	Year/Month/Day of entry
Time Available	Expressed in time blocks from Service Site
Start Date	Effective Start date of this entry
End Date	Effective end date of this entry

17.1.39 Service Site Resource:

A service site may have zero, one or more additional resources other than service providers, which can be evaluated for referrals, and if necessary, booked.

Service Site Id	From the Service Site entity
Resource Id	From the Resource entity
Start Date	The effective start date of this association
End Date	The effective end date of this association
Resource Booking Time Block	The size of the time block used in booking this resource at this site. Expressed in minutes.

17.1.40 Provider Service Site Availability:

A provider within a given service site, has a calendar as to when they are available. Waitlist management would book against this calendar. The service site availability must mesh with the service site calendar and any restrictions on related resource availability. A provider can specify availability in configurable time segments which can vary from those used within related resources. For example, at one site a provider may book 15 minute blocks, whereas at another site they may book 30 minute blocks.

Provider Service Site Availability Id	A system generated unique value for this time block at this site, for this provider.
Service Site Id	From Service Site entity
Service Provider Id	From Service Provider entity
Date	Year/Month/Day of entry
Time Block Start	The start time of a specified block
Time Block End	The end time of a specified block

17.1.41 Service Site Resource Availability:

A resource within a given service site may have an availability schedule that is based on the cycle times required of the resource. For example, an MRI may have a different loading capacity than a dialysis machine. Each must be able to specify its availability in appropriate blocks of time which may vary from each other, and from those of any service providers. It is against this schedule that any appointments are booked within waitlist management.

Resource Availability Id	A unique id reserved for this block of time for this Site and Resource
Service Site Id	From Service Site entity
Resource Id	From Resource entity
Date	Year/Month/Day of entry
Time Block Start	The start time of a specified block
Time Block End	The end time of a specified block

17.1.42 Resource:

A resource is any specialized piece of equipment (testing or otherwise) that may be scheduled either directly or through a service provider appointment.

Resource Id	A unique system assigned Id for each resource
Description	A description of the resource
Resource Type	A code that classifies the resource
Start Date	The effective start date for this entry
End Date	The effective end date for this resource

17.1.43 Resource Restricted Availability:

A resource may have periods of time when it is not available due to preventive maintenance, shut down, break and repair, and so on. This entity may contain no entries, in which case the resource is fully available, or may contain black-out periods when the resource is no longer available.

Resource Id	From Resource entity
Date	Year/Month/Day of entry
Time Block Start	The start time of a specified block
Time Block End	The end time of a specified block
Reason Code	A code that specifies the reason as to why the resource is not available within this time block

17.1.44 Resource Instance Capability Characteristic:

A resource may be qualified é described by certain characteristics that allow it to be better identified in automated searching / matching during the eReferral processes. This entity provides for predefined characteristics to be linked to a given resource.

Resource Id	From the Resource entity
Characteristic Id	From the Characteristic reference table
Characteristic Value	The content value of the specified characteristic
Start Date	The effective start date of this entry
End Date	The effective end date of this entry

17.1.45 Resource Identifier:

A resource may be known by any number of external identifiers. This entity records any identifiers that would assist in finding a resource whether through a manual or automated interface.

Resource Id	From the Resource entity
Identifier Type	System Identifier, Global Reference, Jurisdiction Reference
Identifier Issuing Authority	Provincial Department of Health, St. Michael's Hospital (for example)
Identifier Controlling Authority	The body responsible for governance of the id. In this case, it could be an external system
Identifier Text	
Start Date	The effective start date of this identifier
End Date	The effective end date of this

	identifier
Privacy Indicator	If set to 1, this identifier will not show up on view screens – but may be used in searches to find a resource.

17.1.46 Site Resource Booking:

A resource at a given site may be booked either independently (link to Client) or through a provider booking (link to Provider Service Site Booking.) A resource must be booked in increments of time as defined within the related Service Site Resource Availability entity. This entity is referenced exclusively by waitlist management.

Resource Availability Id	From Service Site Resource Availability entity
Client Id	From the Client Registry
Provider Service Site Booking Id	From the Provider Service Site Booking entity

17.1.47 Provider Service Site Booking:

A provider is booked in increments of time as determined within the Provider Service Site Availability entity. This entity is referenced exclusively by waitlist management.

Provider Service Site Availability Id	From the Provider Service Site Availability entity
Client Id	From the Client Registry
Referral Reference Id	A reference id from an external referral system that identifies who has referred this client into this availability slot.