RESOURCE AND PATIENT MANAGEMENT SYSTEM

IHS Standard Terminology Application Programming Interface

(BSTS)

Addendum to the Technical Manual

Version 1.0 Patch 4
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Office of Information Technology
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Preface

The purpose of this manual is to provide technical information about the Indian Health Service (IHS) Standard Terminology (BSTS) package, specifically changes introduced in Patch 4 of the v1.0 release. The BSTS package contains a number of Application Programming Interface (API) calls developed to interface with Apelon’s Distributed Terminology System (DTS). These APIs provide a general interface and caching mechanism for MUMPS-based/FileMan-based systems to interact with an external terminology server, specifically DTS.

DTS 4.2, provided by Apelon, Inc. (Apelon) is a comprehensive open source solution for the acquisition, management, and practical deployment of standardized terminologies, with local enhancements, into distributed application environments. DTS establishes a single common resource for an organization’s terminology assets that can be deployed across the spectrum of health information delivery systems.
1.0 Introduction

The BSTS package is a component of the IHS Resource and Patient Management System (RPMS) that provides a general interface and caching mechanism for MUMPS-based/FileMan-based systems to interact with an external terminology server, specifically DTS. The APIs are designed to be application independent, and stand-alone interfaces.

This manual provides IHS site managers with a technical description of the BSTS APIs, routines, files, menus, cross references, globals, and other necessary information required to effectively use the APIs from an external application to access Systematized Nomenclature of Medicine-Clinical Terms (SNOMED CT®), RxNorm, Unique Ingredient Identifier (UNII) codesets as well as IHS defined custom mapping codesets located in an external terminology service. The APIs also have the flexibility to retrieve other terminologies from DTS in the future, such as, International Classification of Diseases (ICD) codes.

All APIs, routines, files, options, and keys are namespaced starting with the letters BSTS. The file number range for this package is 9002318–9002318.99.
2.0 Orientation

The BSTS package consists of a set of APIs to be called from an external application to search and return valid terminology concepts and associated information. The API package is distributed as a Kernel Installation and Distribution System (KIDS) package which contains the appropriate files and routines to enable data storage, auditing, logging, and performance metrics and tools for monitoring and analysis, and a formal error handling and reporting mechanism.

Interaction between the external application (e.g., IHS Electronic Health Record (EHR), iCare) and the DTS is accomplished through the BSTSs via web service calls or requests. All APIs in this package begin with the namespace letters BSTS.

A high-level diagram of the terminology services architecture is shown in Figure 2-1. Each of the main components identified is detailed in the sections that follow.

![High-level Application Architecture Diagram for the IHS Terminology Services Solution](image-url)
2.1 RPMS Applications

Pictured on the left-hand portion of Figure 2-1 are the various RPMS applications that interact with the terminology systems. Several development modalities exist for these RPMS applications, including those created using Microsoft® .NET Framework, components with the IHS EHR, as well as the traditional character based *green screen* applications.

Each of these types of applications connects to RPMS in different ways.

- The Microsoft .NET applications use an ADO.NET adapter for RPMS that is called BMXNet.
- The EHR components use a Remote Procedure Call (RPC) broker mechanism referred to as the “CIA Broker”.
- The character-based applications are executed directly within the RPMS InterSystems Caché® database and therefore have direct access to the RPMS database.

In the proposed solution, each of these types of applications would continue to interact with RPMS using the same mechanisms they currently use and would interact with the terminology services via the new RPMS Terminology Services API described within this document.

2.2 Terminology Service RPMS API

For the initial set of SNOMED CT related use cases, applications will interact with a new MUMPS-based API that exposes functions and classes that encapsulate the interface with the DTS terminology server. This API will return information in familiar data array format and will eliminate the need for the applications to directly interface with the web service interface and related Extensible Markup Language (XML) messaging.

While this RPMS API is expected to be the primary means through which RPMS-based applications will interact with the terminology server functions, there may be valid use-cases that arise in the future that would be best accommodated through direct web-service interaction with the terminology service. There is nothing that would preclude this direct access by applications in the future.

The majority of this technical manual is focused on describing the current implementation of this terminology API.
2.3 Stand-alone Terminology Service Instance

The terminology service solution component selected for this proposed design is the DTS Version 4.2 created by Apelon. Specific information about the DTS 4.2 application follows:

- **Solution/Product Name**: Apelon DTS Version 4.2
- **Company Website**: [http://www.apelon.com](http://www.apelon.com)
- **Description**: Apelon DTS is developed and supported by Apelon and consists of the following components:
  - A core terminology server
  - DTS Editor, a standalone application for managing the terminologies on the server
  - DTS Browser, a web-based front-end for viewing terminology trees
  - Import and Migration utilities
  - API and Web Services to support application development
- **Licensing**: Open Source (Apache License Version 2)
- **Cost**: The DTS 4.2 software is currently available at no cost. Apelon offers other paid services for standard code-set updates and mapping information from published sources. Annual fee is $20K for content subscription for all of IHS organization.
- **Support**: Available as a paid service from Apelon. Annual fee is $15K per year for full support services. Ad hoc support and training also available.
- **Developer Communities**: (Open source, etc.) Yes, but not a large participation at this point.
- **Active Development**: Current version in use is DTS Version 4.2, released in January 2015.
- **Language Support**: English
- **Server-side Operating System (OS)/Platform**: Java™, JBoss® AS 7
- **Client-side OS/Platform**: Client applications are written in Java, and as such have wide platform support. Also browser access for browsing and searching terminology included.
- **Terminology Database Storage Options**:
  - Windows®:
    - Oracle® Database 10g or 11g Standard or Enterprise Edition
• Microsoft SQL Server® 2005, 2008
• InterSystems Caché 2010.2 or later
• IBM DB2® 9.7 Workgroup or Enterprise Edition
• MySQL 5.5
  – Linux:
    • Oracle Database 10g or 11g Standard or Enterprise Edition
    • InterSystems Caché 2010.2 or later
    • IBM DB2 9.7 Workgroup or Enterprise Edition
    • MySQL 5.5
• API/Interoperability Capabilities:
  – Java and .NET Application APIs, Web services (Version 4).
  – CTS2 compliant web interface on development roadmap for 2013, but not included in the initial version 4 release. Option exists to develop a subset of CTS2 interface implementation.
• Adopters:
  – Amgen
  – Axolotl
  – Canada Health Infoway
  – CHCA
  – Elsevier
  – Epocrates
  – Harris
  – Hong Kong Hospital Authority and Hong Kong MoH
  – HP (Federal and S&L)
  – Humedica
  – IBM
  – JEMBI (South Africa)
  – Kaiser
  – MMModal/MedQuist
  – Next Gen
  – Premier
  – NASA
  – New York State Office of Mental Health
  – SSA
Additional design information for the terminology service architecture to support utilization of terminologies such as SNOMED CT is documented in the document titled “IHS Terminology Services – High-level Technical Design Version 1.5”.
3.0 Implementation and Maintenance

The BSTS APIs are designed to provide a MUMPS-based programming interface for RPMS development teams to work with terminology data. The API in turn uses a web service interface to interact with with the terminology servers, with the initial implementation being an interface with the Apelon DTS 4.2 terminology service.

3.1 General Information

The following table shows the prerequisite patch requirements:

Table 3-1: Prerequisite Patch Requirements

<table>
<thead>
<tr>
<th>Package and Version</th>
<th>Associated Patch Designations</th>
<th>Brief Patch Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IHS STANDARD TERMINOLOGY 1.0 (BSTS)</td>
<td>v1.0 Release, p3</td>
<td>The Patch 3 release of the BSTS package. It contains updates to support the ICD-10 implementation in EHR.</td>
</tr>
</tbody>
</table>

3.2 System Requirements

The following table shows the versions of other packages that should be installed for BSTS to work properly. These packages are not required for the installation of p4. However, they already would have been installed as required patches for the installation of BSTS v1.0.

Table 3-2: System Requirements

<table>
<thead>
<tr>
<th>Module</th>
<th>Minimum Version</th>
<th>Recommended Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensemble 2012</td>
<td>v2012.2</td>
<td></td>
</tr>
<tr>
<td>VA FileMan (DI)</td>
<td>v22.0 p1017</td>
<td></td>
</tr>
<tr>
<td>IHS/VA Utilities (XB)</td>
<td>v3.0 through p11</td>
<td></td>
</tr>
<tr>
<td>IHS Kernel Toolkit (XT)</td>
<td>V7.3 through p1017</td>
<td></td>
</tr>
<tr>
<td>VA Kernel (XU)</td>
<td>v8.0 p1017</td>
<td></td>
</tr>
</tbody>
</table>

3.3 Package-wide Variables

There are no package-wide BSTS variables in RPMS.
3.4 Security Keys

The security keys that govern BSTS, which can be assigned to users, are:

Table 3-3: Security Keys

<table>
<thead>
<tr>
<th>Key Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSTSZMENU</td>
<td>This security key should only be assigned to those persons, who will manage the BSTS system, and should not be given to the general RPMS user population.</td>
</tr>
</tbody>
</table>

3.5 Codeset Updates

3.5.1 Update Methods

The BSTS application uses a number of different codesets and custom mappings. With the release of p3 updates to these codesets and mappings are now available for retrieval from the connection to the DTS server. Information can be retrieved in two different ways.

First, an automated process will check daily to see if each codeset version number has changed from what is on file locally. If the version numbers of a codeset are different it will kick off a background process to refresh that codeset. Subset refreshes are handled a little differently. Subset refresh frequency is based on the BSTS SITE PARAMETERS file REFRESH SUBSETS EVERY # DAYS field value (as documented in the Addendum to Installation Guide and Release Notes document for the p4 release). If the number of days between subset refreshes exceeds the days specified by the parameter, then a subset refresh background process will be kicked off. With the release of p4, any of these background processes will now be scheduled to run after six o’clock PM at the site.

The second method to updating codesets and mappings is by manually kicking of an update using the Refresh IHS Standard Terminology Local Cache option which is explained in Section 4.2.5 of this document. Running this option will immediately kick off a background process to update the specified codeset or mapping.

Table 3-1 shows the list of codesets delivered with the BSTS application. The codesets listed that have a CURRENT VERSION assigned are capable of being updated using the update mechanisms described previously.
3.5.2 Periodic Updates

It is the intention of the IHS terminology staff to provide periodic updates to the BSTS codesets described previously. Some of the more common updates:

- **SNOMED CT subsets.** The plan is to provide updates to subsets every thirty to sixty days. These updates will be pulled down from the server based on the BSTS SITE PARAMETERS file REFRESH SUBSETS EVERY # DAYS field value. If the subset updates are desired earlier, the update process can be manually started using the Refresh IHS Standard Terminology Local Cache option.

- **SNOMED to ICD10 mappings.** As mapping updates become fine tuned, new releases of the 32777 codeset will become available. The updates, once loaded into the DTS Production server, will be pulled down automatically by the site approximately one day later (depending on the time that the server is updated with the new mappings). The update can also be manually kicked off if desired using the Refresh IHS Standard Terminology Local Cache option.

- **SNOMED CT codeset updates.** Twice a year a new SNOMED CT codeset version will become available. These updates, once loaded into the DTS Production server, will begin to automatically be refreshed at the sites within approximately one day.
3.6 DTS Connection Failover Handling

3.6.1 Regular API calls

With the release of p2 (which automatically shut the DTS link off if a connection error was received), it was determined that occasionally network or other disruptions at the sites were causing requests to the DTS server to fail, even though the DTS server itself was up and running. These disruptions were causing sites’ DTS connections to revert to local mode fairly often. To address this issue, each web service call to the DTS server was modified so that it will immediately make another attempt at connecting to the server if the current attempt results in any error, other than a timeout error. The number of times that the process will attempt to make the call relies on the (currently hidden) BSTS WEB SERVICES ENDPOINT file RETRIES ON FAILURE field. The default value for this field is one, meaning if a call to DTS errors out, it will try one more time before turning off the link. Typically, if the DTS server is not down, the second attempt will succeed. If a site does however experience frequent network disruptions, incrementing this setting to a two or three (using FileMan to modify the setting) might allow for more connections to complete and for the DTS link to therefore remain online.

3.6.2 Background Processing

As detailed in Section 3.5, the BSTS application relies on background processing to keep its codesets and mappings up to date. In order for the updates to work properly it is necessary that the site link to the DTS server be up and running while the processes are running. The following special logic has been included with p4 which will attempt to handle connection disruptions while a background process is running:

- The immediate call retry logic detailed in Section 3.6.1 has been implemented for all calls used by the background processes
- Prior to making each remote API call, logic will attempt to force the DTS link back online. This logic will override any attempts by users to turn off the link manually using the “Turn off the DTS Link” selection in the “Check Terminology Web Service Status” BSTS menu option. If a user turns the link off using the option, the next call by the background process will immediately turn it back on.
- Should an actual interruption occur between the site and the DTS server, meaning the connection attempts detailed in Section 3.6.1 all fail, further logic is in place to try to get the process to finish. This additional logic functions as follows:
  - After the failover handling documented in Section 3.6.1 fails to make a successful connection, background processes will attempt to repeat the handling documented in Section 3.6.1. The number of times this process is repeated depends on the value of the (hidden) MAX FAILURES BEFORE WAITING field in the BSTS WEB SERVICE ENDPOINT file. The default
value for this field is ten, meaning that the Section 3.6.1 logic will be repeated ten times before moving to the next step in the failover logic.

- If a successful connection to the DTS server is still not established using the prior logic, background process will enter a wait state. For the first six times this state is reached, the process will wait for five minutes before trying to make connection to the DTS server again using the same failover logic listed in the prior steps. This means that background processes will attempt to connect after waiting for five minutes, ten minutes, fifteen minutes, twenty minutes, twenty-five minutes, and finally thirty minutes. If a successful connection cannot be made after this period then background processes will wait for a longer period before attempts. The length of this wait period is determined by the value of the (hidden) UPDATE FAILURE WAIT TIME field in the BSTS WEB SERVICE ENDPOINT file. The default value for this field is two hours, meaning that after the initial checks of every five minutes for the first thirty minutes, the remaining checks will occur after two and a half hours, four and a half hours, six and a half hours, eight and a half hours, ten and a half hours, and twelve and a half hours.

- If, after twelve and a half hours, a connection to the DTS cannot be made, the background process will terminate. Because the process has not been completed however, the same process will be attempted again the next time the background process runs which should be after six o’clock PM.

Table 3-4 illustrates the failover logic call attempts for the background processing when the connection to the DTS server is not available and the field settings are set to the default values.

Table 3-4: Failover logic attempts

<table>
<thead>
<tr>
<th>Elapsed Time (minutes)</th>
<th>Call Attempt</th>
<th>Call Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>Attempt 1 - Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>Attempt 1 - Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>3</td>
<td>Attempt 2 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>4</td>
<td>Attempt 2 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>5</td>
<td>Attempt 3 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>6</td>
<td>Attempt 3 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>7</td>
<td>Attempt 4 - Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>8</td>
<td>Attempt 4 - Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>9</td>
<td>Attempt 5 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>10</td>
<td>Attempt 5 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>11</td>
<td>Attempt 6 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>12</td>
<td>Attempt 6 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>Elapsed Time (minutes)</td>
<td>Call Attempt</td>
<td>Call Result</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>0</td>
<td>13</td>
<td>Attempt 7 - Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>14</td>
<td>Attempt 7 - Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>15</td>
<td>Attempt 8 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>16</td>
<td>Attempt 8 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>17</td>
<td>Attempt 9 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>18</td>
<td>Attempt 9 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>19</td>
<td>Attempt 10 - Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>0</td>
<td>20</td>
<td>Attempt 10 - Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>21</td>
<td>Attempt 1 - Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>22</td>
<td>Attempt 1 - Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>23</td>
<td>Attempt 2 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>24</td>
<td>Attempt 2 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>25</td>
<td>Attempt 3 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>26</td>
<td>Attempt 3 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>27</td>
<td>Attempt 4 - Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>28</td>
<td>Attempt 4 - Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>29</td>
<td>Attempt 5 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>30</td>
<td>Attempt 5 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>31</td>
<td>Attempt 6 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>32</td>
<td>Attempt 6 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>33</td>
<td>Attempt 7 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>34</td>
<td>Attempt 7 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>35</td>
<td>Attempt 8 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>36</td>
<td>Attempt 8 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>37</td>
<td>Attempt 9 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>38</td>
<td>Attempt 9 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>39</td>
<td>Attempt 10 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>5</td>
<td>40</td>
<td>Attempt 10 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>10</td>
<td>41</td>
<td>Attempt 1 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>60</td>
<td>Attempt 10 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>15</td>
<td>61</td>
<td>Attempt 1 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>80</td>
<td>Attempt 10 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>20</td>
<td>81</td>
<td>Attempt 1 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td>Elapsed Time (minutes)</td>
<td>Call Attempt</td>
<td>Call Result</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>100</td>
<td>Attempt 10 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>25</td>
<td>101</td>
<td>Attempt 1 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td></td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>120</td>
<td>Attempt 10 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>30</td>
<td>121</td>
<td>Attempt 1 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td></td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>140</td>
<td>Attempt 10 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>150</td>
<td>141</td>
<td>Attempt 1 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td></td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>160</td>
<td>Attempt 10 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>270</td>
<td>161</td>
<td>Attempt 1 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td></td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>270</td>
<td>180</td>
<td>Attempt 10 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>390</td>
<td>181</td>
<td>Attempt 1 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td></td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>390</td>
<td>200</td>
<td>Attempt 10 – Section 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>510</td>
<td>201</td>
<td>Attempt 1 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td></td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>510</td>
<td>220</td>
<td>Attempt 10 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>630</td>
<td>221</td>
<td>Attempt 1 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td></td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>630</td>
<td>240</td>
<td>Attempt 10 – Sect 3.6.1 try 2 &lt;fail&gt;</td>
</tr>
<tr>
<td>750</td>
<td>241</td>
<td>Attempt 1 – Sect 3.6.1 try 1 &lt;fail&gt;</td>
</tr>
<tr>
<td></td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>750</td>
<td>260</td>
<td>Attempt 10 – Sect 3.6.1 try 2 &lt;fail&gt;. Upon failure, the background process will terminate and the process will be attempted again after six PM</td>
</tr>
</tbody>
</table>
4.0 Menu Diagram

4.1 RPMS Menus in the BSTS System

IHS Standard Terminology Management [BSTSMENU]. This menu option requires key BSTSZMENU and contains the following options for managing BSTS:

- **Add/Edit Terminology Web Service** [BSTS WEB SERVICE]. Updates information about web services used by the site. This option requires the BSTSZMENU security key.

- **Edit Terminology Site Parameters** [BSTS EDIT SITE PARAMETERS]. Updates site specific configuration settings. This option requires the BSTSZMENU security key.

- **Description ID Population Utility** [BSTS DESC ID UTILITY]. This option reviews DTS description ids recorded in several files and makes sure that a term can be retrieved for that description id.

- **Terminology Web Service Test** [BSTS TEST WEB SERVICE]. Performs a test call to a web service. This option requires the BSTSZMENU security key.

- **Refresh IHS Standard Terminology Local Cache** [BSTS REFRESH LOCAL CACHE]. This option allows users to refresh the SNOMED with US Extentions codeset subsets or lets users select a custom mapping codeset and refresh its values.

- **Check Terminology Web Service Status** [BSTS CHECK WEB SERVICE]. This option is a utility which allows site managers to monitor and control the DTS interface link.

4.2 Menu Option Descriptions

4.2.1 Add/Edit Terminology Web Service

Site Managers use this option to enter the connection properties for the server (or servers) that their site will use to retrieve codeset information. With the release of BSTS v1.0 p2, the values needed for the site to connect to the IHS DTS PRODUCTION server are listed in Figure 4-1. P4 does not change these settings. Figure 4-1 shows a sample display for a connection to the DTS production server:

```
Select IHS Standard Terminology Management Option: WEB  Add/Edit Terminology Web Service
Select BSTS WEB SERVICE ENDPOINT NAME: PRODUCTION SERVER
URL ROOT: https://dtsservices.ihs.gov  Replace
PORT NUMBER: 42102/
TYPE: DTS4/
TIMEOUT OVERRIDE: 60/"
```
Some of the properties listed previously are site adjustable. They can be modified to account for network issues and site preferences. These properties are explained as follows:

- **TIMEOUT OVERRIDE.** This is a maximum time a DTS web service call will wait for a query to finish before it quits (if null, the default is 60 seconds). If a DTS call exceeds this value, the BSTS application will switch over to local access mode. Note that this property pertains to all calls to DTS. Many of these calls happen in the background and are not apparent to the user. Care should be taken to set this property to a value less than 60 seconds. To control DTS maximum DTS search times, please adjust the **MAXIMUM REMOTE SEARCH TIME** property instead of this property.

- **CONNECTION TIMEOUT OVERRIDE.** This is the maximum time a DTS web service call will wait for a connection to be established to the DTS server (if null, the default is 2 seconds). Sites with slower network connections may need to adjust this setting to a higher value. Every attempt should be taken however to keep this value as low as possible to avoid longer waits during SNOMED concept lookups. If the time to establish a connection with the DTS server exceeds this value, the BSTS application will switch over to local access mode.

- **CHECK FOR DTS CONNECTION ON.** When the DTS server is operating in local access mode this property will contain a date and time in the future. This is the date and time after which the application will attempt to contact the DTS server again to see if it is online. If the value of this property is null, the connection to the DTS server is operating successfully.

- **MAXIMUM REMOTE SEARCH TIME.** If after a search call to DTS is completed it is determined that, even though the call was successful, it still took longer to complete than the number of seconds listed in this field, it will switch the server of to local access mode. This value should be less than or equal to the **TIMEOUT OVERRIDE** value.

- **CHECK FOR CONNECTION AFTER.** When the DTS server switches to local access mode, it will remain in local access mode until the number of minutes specified in this property are reached. When that wait period has been reached the next call made to DTS after that will attempt to restore connection to the server. If the server is back online or search calls are now returning within the allowable **MAXIMUM REMOTE SEARCH TIME**, the DTS link will be switched back on.
4.2.2 Edit Terminology Site Parameters

This option is used during the initial installation of the BSTS v1.0 application (please refer to the BSTS v1.0 Installation Manual for further details). The only parameters that may ever need to be adjusted after the initial installation are the REFRESH SUBSETS EVERY # DAYS parameter and the DAYS TO KEEP ERR RESPONSES parameter which are documented in Figure 4-2, which shows a typical entry in the BSTS SITE PARAMETERS file.

<table>
<thead>
<tr>
<th>Select OPTION NAME: BSTS EDIT SITE PARAMETERS</th>
<th>Edit Terminology Site Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edit Terminology Site Parameters</td>
<td></td>
</tr>
<tr>
<td>Select BSTS SITE PARAMETERS NAME:</td>
<td>2011 DEMO HOSPITAL</td>
</tr>
<tr>
<td>REFRESH SUBSETS EVERY # DAYS: 60</td>
<td></td>
</tr>
<tr>
<td>Select WEB SERVICE: PRODUCTION</td>
<td></td>
</tr>
<tr>
<td>Are you adding 'PRODUCTION' as a new WEB SERVICE (the 1ST for this BSTS SITE PARAMETERS)?</td>
<td>No// Y (Yes)</td>
</tr>
<tr>
<td>PRIORITY: 1</td>
<td></td>
</tr>
<tr>
<td>DAYS TO KEEP ERR RESPONSE: 14</td>
<td></td>
</tr>
<tr>
<td>Select WEB SERVICE:</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4-2 Sample BSTS SITE PARAMETERS File Entry

**REFRESH SUBSETS EVERY # DAYS.** Previous content releases of codeset and subset updates were included in KIDS releases. Future content releases will now be periodically pulled down from the Apelon DTS server. This setting controls how often to refresh the subsets stored locally at the site with the information stored on the remote DTS server. The minimum value for this parameter is fourteen days and the default setting is sixty days. It is expected that updates will be made available for download every thirty to sixty days. Since this refresh process can be system intensive and take several hours to run, care should be taken to keep this setting to as high a value as possible. If desired, the subset refresh process can always be kicked off manually if a subset update is released and the content is wanted immediately.

**DAYS TO KEEP ERR RESPONSES.** This parameter was previously titled DAYS TO KEEP RESPONSES and was not implemented in previous versions. For the p4 release, BSTS is now logging any attempted connections to the DTS server which did not complete successfully. This logged information is very helpful in troubleshooting connection issues at the site. Allowable values for this parameter are between seven days and thirty days. The default setting is fourteen days. An automatic nightly purge will now run which purges logged data which is older than the value specified in this parameter.
4.2.3 Description ID Population Utility

When sites upgraded from using the initial and p1 releases of the BSTS application to using p2, new SNOMED codeset content was made available. It was determined that the SNOMED content made available from Apelon for p2 contained duplicate terms as well as some existing terms which were active in the previous release but were now inactive. For any such term that was used in EHR while sites were running under the initial release or p1, sites were encountering issues with how the SNOMED term was getting displayed. In a number of cases, such as on the Integrated Problem List, terms were now showing up with an asterisk (*).

As a fix for these issues at the sites, a utility was developed which locates the terms with issues and attempts to replace them with a suitable SNOMED term. The utility has two options. The first option (option C) allows sites to check for issues. If issues are found during the check, the user will be prompted to fix the issues. They can also choose to run the option to fix the issues directly by choosing the (R) option in the menu. This option kicks off a background process (which starts two minutes in the future) which loops through several files and attempts to fix the identified issues.

This utility has been included in p4 as an option in the BSTS menu which sites can run if they encounter such issues. Figure 4-3 shows a sample run of the utility check and fix options. Note that the issues encountered will differ at each site. It is also possible that there is not a replacement SNOMED term for the one on file so it may not be able to be fixed.

<table>
<thead>
<tr>
<th>Select IHS Standard Terminology Management Option: DES Description Id Population Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>This utility will loop through files that contain SNOMED description ids and will check to make sure a term can be found for that description id. If a term cannot be found, it attempts to look in DTS for an exact match. For each match that is found the entry gets replaced with the new entry.</td>
</tr>
<tr>
<td>Select one of the following:</td>
</tr>
<tr>
<td>C Check for Missing Concept Detail</td>
</tr>
<tr>
<td>R Run Background Process to Fix Bad Entries</td>
</tr>
<tr>
<td>Q Quit</td>
</tr>
<tr>
<td>Enter response: Check for Missing Concept Detail</td>
</tr>
</tbody>
</table>

This option loops through the PROBLEM, PROVIDER NARRATIVE, FAMILY HISTORY and V POV files and locates concepts with no detail associated with them.

Are you sure you wish to proceed? ? No// YES

Reviewing PROBLEM file entries:

<table>
<thead>
<tr>
<th>Problem IEN</th>
<th>Patient</th>
<th>Description Id</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reviewing PROVIDER NARRATIVE entries:

<table>
<thead>
<tr>
<th>IEN</th>
<th>Description Id</th>
</tr>
</thead>
<tbody>
<tr>
<td>680509</td>
<td>229642003</td>
</tr>
<tr>
<td>680510</td>
<td>398760006</td>
</tr>
</tbody>
</table>
Reviewing VPOV entries:
VPOV IEN       Patient                    Visit Description Id

Reviewing FAMILY HISTORY entries:
IEN            Patient                                      Description Id

Concepts without detail were encountered

Would you like to job off the fix option now? ? No// YES

This option kicks off a background process which will attempt to fix concepts with no detail associated with them.

Are you sure you wish to proceed? ? No// YES

Figure 4-3 Sample run of Description Id Population Utility

4.2.4 Terminology Web Service Test
This option allow users to test the DTS server to see if it is properly returning results. The option is documented in the BSTS version 1.0 Installation Manual.

4.2.5 Refresh IHS Standard Terminology Local Cache
With the release of BSTS v1.0 p3, sites now have the ability to manually retrieve content updates made available for download. Sites can run this option to immediately get these content updates. This option kicks off a background task which will refresh the desired content. Depending on the selection, the process could take several hours to complete. Only one background process can be running at a time. Figure 4-4 shows a sample process being kicked off.

Select IHS Standard Terminology Management Option: REF Refresh IHS Standard Terminology Local Cache

This option allows sites to manually refresh IHS Standard Terminology (BSTS) information cached locally at the site. Using this option, the subsets associated with the 'SNOMED with US Extensions' codeset can be refreshed with up to date information retrieved from the Apelon DTS server. This option also allows custom codeset mappings to be refreshed with current mappings available through DTS.

Are you sure you want to do this? NO// YES

Select one of the following:

36        SNOMED CT US Extension Subsets
32771     IHS VANDF
32772     GMRA Signs Symptoms
32773     GMRA Allergies with Maps
32774     IHS Med Route
32775     CPT Meds with Maps
32777     SNOMED CT to ICD-10-CM Auto-Codeables
4.2.6 Check Terminology Web Service Status

This option allows site managers to quickly determine the status of the DTS connection, to turn the link on and off, and to adjust the setup properties for the connection. Figure 4-5 shows a sample display of this option.

Select IHS Standard Terminology Management Option: STS  Check Terminology Web Service Status

Select BSTS WEB SERVICE ENDPOINT NAME: PRODUCTION SERVER

Current Server Status:
- Web Service: PRODUCTION SERVER
- Current Status: ONLINE
- Offline Until: N/A
- Last Error Message: N/A

Current Server Settings:
- CHECK FOR CONNECTION AFTER: 60 minutes (default)
- CONNECTION TIMEOUT OVERRIDE: 2 seconds (default)
- MAXIMUM REMOTE SEARCH TIME: 60 seconds (default)
- TIMEOUT OVERRIDE: 60 seconds

Choose from the following options:
1. Refresh Current information
2. Check DTS and Enable if Available
3. Turn off the DTS Link
4. Edit Server Settings

Select number or return to quit: (1-4):

When running the option, the user will be prompted to enter the web service to monitor. Most sites will only have one web service (PRODUCTION or PRODUCTION SERVER) set up. After selecting the appropriate server, the user is presented a display similar to Figure 4-5. The user then has the following four options to choose from:

- **Refresh Current information.** Running this option will refresh the current screen. It will not attempt to check to see if the DTS server is now available. It is possible that the screen display might change by running this option if the DTS server status became enabled/disabled by another process attempting to perform a call to DTS.
- **Check DTS and Enable if Available.** This option will attempt to contact the DTS server. If the call is successful, it will place the server back online. If the call is not successful, it will update the Offline Until value to be the current date/time plus the number of minutes specified by the **CHECK FOR CONNECTION AFTER** property documented previously.

- **Turn off the DTS Link.** Running this option will manually turn off the link to DTS for the specified amount of time.

- **Edit Server Settings.** This option will allow the setup properties specified earlier to be adjusted.

With the release of p4, this option has been enhanced to display whether a BSTS related process is currently running in the background. Figure 4-6 shows that the new Description ID Population Utility is currently running.

```
Current Server Status:
Web Service:        PRODUCTION SERVER
Current Status:     ONLINE
Offline Until:      N/A
Last Error Message: N/A
Background process: Description Id Population Utility is running
                     Checking V POV file entry: 1522808
```

Figure 4-6 Status option showing process running in the background
5.0 Routine

5.1 Routines with Description

This routine list describes each routine in this version.

Table 5-1: Routine Descriptions

<table>
<thead>
<tr>
<th>Routine</th>
<th>Description</th>
<th>Modified for p4 Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSTS10P1</td>
<td>Pre/Post-Installation routine for p1</td>
<td></td>
</tr>
<tr>
<td>BSTS10P2</td>
<td>Pre/Post-Installation routine for p2</td>
<td></td>
</tr>
<tr>
<td>BSTS10P3</td>
<td>Pre/Post-Installation routine for p3</td>
<td></td>
</tr>
<tr>
<td>BSTS10P4</td>
<td>Pre/Post-Installation routine for p4</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTS10PH</td>
<td>Hot fix environmental checking routine</td>
<td></td>
</tr>
<tr>
<td>BSTS1POS</td>
<td>Pre/Post-Installation routine for version 1.0 release</td>
<td></td>
</tr>
<tr>
<td>BSTSAPI</td>
<td>Main API front end routine</td>
<td></td>
</tr>
<tr>
<td>BSTSAPIA</td>
<td>API program routine</td>
<td></td>
</tr>
<tr>
<td>BSTSAPIB</td>
<td>API program routine</td>
<td></td>
</tr>
<tr>
<td>BSTSAPIC</td>
<td>API program routine</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSAPID</td>
<td>API program routine</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSAPIF</td>
<td>API program routine</td>
<td></td>
</tr>
<tr>
<td>BSTSCDET</td>
<td>Routine which returns detail information for selected concepts</td>
<td></td>
</tr>
<tr>
<td>BSTSCFIX</td>
<td>Description Id population utility routine</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSCLAS</td>
<td>BSTS class delivery routine</td>
<td></td>
</tr>
<tr>
<td>BSTSCMCL</td>
<td>Routine containing Caché method calls</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSDTS0</td>
<td>Routine for DTS specific processing</td>
<td></td>
</tr>
<tr>
<td>BSTSDTS1</td>
<td>Second routine for DTS specific processing</td>
<td></td>
</tr>
<tr>
<td>BSTSDTS2</td>
<td>Third routine for DTS specific processing</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSDTS3</td>
<td>Fourth routine for DTS specific processing</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSDTS4</td>
<td>Fifth routine for DTS specific processing</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSLKP</td>
<td>Local lookup routine</td>
<td></td>
</tr>
<tr>
<td>Routine</td>
<td>Description</td>
<td>Modified for p4 Release</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>BSTSLSRC</td>
<td>Local SNOMED lookup routine</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSRPC</td>
<td>RPC SNOMED search call.</td>
<td></td>
</tr>
<tr>
<td>BSTSSRCH</td>
<td>Routine containing search logic and concept detail retrieval</td>
<td></td>
</tr>
<tr>
<td>BSTSSTA</td>
<td>DTS status check routine</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSTST</td>
<td>DTS testing option routine</td>
<td></td>
</tr>
<tr>
<td>BSTSUPD</td>
<td>Routine to update DTS parameters</td>
<td></td>
</tr>
<tr>
<td>BSTSUTIL</td>
<td>BSTS utility function routine</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSOVF1</td>
<td>Custom codeset version handling routine 4</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSOFL</td>
<td>Custom codeset version handling routine 3</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSVRSC</td>
<td>Custom codeset version handling routine 2</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSVRSN</td>
<td>Version and subset handling routine 1</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSWSV</td>
<td>Routine used to retrieve web service connection information</td>
<td>Yes</td>
</tr>
<tr>
<td>BSTSWSV1</td>
<td>Second routine used to retrieve web service connection information</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### 5.2 API List

#### 5.2.1 $$SEARCH^\text{^BSTSAPI}$$

This API allows a specific code set version to be searched on for a particular input string. The result set can be filtered by subset, maximum records, and other filtering criteria.

**Parameter:** OUT

- **Data Type:** String
- **Description:** Output variable/global to return information specified in the OUT parameter.
Parameter: IN

Data Type: String (Optional)

Description:
Search String^Search Type^Namespace ID^Filter Subset^Date to
Check^Maximum Number Concepts^Return Info^Add/Retire Date^Batch
Return^Batch Return Concept Number^Local^Debug

Values:

• Search String. String to search on

• Search Type:
  – F-Fully specified name
  – S-Synonyms

• Namespace ID (Optional). Default is 36 (SNOMED CT US Extension). Available namespaces are:
  – 36 (SNOMED CT US Extension)
  – 5180 (FDA UNII)
  – 1552 (RxNorm R)
  – 32773 (GMRA Allergies with Maps)
  – 32772 (GMRA Signs Symptoms)
  – 32771 (IHS VANDF)
  – 32774 (IHS Med Route)

• Filter Subset (Optional). Subsets to filter on – separate multiple subsets using “~”. Default to “IHS Problem List”. Passing “ALL” returns all allowable SNOMED terms (when looking up on SNOMED).

• Date to Check (Optional). Default to Today (FileMan format)

• Maximum Number of Concepts to Return (Optional). Default 25

• Return Info (Optional). Default is all "PSBIXCAV":
  – P. Preferred
  – S. Synonym
  – B. Subset
  – I. IsA
  – X. ICD9/ICD10
  – C. Children
  – A. Associations
  – V. Inv. Associations

• Add or Retire Date Information (Optional). Pass 1 to NOT return date information
• **Batch Return** (Optional). Start at record # (used in conjunction with **Return Info**)

• **Batch Return Concept Number** (Optional). Number of concepts to return per batch (used in conjunction with **Maximum Number of Concepts to Return**)

• **Local** (Optional). Pass 1 to perform local listing, otherwise leave blank for remote listing

• **Debug** (Optional). Pass 1 to display debug information

**Parameter:** VAR

**Data Type:** String List

**Description:** The VAR(#) list of records returns the following sections (based on the IN Parameters **Maximum Number Concepts to Return** and **Return Info**):

• **Concept ID/DTSID:**
  - VAR(,"CON")=Concept ID
  - VAR(,"DTS")=Internal DTS ID

• **Fully Specified Name:**
  - VAR(,"FSN", "DSC")= Description ID of the FSN
  - VAR(,"FSN","TRM")=Fully Specified Name
  - VAR(,"FSN","XADT")=Date Added
  - VAR(,"FSN","XRDT")=Date Retired

• **ICD-9 Information - Multiple Records Returned (CTR)** – ICD-9 or ICD-10 will be returned in this section based on the date in the “Date to Check” input parameter (#5). If date is after the ICD-10 implementation date found in file 80.4, ICD-10 information will get returned. Otherwise ICD-9 information will get returned:
  - VAR(,"ICD",CTR,"COD")=ICD9/ICD10 Code
  - VAR(,"ICD",CTR,"TYP")=Code Type(IC9 or 10D)
  - VAR(,"ICD",CTR,"XADT")=Date Added
  - VAR(,"ICD",CTR,"XRDT")=Date Retired

• **Legacy ICD-9 information will always get returned in this node:**
  - VAR(,"IC9",CTR,"COD")=ICD9 Code
  - VAR(,"IC9",CTR,"TYP")=Code Type(IC9)
  - VAR(,"IC9",CTR,"XADT")=Date Added
  - VAR(,"IC9",CTR,"XRDT")=Date Retired

• **IsA Information - Multiple Records Returned (CTR):**
  - VAR(,"ISA",CTR,"CON")=Concept ID of IsA Term (may be blank prior to lookup)
- VAR(#,"ISA",CTR,"DTS")=DTSId of the IsA Term
- VAR(#,"ISA",CTR,"TRM")=IsA Term Name
- VAR(#,"ISA",CTR,"XADT")=Date Added
- VAR(#,"ISA",CTR,"XRDT")=Date Retired

**Association Information (SNOMED) - Multiple Records Returned (CTR):**
- VAR(#,"ASM",CTR,"CON")=SNOMED Concept CT Association
- VAR(#,"ASM",CTR,"DTS")=DTSId of the SNOMED Concept

**Association Information (RxNorm) - Multiple Records Returned (CTR):**
- VAR(#,"ARX",CTR,"CON")=RxNorm Code Value Association
- VAR(#,"ARX",CTR,"DTS")=DTSId of the RxNorm Concept

**Association Information (UNII) - Multiple Records Returned (CTR):**
- VAR(#,"ASN",CTR,"CON")=UNII Code Value Association
- VAR(#,"ASN",CTR,"DTS")=DTSId of the UNII Concept

**Inverse Association Information (RxNorm) - Multiple Records Returned (CTR):**
- VAR(#,"IAR",CTR,"CON")=RxNorm Code Value of Inverse Association
- VAR(#,"IAR",CTR,"DTS")=DTSId of the RxNorm Concept
- VAR(#,"IAR",CTR,"TRM")=Inverse Association Term

**Child Information - Multiple Records Returned (CTR):**
- VAR(#,"CHD",CTR,"CON")=Concept ID of Child Term (may be blank prior to detail lookup)
- VAR(#,"CHD",CTR,"DTS")=DTSId of the Child Term
- VAR(#,"CHD",CTR,"TRM")=IsA Term Name
- VAR(#,"CHD",CTR,"XADT")=Date Added
- VAR(#,"CHD",CTR,"XRDT")=Date Retired

**Lookup Problem Column Value** (Preferred Term Information for concept for Search Type [F] or Synonym or Preferred Term Information for Search Type [S]):
- VAR(#,"PRB","DSC")=Description ID of a Pref Term (Type F) or Synonym/Pref Term (S)
- VAR(#,"PRB","TRM")=Preferred Name of a Concept (F) or a Synonym/PREFERRED NAME (S)

**Preferred Term Information:**
- VAR(#,"PRE","DSC")=Description ID of Preferred Term
- VAR(#,"PRE","TRM")=Preferred Term
- VAR(#,"PRE","XADT")=Date Added
– VAR(#,"PRE","XRDT")=Date Retired

• **Subset Information - Multiple Records Returned (CTR):**
  – VAR(#,"SUB",CTR,"SUB")=Subset Name
  – VAR(#,"SUB",CTR,"XADT")=Date Added
  – VAR(#,"SUB",CTR,"XRDT")=Date Retired

• **Synonym Information - Multiple Records Returned (CTR):**
  – VAR(#,"SYN",CTR,"DSC")=Description ID of Synonym
  – VAR(#,"SYN",CTR,"TRM")=Synonym Term
  – VAR(#,"SYN",CTR,"XADT")=Date Added
  – VAR(#,"SYN",CTR,"XRDT")=Date Retired

• **Date Concept Added/Retired:**
  – VAR(#,"XADT")=Date Added
  – VAR(#,"XRDT")=Date Retired

**Parameter:** <return value>

**Data Type:** String

**Description:**

Status^PrimaryErrorMsg^SecondaryErrorMsg

**Values:**

• **Status:**
  – 2: Remote information returned
  – 1: Local information returned
  – 0: No Information Returned

• **Primary Remote Error Message**

• **Secondary Remote Error Message (if applicable)**

5.2.2 **CODESETS^BSTSAPI**

This API returns a list of available terminology code sets supported by the Apelon DTS Version 4 software.

**Parameter:** OUT

**Data Type:** String

**Description:** Output variable/global to return information specified in the VAR parameter that follows.
Parameter: IN
  Data Type: String
  Description (Optional):
    Local^Debug
  Values:
  • Local (Optional). Pass 1 to perform local listing, otherwise leave blank for remote listing.
  • Debug (Optional). Pass 1 to display debug information.

Parameter: VAR
  Data Type: String List
  Description: List of records in the format:
    Codeset ID^Codeset Code^Codeset Name

Parameter: <return value>
  Data Type: String
  Description:
    Status^PrimaryErrorMsg^SecondaryErrorMsg
  Values:
  • Status:
    – 2. Remote information returned
    – 1. Local information returned
    – 0. No Information Returned
  • Primary Remote Error Message
  • Secondary Remote Error Message (if applicable)

5.2.3 $VERSIONS^BSTSAPI
This API will return a list of available versions for the supplied code set.

Parameter: OUT
  Data Type: String
  Description: Output variable/global to return information specified in the VAR parameter that follows.
Parameter: IN

Data Type: String

Description (Optional):

Namespace^Local^Debug.

Values:

- Namespace ID (Optional). Default to SNOMED CT US Extensions (#36)
- Local (Optional). Pass 1 to perform local listing, otherwise leave blank for remote listing.
- Debug (Optional). Pass 1 to display debug information.

Parameter: VAR

Data Type: String List

Description (List of records):

Version ID^Version Name^Version Release Date^Version Install Date

Parameter: <return value>

Data Type: String

Description:

Status^PrimaryErrorMsg^SecondaryErrorMsg

Values:

- Status:
  - 2: Remote information returned
  - 1: Local information returned
  - 0: No Information Returned
- Primary Remote Error Message
- Secondary Remote Error Message (if applicable)

5.2.4 $$CVRSN^BSTSAPI

This API will return the current version in use for the supplied code set.

Parameter: OUT

Data Type: String

Description: Output variable/global to return information specified in the VAR parameter that follows.
Parameter: IN
Data Type: String (Optional)
Description:
Namespace ID^Local^Debug
Values:
- Namespace ID (Optional). Default to SNOMED CT US Extensions (#36).
- Local (Optional). Pass 1 to perform local listing, otherwise leave blank for remote listing.
- Debug (Optional). Pass 1 to display debug information.

Parameter: VAR
Data Type: String List
Description (List of records):
Version ID^Version Name^Version Release Date^Version Install Date (if available).

Parameter: <return value>
Data Type: String
Description:
Status^PrimaryErrorMsg^SecondaryErrorMsg
Values:
- Status:
  - 2. Remote information returned
  - 1. Local information returned
  - 0. No Information Returned
- Primary Remote Error Message
- Secondary Remote Error Message (if applicable).

5.2.5 $$MPADVICE^BSTSAPI
This API will return map advice information for a particular SNOMED® Term.

Parameter: OUT
Data Type: String
Description: Output variable/global to return information specified in the VAR parameter that follows.
**Parameter**: IN

**Data Type**: String (Optional)

**Description**: The Concept ID^Local^Exclude Info^Debug

**Values**:
- **Concept ID**: The Concept ID to look up.
- **Local** (Optional). Pass 1 or blank to perform local listing. Pass 2 for remote DTS listing.
- **Exclude Info**: Pass 1 to exclude add/retired date info from the output.
- **Debug** (Optional). Pass 1 to display debug information.

**Parameter**: VAR

**Data Type**: String List

**Description**: The VAR(#) list of records returns the mapping information on file for the specified concept. Multiple records per concept could be returned.

**Format**:

VAR(#,"MPADV","VAL")=Mapping Advice
VAR(#,"MPCVL","VAL")=Map Classification Information
VAR(#,"MPGRP","VAL")=Map Group
VAR(#,"MPPRI","VAL")=Map Priority
VAR(#,"MPRUL","VAL")=Map Rule
VAR(#,"MPTGN","VAL")=Map Target Name
VAR(#,"MPTGT","VAL")=Map Target Code

**Parameter**: <return value>

**Data Type**: String

**Description**: Status^PrimaryErrorMsg^SecondaryErrorMsg

**Values**:
- **Status**:
  - 2. Remote information returned
  - 1. Local information returned
  - 0. No Information Returned
- **Primary Remote Error Message**
- **Secondary Remote Error Message** (if applicable)
5.2.6 \textbf{\texttt{SUBSET^BSTSAPI}}

This API will return all of the available subsets that are available for a given code set.

\textbf{Parameter}: OUT

\textbf{Data Type}: String

\textbf{Description}: Output variable/global to return information specified in the VAR parameter that follows.

\textbf{Parameter}: IN

\textbf{Data Type}: String (Optional)

\textbf{Description}:

Namespace ID\textsuperscript{Local}\textsuperscript{Debug}

\textbf{Values}:

- Namespace ID (Optional). Default to SNOMED CT US Extension (#36).
- Local (Optional). Pass 1 or leave blank to perform local listing. Pass 2 for remote DTS listing.
- Debug (Optional). Pass 1 to display debug information.

\textbf{Parameter}: VAR

\textbf{Data Type}: String List

\textbf{Description}: The VAR(#) list of records returns the list of available subsets for the given namespace.

\textbf{Format}:

VAR(#)=Subset Name

\textbf{Parameter}: <return value>

\textbf{Data Type}: String

\textbf{Description}:

\textbf{Values}:

- Status:
  - 2. Remote information returned
  - 1. Local information returned
  - 0. No Information Returned

- Primary Remote Error Message

- Secondary Remote Error Message (if applicable)
5.2.7 $$SUBLST^BSTSAPI

This API will return all of the concepts found in a specified subset. Since these results could be quite extensive, it is recommended that the results be returned in a scratch global.

**Parameter:** OUT

- **Data Type:** String
- **Description:** Output variable/global to return information specified in the VAR parameter that follows.

**Parameter:** IN

- **Data Type:** String (Optional)
- **Description:**
  - Subset^Namespace ID^Local^Debug
- **Values:**
  - **Subset** (Required). The name of the subset to list the concepts for.
  - **Namespace ID** (Optional). Default to SNOMED CT US Extension (#36).
  - **Local** (Optional). Pass 1 or leave blank to perform local listing. Pass 2 for remote DTS listing.
  - **Debug** (Optional). Pass 1 to display debug information.

**Parameter:** VAR

- **Data Type:** String List
- **Description:**
- **Format:**
  - VAR(#)=Concept ID^Description ID of Preferred Term^Preferred Term

**Parameter:** <return value>

- **Data Type:** String
- **Description:**
- **Status:**
  - 2. Remote information returned
  - 1. Local information returned
  - 0. No Information Returned
- **Primary Remote Error Message**
- **Secondary Remote Error Message** (if applicable)

5.2.8 **$$VALTERM^BSTSAPI**

This API will determine whether a supplied term is a valid in a given code set and version.

**Parameter**: OUT

- **Data Type**: String
- **Description**: Output variable/global to return information specified in the VAR parameter that follows.

**Parameter**: IN

- **Data Type**: String (Optional)
- **Description**: Search Term^Codeset ID^Snapshot Date^Local^Debug

**Values**:

- **Search Term**: The exact term for lookup.
- **Codeset ID** (Optional). Default to SNOMED CT US Extension (‘36’). Available namespaces are:
  - 36 (SNOMED CT US Extension)
  - 5180 (FDA UNII)
  - 1552 (RxNorm R)
  - 32773 (GMRA Allergies with Maps)
  - 32772 (GMRA Signs Symptoms)
  - 32771 (IHS VANDF)
  - 32774 (IHS Med Route)
- **Snapshot Date**: Snapshot Date to check. Default Today’s Date.
- **Local** (Optional). Pass 1 or blank to perform local listing. Pass 2 for remote DTS listing.
- **Debug** (Optional). Pass 1 to display debug information.

**Parameter**: VAR

- **Data Type**: String List
- **Description**: The VAR(#) list of records returns the following sections (based on the IN Parameters **Maximum Number Concepts** and **Return Info**):
  - **Concept ID/DTSID**:
    - VAR(,"CON")=Concept ID
- \text{VAR(\#,"DTS")=Internal DTS ID}

- **Fully Specified Name:**
  - \text{VAR(\#,"FSN", "DSC")= Description ID of the FSN}
  - \text{VAR(\#,"FSN","TRM")=Fully Specified Name}
  - \text{VAR(\#,"FSN","XADT")=Date Added}
  - \text{VAR(\#,"FSN","XRDT")=Date Retired}

- **ICD-9 Information - Multiple Records Returned (CTR)** – ICD-9 or ICD-10 will be returned in this section based on the date in the “Date to Check” input parameter (#5). If date is after the ICD-10 implementation date found in file 80.4, ICD-10 information will get returned. Otherwise ICD-9 information will get returned:
  - \text{VAR(\#,"ICD",CTR,"COD")=ICD9/ICD10 Code}
  - \text{VAR(\#,"ICD",CTR,"TYP")=Code Type(IC9 or 10D)}
  - \text{VAR(\#,"ICD",CTR,"XADT")=Date Added}
  - \text{VAR(\#,"ICD",CTR,"XRDT")=Date Retired}

- **Legacy ICD-9 information will always get returned in this node:**
  - \text{VAR(\#,"IC9",CTR,"COD")=ICD9 Code}
  - \text{VAR(\#,"IC9",CTR,"TYP")=Code Type(IC9)}
  - \text{VAR(\#,"IC9",CTR,"XADT")=Date Added}
  - \text{VAR(\#,"IC9",CTR,"XRDT")=Date Retired}

- **IsA Information - Multiple Records Returned (CTR):**
  - \text{VAR(\#,"ISA",CTR,"CON")=Concept ID of IsA Term (may be blank prior to lookup)}
  - \text{VAR(\#,"ISA",CTR,"DTS")=DTSId of the IsA Term}
  - \text{VAR(\#,"ISA",CTR,"TRM")=IsA Term Name}
  - \text{VAR(\#,"ISA",CTR,"XADT")=Date Added}
  - \text{VAR(\#,"ISA",CTR,"XRDT")=Date Retired}

- **Association Information (SNOMED) - Multiple Records Returned (CTR):**
  - \text{VAR(\#,"ASM",CTR,"CON")=SNOMED Concept CT Association}
  - \text{VAR(\#,"ASM",CTR,"DTS")=DTSId of the SNOMED Concept}

- **Association Information (RxNorm) - Multiple Records Returned (CTR):**
  - \text{VAR(\#,"ARX",CTR,"CON")=RxNorm Code Value Association}
  - \text{VAR(\#,"ARX",CTR,"DTS")=DTSId of the RxNorm Concept}

- **Association Information (UNII) - Multiple Records Returned (CTR):**
  - \text{VAR(\#,"ASN",CTR,"CON")=UNII Code Value Association}
  - \text{VAR(\#,"ASN",CTR,"DTS")=DTSId of the UNII Concept}
• **Inverse Association Information (RxNorm) - Multiple Records Returned (CTR):**
  - VAR(#,"IAR",CTR,"CON")=RxNorm Code Value of Inverse Association
  - VAR(#,"IAR",CTR,"DTS")=DTSId of the RxNorm Concept
  - VAR(#,"IAR",CTR,"TRM")=Inverse Association Term

• **Child Information - Multiple Records Returned (CTR):**
  - VAR(#,"CHD",CTR,"CON")=Concept ID of Child Term (may be blank prior to detail lookup)
  - VAR(#,"CHD",CTR,"DTS")=DTSId of the Child Term
  - VAR(#,"CHD",CTR,"TRM")=IsA Term Name
  - VAR(#,"CHD",CTR,"XADT")=Date Added
  - VAR(#,"CHD",CTR,"XRDT")=Date Retired

• **Lookup Problem Column Value** (Preferred Term Information for concept for Search Type [F] or Synonym or Preferred Term Information for Search Type [S]):
  - VAR(#,"PRB","DSC")=Description ID of a Pref Term (Type F) or Synonym/Pref Term (S)
  - VAR(#,"PRB","TRM")=Preferred Name of a Concept (F) or a Synonym/Pref Term Name (S)

• **Preferred Term Information:**
  - VAR(#,"PRE","DSC")=Description ID of Preferred Term
  - VAR(#,"PRE","TRM")=Preferred Term
  - VAR(#,"PRE","XADT")=Date Added
  - VAR(#,"PRE","XRDT")=Date Retired

• **Subset Information - Multiple Records Returned (CTR):**
  - VAR(#,"SUB",CTR,"SUB")=Subset Name
  - VAR(#,"SUB",CTR,"XADT")=Date Added
  - VAR(#,"SUB",CTR,"XRDT")=Date Retired

• **Synonym Information - Multiple Records Returned (CTR):**
  - VAR(#,"SYN",CTR,"DSC")=Description ID of Synonym
  - VAR(#,"SYN",CTR,"TRM")=Synonym Term
  - VAR(#,"SYN",CTR,"XADT")=Date Added
  - VAR(#,"SYN",CTR,"XRDT")=Date Retired

• **Date Concept Added/Retired:**
  - VAR(#,"XADT")=Date Added
  - VAR(#,"XRDT")=Date Retired
Result returned as:
Status^PrimaryErrorMsg^SecondaryErrorMsg

Values:
- **Status**:
  - 2. Remote information returned
  - 1. Local information returned
  - 0. No Information Returned
- **Primary Remote Error Message**
- **Secondary Remote Error Message** (if applicable)

Parameter: <return value>

- **Data Type**: String
- **Description**: Result returned as:
  Status^PrimaryErrorMsg^SecondaryErrorMsg

Values:
- **Status**:
  - 2. Remote information returned
  - 1. Local information returned
  - 0. No Information Returned
- **Primary Remote Error Message**.
- **Secondary Remote Error Message** (if applicable).

### 5.2.9 $$VALSBTRM^BSTSAPI$$

This API will return whether a given term is a valid within the supplied subset.

**Parameter**: OUT

- **Data Type**: String
- **Description**: Output variable/global to return information specified in the VAR parameter that follows.

**Parameter**: IN

- **Data Type**: String (Optional)
- **Description**: Specified as:
  Description ID^Subset ^Codeset ID^Local^Debug

Values:
- **Description ID**. The Description ID for lookup.
• **Subset.** Subset to look for.
• **Codeset ID.** Default to SNOMED CT US Extension (‘36’).
• **Local** (Optional). Pass 1 or blank to perform local listing. Pass 2 for remote DTS listing.
• **Debug** (Optional). Pass 1 to display debug information.

**Parameter:** VAR

**Data Type:** String List

**Description:** Single VAR record is returned.

**Values:**

- 1. Term is in the provided subset
- 0. Term is not in the provided subset

**Parameter:** <return value>

**Data Type:** String

**Description:** Result returned as:

_status^PrimaryErrorMsg^SecondaryErrorMsg_

**Values:**

- **Status:**
  - 2. Remote information returned
  - 1. Local information returned
  - 0. No Information Returned
- **Primary Remote Error Message.**
- **Secondary Remote Error Message** (if applicable).

### 5.2.10 $\text{\$\$CNCLKP^BSTSAPI}$

This API will return the detail information for the specified Concept ID.

**Parameter:** OUT

**Data Type:** String

**Description:** Output variable/global to return information specified in the VAR parameter that follows.
Parameter: IN

Data Type: String (Optional)

Description: Specified as:

The Concept ID^Codeset ID^Snapshot Date^Local^Debug

Values:

- **Concept ID**: The Concept ID to look up
- **Codeset ID** (Optional). Default to SNOMED CT US Extensions (36) – Available namespaces are 36 (SNOMED CT US Extension, 5180 (FDA UNII), 1552 (RxNorm R)
- **Snapshot Date**: Snapshot Date to check. Default Today’s Date.
- **Local** (Optional). Pass 1 or blank to perform local listing. Pass 2 to perform a remote DTS listing.
- **Debug** (Optional). Pass 1 to display debug information

Parameter: VAR

Data Type: String List

Description: The VAR(#) list of records returns the following sections:

- **Concept ID/DTSID**:
  - VAR(#,"CON")=Concept ID
  - VAR(#,"DTS")=Internal DTS ID
- **Fully Specified Name**:
  - VAR(#,"FSN", "DSC")= Description ID of the FSN
  - VAR(#,"FSN","TRM")=Fully Specified Name
  - VAR(#,"FSN","XADT")=Date Added
  - VAR(#,"FSN","XRDT")=Date Retired
- **ICD-9 Information - Multiple Records Returned (CTR)** – ICD-9 or ICD-10 will be returned in this section based on the date in the “Date to Check” input parameter (#5). If date is after the ICD-10 implementation date found in file 80.4, ICD-10 information will get returned. Otherwise ICD-9 information will get returned:
  - VAR(#,"ICD",CTR,"COD")=ICD9/ICD10 Code
  - VAR(#,"ICD",CTR,"TYP")=Code Type(IC9 or 10D)
  - VAR(#,"ICD",CTR,"XADT")=Date Added
  - VAR(#,"ICD",CTR,"XRDT")=Date Retired
- **Legacy ICD-9 information will always get returned in this node**:
  - VAR(#,"IC9",CTR,"COD")=ICD9 Code
- VAR("IC9",CTR,"TYP")=Code Type(IC9)
- VAR("IC9",CTR,"XADT")=Date Added
- VAR("IC9",CTR,"XRDT")=Date Retired

• **IsA Information - Multiple Records Returned (CTR):**
  - VAR("ISA",CTR,"CON")=Concept ID of IsA Term (may be blank prior to lookup)
  - VAR("ISA",CTR,"DTS")=DTSId of the IsA Term
  - VAR("ISA",CTR,"TRM")=IsA Term Name
  - VAR("ISA",CTR,"XADT")=Date Added
  - VAR("ISA",CTR,"XRDT")=Date Retired

• **Association Information (SNOMED) - Multiple Records Returned (CTR):**
  - VAR("ASM",CTR,"CON")=SNOMED Concept CT Association
  - VAR("ASM",CTR,"DTS")=DTSId of the SNOMED Concept

• **Association Information (RxNorm) - Multiple Records Returned (CTR):**
  - VAR("ARX",CTR,"CON")=RxNorm Code Value Association
  - VAR("ARX",CTR,"DTS")=DTSId of the RxNorm Concept

• **Association Information (UNII) - Multiple Records Returned (CTR):**
  - VAR("ASN",CTR,"CON")=UNII Code Value Association
  - VAR("ASN",CTR,"DTS")=DTSId of the UNII Concept

• **Inverse Association Information (RxNorm) - Multiple Records Returned (CTR):**
  - VAR("IAR",CTR,"CON")=RxNorm Code Value of Inverse Association
  - VAR("IAR",CTR,"DTS")=DTSId of the RxNorm Concept
  - VAR("IAR",CTR,"TRM")=Inverse Association Term

• **Child Information - Multiple Records Returned (CTR):**
  - VAR("CHD",CTR,"CON")=Concept ID of Child Term (may be blank prior to detail lookup)
  - VAR("CHD",CTR,"DTS")=DTSId of the Child Term
  - VAR("CHD",CTR,"TRM")=IsA Term Name
  - VAR("CHD",CTR,"XADT")=Date Added
  - VAR("CHD",CTR,"XRDT")=Date Retired

• **Lookup Problem Column Value:**
  - VAR("PRB","DSC")=Description ID of a Pref Term (Type F) or Synonym/Pref Term (S)
  - VAR("PRB","TRM")=Preferred Name of a Concept (F) or a Synonym/Preferred Name (S)
- **Preferred Term Information:**
  - VAR(#,"PRE","DSC")=Description ID of Preferred Term
  - VAR(#,"PRE","TRM")=Preferred Term
  - VAR(#,"PRE","XADT")=Date Added
  - VAR(#,"PRE","XRDT")=Date Retired

- **Subset Information - Multiple Records Returned (CTR):**
  - VAR(#,"SUB",CTR,"SUB")=Subset Name
  - VAR(#,"SUB",CTR,"XADT")=Date Added
  - VAR(#,"SUB",CTR,"XRDT")=Date Retired

- **Synonym Information - Multiple Records Returned (CTR):**
  - VAR(#,"SYN",CTR,"DSC")=Description ID of Synonym
  - VAR(#,"SYN",CTR,"TRM")=Synonym Term
  - VAR(#,"SYN",CTR,"XADT")=Date Added
  - VAR(#,"SYN",CTR,"XRDT")=Date Retired

- **Date Concept Added/Retired:**
  - VAR(#,"XADT")=Date Added
  - VAR(#,"XRDT")=Date Retired

**Parameter:** <return value>

**Data Type:** String

**Description:** Result returned as:

```
Status^PrimaryErrorMsg^SecondaryErrorMsg
```

**Values:**

- **Status:**
  - 2. Remote information returned
  - 1. Local information returned
  - 0. No Information Returned

- **Primary Remote Error Message.**
- **Secondary Remote Error Message** (if applicable).

### 5.2.11 \$\$DTSLKP^BSTSAPI

This API will return the detail information for the specified DTS ID.

**Parameter:** OUT

**Data Type:** String

**Description:** Output variable/global to return information specified in the VAR parameter that follows.
Parameter: IN

Data Type: String

Description: Specified as:

The DTS ID^Codeset ID^Snapshot Date^Local^Debug

Values:

- **DTS ID**: The DTS ID to look up.
- **Codeset ID** (Optional). Default to SNOMED CT US Extensions (‘36’) - Available namespaces are:
  - 36 (SNOMED CT US Extension)
  - 5180 (FDA UNII)
  - 1552 (RxNorm R)
  - 32773 (GMRA Allergies with Maps)
  - 32772 (GMRA Signs Symptoms)
  - 32771 (IHS VANDF)
  - 32774 (IHS Med Route)
- **Snapshot Date**: Snapshot Date to check. Default Today’s Date.
- **Local** (Optional). Pass 1 to perform local listing, otherwise leave blank for remote listing.
- **Debug** (Optional). Pass 1 to display debug information.
- **TBYPASS** (System Use Only) - Pass 1 to bypass server timeout checks, otherwise leave blank. Do not use for regular calls.

Parameter: VAR

Data Type: String List

Description: The VAR(#) list of records returns the following sections:

- **Concept ID/DTSID**:
  - VAR(#,"CON")=Concept ID
  - VAR(#,"DTS")=Internal DTS ID
- **Fully Specified Name**:
  - VAR(#,"FSN", "DSC")= Description ID of the FSN
  - VAR(#,"FSN","TRM")=Fully Specified Name
  - VAR(#,"FSN","XADT")=Date Added
  - VAR(#,"FSN","XRDT")=Date Retired
• **ICD-9 Information - Multiple Records Returned (CTR)** – ICD-9 or ICD-10 will be returned in this section based on the date in the “Date to Check” input parameter (#5). If date is after the ICD-10 implementation date found in file 80.4, ICD-10 information will get returned. Otherwise ICD-9 information will get returned:
  - `VAR(#,"ICD",CTR,"COD")=ICD9/ICD10 Code`
  - `VAR(#,"ICD",CTR,"TYP")=Code Type(IC9 or 10D)`
  - `VAR(#,"ICD",CTR,"XADT")=Date Added`
  - `VAR(#,"ICD",CTR,"XRDT")=Date Retired`

• **Legacy ICD-9 information will always get returned in this node:**
  - `VAR(#,"IC9",CTR,"COD")=ICD9 Code`
  - `VAR(#,"IC9",CTR,"TYP")=Code Type(IC9)`
  - `VAR(#,"IC9",CTR,"XADT")=Date Added`
  - `VAR(#,"IC9",CTR,"XRDT")=Date Retired`

• **IsA Information - Multiple Records Returned (CTR):**
  - `VAR(#,"ISA",CTR,"CON")=Concept ID of IsA Term (may be blank prior to lookup)`
  - `VAR(#,"ISA",CTR,"DTS")=DTSId of the IsA Term`
  - `VAR(#,"ISA",CTR,"TRM")=IsA Term Name`
  - `VAR(#,"ISA",CTR,"XADT")=Date Added`
  - `VAR(#,"ISA",CTR,"XRDT")=Date Retired`

• **Association Information (SNOMED) - Multiple Records Returned (CTR):**
  - `VAR(#,"ASM",CTR,"CON")=SNOMED Concept CT Association`
  - `VAR(#,"ASM",CTR,"DTS")=DTSId of the SNOMED Concept`

• **Association Information (RxNorm) - Multiple Records Returned (CTR):**
  - `VAR(#,"ARX",CTR,"CON")=RxNorm Code Value Association`
  - `VAR(#,"ARX",CTR,"DTS")=DTSId of the RxNorm Concept`

• **Association Information (UNII) - Multiple Records Returned (CTR):**
  - `VAR(#,"ASN",CTR,"CON")=UNII Code Value Association`
  - `VAR(#,"ASN",CTR,"DTS")=DTSId of the UNII Concept`

• **Inverse Association Information (RxNorm) - Multiple Records Returned (CTR):**
  - `VAR(#,"IAR",CTR,"CON")=RxNorm Code Value of Inverse Association`
  - `VAR(#,"IAR",CTR,"DTS")=DTSId of the RxNorm Concept`
  - `VAR(#,"IAR",CTR,"TRM")=Inverse Association Term`

• **Child Information - Multiple Records Returned (CTR):**
– \text{VAR} (#, "CHD", CTR, "CON") = Concept ID of Child Term (may be blank prior to detail lookup)
– \text{VAR} (#, "CHD", CTR, "DTS") = DTSId of the Child Term
– \text{VAR} (#, "CHD", CTR, "TRM") = IsA Term Name
– \text{VAR} (#, "CHD", CTR, "XADT") = Date Added
– \text{VAR} (#, "CHD", CTR, "XRDT") = Date Retired

• **Lookup Problem Column Value:**
  – \text{VAR} (#, "PRB", "DSC") = Description ID of a Pref Term (Type F) or Synonym/Pref Term (S)
  – \text{VAR} (#, "PRB", "TRM") = Preferred Name of a Concept (F) or a Synonym/Preferred Name (S)

• **Preferred Term Information:**
  – \text{VAR} (#, "PRE", "DSC") = Description ID of Preferred Term
  – \text{VAR} (#, "PRE", "TRM") = Preferred Term
  – \text{VAR} (#, "PRE", "XADT") = Date Added
  – \text{VAR} (#, "PRE", "XRDT") = Date Retired

• **Subset Information - Multiple Records Returned (CTR):**
  – \text{VAR} (#, "SUB", CTR, "SUB") = Subset Name
  – \text{VAR} (#, "SUB", CTR, "XADT") = Date Added
  – \text{VAR} (#, "SUB", CTR, "XRDT") = Date Retired

• **Synonym Information - Multiple Records Returned (CTR):**
  – \text{VAR} (#, "SYN", CTR, "DSC") = Description ID of Synonym
  – \text{VAR} (#, "SYN", CTR, "TRM") = Synonym Term
  – \text{VAR} (#, "SYN", CTR, "XADT") = Date Added
  – \text{VAR} (#, "SYN", CTR, "XRDT") = Date Retired

• **Date Concept Added/Retired:**
  – \text{VAR} (#, "XADT") = Date Added
  – \text{VAR} (#, "XRDT") = Date Retired

**Parameter:** <return value>

**Data Type:** String

**Description:** Result returned as:

Status^PrimaryErrorMsg^SecondaryErrorMsg

**Values:**

• **Status:**
  – 2. Remote information returned
  – 1. Local information returned
– 0. No Information Returned
- Primary Remote Error Message.
- Secondary Remote Error Message (if applicable).

5.2.12 \$\text{DSCLKP}^\text{BSTSAPI}

This API will return the detail information for the specified Description ID.

Parameter: OUT

Data Type: String

Description: Output variable/global to return information specified in the VAR parameter that follows.

Parameter: IN

Data Type: String

Description: Specified as:

\text{Description ID}^\text{Codeset ID}^\text{Local}^\text{Debug}

Values:

- **Description ID**: The Description ID to look up.
- **Codeset ID** (Optional). Default to SNOMED CT US Extensions (‘36’) – Available codesets are:
  - 36 (SNOMED CT US Extension)
  - 1552 (RxNorm R)
  - 5180 (FDA UNII)
- **Local** (Optional). Pass 1 or blank to perform local listing. Pass 2 for remote DTS listing.
- **Debug** (Optional). Pass 1 to display debug information.

Parameter: VAR

Data Type: String List

Description: The VAR(#) list of records returns the following sections (based on the IN Parameters Maximum Number Concepts and Return Info):

- **Concept ID/DTSID**:
  - VAR(#,"CON")=Concept ID
  - VAR(#,"DTS")=Internal DTS ID
- **Fully Specified Name**:
  - VAR(#,"FSN","DSC")= Description ID of the FSN
  - VAR(#,"FSN","TRM")=Fully Specified Name
– VAR(#,"FSN","XADT")=Date Added
– VAR(#,"FSN","XRDT")=Date Retired

• ICD-9 Information - Multiple Records Returned (CTR) – ICD-9 or ICD-10 will be returned in this section based on the date in the “Date to Check” input parameter (#5). If date is after the ICD-10 implementation date found in file 80.4, ICD-10 information will get returned. Otherwise ICD-9 information will get returned:
  – VAR(#,"ICD",CTR,"COD")=ICD9/ICD10 Code
  – VAR(#,"ICD",CTR,"TYP")=Code Type(IC9 or 10D)
  – VAR(#,"ICD",CTR,"XADT")=Date Added
  – VAR(#,"ICD",CTR,"XRDT")=Date Retired

• Legacy ICD-9 information will always get returned in this node:
  – VAR(#,"IC9",CTR,"COD")=ICD9 Code
  – VAR(#,"IC9",CTR,"TYP")=Code Type(IC9)
  – VAR(#,"IC9",CTR,"XADT")=Date Added
  – VAR(#,"IC9",CTR,"XRDT")=Date Retired

• IsA Information - Multiple Records Returned (CTR):
  – VAR(#,"ISA",CTR,"CON")=Concept ID of IsA Term (may be blank prior to lookup)
  – VAR(#,"ISA",CTR,"DTS")=DTSId of the IsA Term
  – VAR(#,"ISA",CTR,"TRM")=IsA Term Name
  – VAR(#,"ISA",CTR,"XADT")=Date Added
  – VAR(#,"ISA",CTR,"XRDT")=Date Retired

• Association Information (SNOMED) - Multiple Records Returned (CTR):
  – VAR(#,"ASM",CTR,"CON")=SNOMED Concept CT Association
  – VAR(#,"ASM",CTR,"DTS")=DTSId of the SNOMED Concept

• Association Information (RxNorm) - Multiple Records Returned (CTR):
  – VAR(#,"ARX",CTR,"CON")=RxNorm Code Value Association
  – VAR(#,"ARX",CTR,"DTS")=DTSId of the RxNorm Concept
  – Association Information (UNII) - Multiple Records Returned (CTR):
  – VAR(#,"ASN",CTR,"CON")=UNII Code Value Association
  – VAR(#,"ASN",CTR,"DTS")=DTSId of the UNII Concept

• Inverse Association Information (RxNorm) - Multiple Records Returned (CTR):
  – VAR(#,"IAR",CTR,"CON")=RxNorm Code Value of Inverse Association
  – VAR(#,"IAR",CTR,"DTS")=DTSId of the RxNorm Concept
– VAR(#,"IAR",CTR,"TRM")=Inverse Association Term

- **Child Information - Multiple Records Returned (CTR):**
  – VAR(#,"CHD",CTR,"CON")=Concept ID of Child Term (may be blank prior to detail lookup)
  – VAR(#,"CHD",CTR,"DTS")=DTSId of the Child Term
  – VAR(#,"CHD",CTR,"TRM")=IsA Term Name
  – VAR(#,"CHD",CTR,"XADT")=Date Added
  – VAR(#,"CHD",CTR,"XRDT")=Date Retired

- **Lookup Problem Column Value** (Preferred Term Information for concept for Search Type [F] or Synonym or Preferred Term Information for Search Type [S]):
  – VAR(#,"PRB","DSC")=Description ID of a Pref Term (Type F) or Synonym/Pref Term (S)
  – VAR(#,"PRB","TRM")=Preferred Name of a Concept (F) or a Synonym/Pref Name (S)

- **Preferred Term Information:**
  – VAR(#,"PRE","DSC")=Description ID of Preferred Term
  – VAR(#,"PRE","TRM")=Preferred Term
  – VAR(#,"PRE","XADT")=Date Added
  – VAR(#,"PRE","XRDT")=Date Retired

- **Subset Information - Multiple Records Returned (CTR):**
  – VAR(#,"SUB",CTR,"SUB")=Subset Name
  – VAR(#,"SUB",CTR,"XADT")=Date Added
  – VAR(#,"SUB",CTR,"XRDT")=Date Retired

- **Synonym Information - Multiple Records Returned (CTR):**
  – VAR(#,"SYN",CTR,"DSC")=Description ID of Synonym
  – VAR(#,"SYN",CTR,"TRM")=Synonym Term
  – VAR(#,"SYN",CTR,"XADT")=Date Added
  – VAR(#,"SYN",CTR,"XRDT")=Date Retired

- **Date Concept Added/Retired:**
  – VAR(#,"XADT")=Date Added
  – VAR(#,"XRDT")=Date Retired
Parameter: <return value>
  Data Type: String
  Description: Result returned as:
  Status^PrimaryErrorMsg^SecondaryErrorMsg
  Values:
  • Status:
    – 2. Remote information returned
    – 1. Local information returned
    – 0. No Information Returned
  • Primary Remote Error Message.
  • Secondary Remote Error Message (if applicable).

5.2.13 $$CONC^BSTSAPI
This API will return the detail information for the specified Concept ID.

Parameter: OUT
  Data Type: String
  Description: Output variable/global to return information specified in the VAR parameter that follows.

Parameter: IN
  Data Type: String
  Description: Specified as:
  The Concept ID^Codeset ID^Snapshot Date^Local^Debug
  Values:
  • Concept ID. The Concept ID to look up.
  • Codeset ID (Optional). Default to ‘36’ (SNOMED CT US Extensions) – Available codesets are:
    – 36 (SNOMED CT US Extensions)
    – 1552 (RxNorm R)
    – 5180 (FDA UNII)
  • Snapshot Date. Snapshot Date to check. Default Today’s Date.
  • Local (Optional). Pass 1 or blank to perform local listing. Pass 2 for remote DTS listing.
  • Debug (Optional). Pass 1 to display debug information.
Parameter: <return value>

Data Type: String

Description: Result returned as:

FSN Desc ID^FSN^Pref Desc ID^Pref Term^ICD9 list

Values:
• Description ID of Fully Specified Name
• Fully Specified Name
• Description ID of Preferred Term
• Preferred Term
• Delimited list of mapped ICD9 codes (‘;’ delimiter)

5.2.14 $$DESC^BSTSAPI

This API takes specific information returned by the $$DSCLKP^BSTSAPI API and returns it as part of a function call.

Parameter: IN

Data Type: String

Description: Specified as:

The Description ID^Codeset ID^Local^Debug

Values:
• Description ID. The Description ID to look up.
• Codeset ID (Optional). Default to ‘36’ (SNOMED CT US Extensions) - Available namespaces are:
  – 36 (SNOMED CT US Extension)
  – 5180 (FDA UNII)
  – 1552 (RxNorm R).
• Local (Optional). Pass 1 or blank to perform local listing. Pass 2 for remote DTS listing.
• Debug (Optional). Pass 1 to display debug information.
**Parameter:** <return value>

**Data Type:** String

**Description:** Result returned as:
- Concept ID^Term Description^ICD9 list

**Values:**
- **Concept ID.** The Concept ID associated with the specified Description ID.
- **Term Description.** The Term associated with the specified Description ID.
- **ICD-9 list.** Delimited list of mapped ICD-9 codes (‘;’ delimiter).

### 5.2.15 $$VSBTRMF^BSTSAPI$$

This API takes specific information returned by the $$VALSBTRM^BSTSAPI$$ API and returns it as part of a function call.

**Parameter:** IN

**Data Type:** String (Optional)

**Description:** Specified as:
- Description ID^Subset Codeset ID^Local^Debug

**Values:**
- **Description ID.** The Description ID for lookup.
- **Subset.** Subset to look for.
- **Codeset ID.** Default to ‘36’ (SNOMED CT US Extensions).
- **Local** (Optional). Pass 1 to perform local listing, otherwise leave blank for remote listing.
- **Debug** (Optional). Pass 1 to display debug information.

**Parameter:** <return value>

**Data Type:** String

**Description:** Single VAR record is returned.

**Value:**
- **1.** Term is in the provided subset
- **0.** Term is not in the provided subset
5.2.16 **$ICD2SMD^BSTSAPI**

This API Returns the SNOMED terms which map to a given ICD-9 code.

**Parameter:** OUT  
**Data Type:** String  
**Description:** Output variable/global to return information specified in the VAR parameter.

**Parameter:** IN  
**Data Type:** String (Optional)  
**Description:** Specified as:  
ICD9 Code^Return Info^Local^Debug^Lookup Date  

**Values:**

- **ICD9 Code.** The ICD-9 code to find the SNOMED mappings for.
- **Return Info** (Optional). Default is BCI  
  - P. Preferred  
  - S. Synonyms  
  - B. Subset  
  - I. IsA  
  - X. ICD9/ICD10  
  - C. Children
- **Local** (Optional). Pass 1 to perform local listing, otherwise leave blank for remote listing
- **Debug** (Optional). Pass 1 to display debug information
- **Lookup Date** (Optional). The date to lookup on (default to T+2).

**Parameter:** VAR  
**Data Type:** String List  
**Description:** The VAR(#) list of records returns the following sections (based on the IN Parameters Maximum Number Concepts and Return Info):

- **Concept ID/DTSID:**  
  - VAR(#,"CON")=Concept ID  
  - VAR(#,"DTS")=Internal DTS ID
- **Fully Specified Name:**  
  - VAR(#,"FSN","DSC")= Description ID of the FSN  
  - VAR(#,"FSN","TRM")=Fully Specified Name
- VAR(#,"FSN","XADT")=Date Added
- VAR(#,"FSN","XRDT")=Date Retired

- **ICD-9 Information - Multiple Records Returned (CTR):**
  - VAR(#,"ICD",CTR,"COD")=ICD9 Code
  - VAR(#,"ICD",CTR,"TYP")=Code Type(ICD)
  - VAR(#,"ICD",CTR,"XADT")=Date Added
  - VAR(#,"ICD",CTR,"XRDT")=Date Retired

- **IsA Information - Multiple Records Returned (CTR):**
  - VAR(#,"ISA",CTR,"CON")=Concept ID of IsA Term (may be blank prior to lookup)
  - VAR(#,"ISA",CTR,"DTS")=DTSId of the IsA Term
  - VAR(#,"ISA",CTR,"TRM")=IsA Term Name
  - VAR(#,"ISA",CTR,"XADT")=Date Added
  - VAR(#,"ISA",CTR,"XRDT")=Date Retired

- **Lookup Problem Column Value (Preferred Term Information for concept):**
  - VAR(#,"PRB","DSC")=Description ID of a Pref Term
  - VAR(#,"PRB","TRM")=Preferred Name of a Concept

- **Preferred Term Information:**
  - VAR(#,"PRE","DSC")=Description ID of Preferred Term
  - VAR(#,"PRE","TRM")=Preferred Term
  - VAR(#,"PRE","XADT")=Date Added
  - VAR(#,"PRE","XRDT")=Date Retired

- **Subset Information - Multiple Records Returned (CTR):**
  - VAR(#,"SUB",CTR,"SUB")=Subset Name
  - VAR(#,"SUB",CTR,"XADT")=Date Added
  - VAR(#,"SUB",CTR,"XRDT")=Date Retired

- **Synonym Information - Multiple Records Returned (CTR):**
  - VAR(#,"SYN",CTR,"DSC")=Description ID of Synonym
  - VAR(#,"SYN",CTR,"TRM")=Synonym Term
  - VAR(#,"SYN",CTR,"XADT")=Date Added
  - VAR(#,"SYN",CTR,"XRDT")=Date Retired

- **Date Concept Added/Retired:**
  - VAR(#,"XADT")=Date Added
  - VAR(#,"XRDT")=Date Retired
**Parameter**: <return value>

**Data Type**: String

**Description**: Result returned as:

\[\text{Status}^\text{PrimaryErrorMsg}^\text{SecondaryErrorMsg}\]

**Values**:
- **Status**:
  - 2. Remote information returned
  - 1. Local information returned
  - 0. No Information Returned
- **Primary Remote Error Message**.
- **Secondary Remote Error Message** (if applicable).

### 5.2.17 $DILKP^{BSTSAPI}$

This API takes accepts a National Drug Code (NDC) or VA Unique IDentifier (VUID) code and returns the any RxNorm values mapped to that code.

**Parameter**: OUT

**Data Type**: String

**Description**: Output variable/global to return information specified in the VAR parameter that follows.

**Parameter**: IN

**Data Type**: String

**Description**: Specified as:

\[\text{Code}^\text{Type}^\text{Local}^\text{Debug}\]

**Values**:
- **Code**. The NDC or VUID code to lookup.
- **Type**. Pass:
  - N for NDC lookup
  - V for VUID lookup
- **Local** (Optional). Pass 1 to perform local listing, otherwise leave blank for remote listing.
- **Debug** (Optional). Pass 1 to display debug information.
- **TBYPASS** (System Use Only) - Pass 1 to bypass server timeout checks, otherwise leave blank. Do not use for regular calls.
Parameter: VAR

Data Type: String List

Description: The VAR(#) list of records returns the following information:

- RxNorm Mappings:
  - VAR(#,"RXN","CON")=RxNorm Code
  - VAR(1,"RXN","TRM")=RxNorm Code
  - VAR(1,"RXN","TDC")=Tradename Code
  - VAR(1,"RXN","TDT")=Tradename Term

Parameter: <return value>

Data Type: String

Description: Result returned as:
Status^PrimaryErrorMsg^SecondaryErrorMsg

Values:

- Status:
  - 2. Remote information returned
  - 1. Local information returned
  - 0. No Information Returned

- Primary Remote Error Message.
- Secondary Remote Error Message (if applicable).

5.2.18 $$ASSOC^BSTSAPI

This API calls the existing $$VALTERM^BSTSAPI API call (accepting the same input parameters) and returns any association entries for only the first VAR(#) entry. Since most mapping files will return only one VAR(#) entry, this API can be used so its results can be parsed (rather than having to pull the data out of the VAR(#) array pieces).

Parameter: IN

Data Type: String (Optional)

Description: Specified as:
Search Term^Codeset ID^Snapshot Date^Local^Debug

Values:

- Search Term. The exact term for lookup.
- Codeset ID (Optional). Default to SNOMED CT US Extension ('36') - Available namespaces are:
- 36 (SNOMED CT US Extension)
- 5180 (FDA UNII)
- 1552 (RxNorm R)
- 32773 (GMRA Allergies with Maps)
- 32772 (GMRA Signs Symptoms)
- 32771 (IHS VANDF)
- 32774 (IHS Med Route)

- **Snapshot Date.** Snapshot Date to check. Default Today’s Date.
- **Local** (Optional). Pass 1 or blank to perform local listing. Pass 2 for remote DTS listing.
- **Debug** (Optional). Pass 1 to display debug information.

**Parameter:** <return value>

**Data Type:** String

**Description:** Result returned as:

[1]^[2]^[3]

**Values:**
- [1] SNOMED Association(s) (";" delimited)
- [2] RxNorm Association(s) (";" delimited)
- [3] UNII Association(s) (";" delimited)

**Table 5-2: Returned string definition**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;return value&gt;</td>
<td>String</td>
<td>Result returned as:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[1]^[2]^[3]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[1] SNOMED Association(s) (&quot;;&quot; delimited)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[2] RxNorm Association(s) (&quot;;&quot; delimited)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[3] UNII Association(s) (&quot;;&quot; delimited)</td>
</tr>
</tbody>
</table>
5.2.19  $$DI2RX^BSTSAPI

This API calls the existing $$DILKP^BSTSAPI API call (accepting the same input parameters) and returns only the first RxNorm value associated with the entry.

**Parameter:** IN

- **Data Type:** String
- **Description:** Specified as:
  - Code^Type Local^Debug
- **Values:**
  - **Code.** The NDC or VUID code to lookup.
  - **Type.** Pass:
    - N for NDC lookup
    - V for VUID lookup
  - **Local** (Optional). Pass 1 or blank to perform local listing. Pass 2 for remote DTS listing.
  - **Debug** (Optional). Pass 1 to display debug information.

**Parameter:** <return value>

- **Data Type:** String
- **Description:** Result returned as:
  - \[1\]^\[2\]^\[3\]^\[4\]
- **Values:**
  - [1] RxNorm Code
  - [2] RxNorm Term
  - [4] Tradename RxNorm Term

5.2.20  $$I10ADV^BSTSAPI

This API will return formatted map advice information for a particular SNOMED Term.

**Parameter:** OUT

- **Data Type:** String
- **Description:** Output variable/global to return information specified in the VAR parameter that follows.
Parameter: IN

Data Type: String (Optional)

Description:
The Concept ID^Local^Exclude Info^Debug

Values:
- Concept ID. The Concept ID to look up.
- Local (Optional). Pass 1 or blank to perform local listing. Pass 2 for remote DTS listing.
- Exclude Info. Pass 1 to exclude add/retired date info from the output.
- Debug (Optional). Pass 1 to display debug information.

Parameter: VAR

Data Type: String List

Description: The VAR(#) list of records returns the mapping information on file for the specified concept. Multiple records per concept could be returned.

Format:

VAR(#)=Formatted Mapping Advice

Parameter: <return value>

Data Type: String

Description:

Status^PrimaryErrorMsg^SecondaryErrorMsg

Values:
- Status:
  - 2. Remote information returned
  - 1. Local information returned
  - 0. No Information Returned
- Primary Remote Error Message
- Secondary Remote Error Message (if applicable)
6.0 Files and Tables

6.1 File List

The following table contains a list of files included with BSTS v1.0 p4:

Table 6-1: File List

<table>
<thead>
<tr>
<th>File #</th>
<th>Filename</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9002318</td>
<td>BSTS SITE PARAMETERS</td>
<td>This file contains a list of categories used in the IPC tab.</td>
</tr>
<tr>
<td>9002318.1</td>
<td>BSTS CODESET</td>
<td>This file contains layout templates uploaded for use by any BSTS user.</td>
</tr>
<tr>
<td>9002318.2</td>
<td>BSTS WEB SERVICE ENDPOINT</td>
<td>This file contains information about the connections to web service endpoints.</td>
</tr>
<tr>
<td>9002318.3</td>
<td>BSTS TERMINOLOGY</td>
<td>This file contains information that was downloaded via the web service interface.</td>
</tr>
<tr>
<td>9002318.4</td>
<td>BSTS CONCEPT</td>
<td>This file contains the concepts that were downloaded via the web service interface.</td>
</tr>
<tr>
<td>9002318.5</td>
<td>BSTS CACHE CLASS TRANSPORT</td>
<td>This file contains the classes that will need to be defined as part of the installation.</td>
</tr>
</tbody>
</table>

6.2 File Access

The following table contains the FileMan access to new files:

Table 6-2: FileMan Access

<table>
<thead>
<tr>
<th>File #</th>
<th>Filename</th>
<th>GL</th>
<th>RD</th>
<th>WR</th>
<th>LYG</th>
<th>DD</th>
<th>DEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>9002318</td>
<td>BSTS SITE PARAMETERS</td>
<td>^BSTS(9002318,</td>
<td>@</td>
<td>@</td>
<td>@</td>
<td>@</td>
<td>@</td>
</tr>
<tr>
<td>9002318.1</td>
<td>BSTS CODESET</td>
<td>^BSTS(9002318.1,</td>
<td>@</td>
<td>@</td>
<td>@</td>
<td>@</td>
<td>@</td>
</tr>
<tr>
<td>9002318.2</td>
<td>BSTS WEB SERVICE ENDPOINT</td>
<td>^BSTS(9002318.2,</td>
<td>@</td>
<td>@</td>
<td>@</td>
<td>@</td>
<td>@</td>
</tr>
<tr>
<td>9002318.3</td>
<td>BSTS TERMINOLOGY</td>
<td>^BSTS(9002318.3,</td>
<td>@</td>
<td>@</td>
<td>@</td>
<td>@</td>
<td>@</td>
</tr>
<tr>
<td>9002318.4</td>
<td>BSTS CONCEPT</td>
<td>^BSTS(9002318.4,</td>
<td>@</td>
<td>@</td>
<td>@</td>
<td>@</td>
<td>@</td>
</tr>
<tr>
<td>9002318.5</td>
<td>BSTS CACHE CLASS TRANSPORT</td>
<td>^BSTSCLS(</td>
<td>@</td>
<td>@</td>
<td>@</td>
<td>@</td>
<td>@</td>
</tr>
</tbody>
</table>
6.3 Cross References

9002318 (BSTS SITE PARAMETERS)
   .01 Name
     B Regular type cross reference
   1 WEBSERVICE (multiple)
     .01 Webservice
       B Regular type cross reference
     .02 Priority
       C Regular type cross reference for entire file

9002318.1 (BSTS CODESET)
   .01 Name
     B Regular type cross reference
   .02 Code
     C Regular type cross reference

9002318.2 (BSTS WEB SERVICE ENDPOINT)
   .01 Name
     B Regular type cross reference

9002318.3 (BSTS TERMINOLOGY)
   .01 Counter
     B Regular type cross reference
   1 Term
     E MUMPS
     New Style Cross References
       C Codeset, Concept ID, IEN
       D Codeset, Description ID
**9002318.4 (BSTS CONCEPT)**

.01 Counter
   
   B Regular type cross reference
   4 Subsets (multiple)

.01 Subsets
   
   B Regular type cross reference
   E Regular type cross reference for entire file

New Style Cross References

  C Codeset,Concept ID, IEN
  D Codeset,DTS ID, IEN
  3 ICD Mapping (multiple)

.02 CODE
   
   F Codeset, CODE, IEN
   7 NDC (multiple)

.01 NDC
   
   B Regular type cross reference
   G Regular type cross reference for entire file

New Style Cross References

  Codeset, NDC, IEN, NDC IEN
  8 VUID (multiple)

.01 VUID
   
   B Regular type cross reference
   H Regular type cross reference for entire file

New Style Cross References

  Codeset, VUID, IEN, VUID IEN
.01 ICD9 TO SNOMED MAP
   B Regular type cross reference
   I Regular type cross reference for entire file
New Style Cross Reference
   Codeset, ICD TO SNOMED MAP, IEN, ICD TO SNOMED MAP IEN

9002318.5 (BSTS CACHE CLASS TRANSPORT)
   .01 Package Name
      B Regular type cross reference
   11 Class (multiple)
      .01 Class
         B Regular type cross reference

6.4 Table File

File: 9002318 BSTS SITE PARAMETERS

Global: `^BSTS(9002318,`

Table 6-3: BSTS Site Parameters

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File: 9002318.1 BSTS CODESET

Global: `^BSTS(9002318.1,`

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**Global: ^BSTS(9002318.2),**

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**File: 9002318.3 BSTS TERMINOLOGY**

**Global: ^BSTS(9002318.3,**

Table 6-6: BSTS Terminology

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**File: 9002318.4 BSTS CONCEPT**

**Global: ^BSTS(9002318.4,**

Table 6-7: BSTS Concept

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<td>.01</td>
<td>NDC</td>
<td></td>
<td>1</td>
<td>F</td>
</tr>
<tr>
<td>.02</td>
<td>REVISION IN</td>
<td></td>
<td>2</td>
<td>D</td>
</tr>
<tr>
<td>.03</td>
<td>REVISION OUT</td>
<td></td>
<td>3</td>
<td>D</td>
</tr>
<tr>
<td>8</td>
<td>VUID</td>
<td>D0,8,D1,0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.01</td>
<td>VUID</td>
<td></td>
<td>1</td>
<td>F</td>
</tr>
<tr>
<td>.02</td>
<td>REVISION IN</td>
<td></td>
<td>2</td>
<td>D</td>
</tr>
<tr>
<td>.03</td>
<td>REVISION OUT</td>
<td></td>
<td>3</td>
<td>D</td>
</tr>
<tr>
<td>9</td>
<td>ASSOCIATIONS</td>
<td>D0,9,D1,0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.01</td>
<td>CODE</td>
<td></td>
<td>1</td>
<td>F</td>
</tr>
<tr>
<td>.02</td>
<td>CODESET</td>
<td></td>
<td>2</td>
<td>F</td>
</tr>
<tr>
<td>.03</td>
<td>CODE DTSID</td>
<td></td>
<td>3</td>
<td>F</td>
</tr>
<tr>
<td>10</td>
<td>FREQUENCY</td>
<td>D0,10</td>
<td>1</td>
<td>N</td>
</tr>
<tr>
<td>11</td>
<td>INVERSE ASSOCIATIONS</td>
<td>D0,11,D1,0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.01</td>
<td>CODE</td>
<td></td>
<td>1</td>
<td>F</td>
</tr>
<tr>
<td>.02</td>
<td>CODESET</td>
<td></td>
<td>2</td>
<td>F</td>
</tr>
<tr>
<td>.03</td>
<td>CODE DTSID</td>
<td></td>
<td>3</td>
<td>F</td>
</tr>
<tr>
<td>.03</td>
<td>CODE TERM</td>
<td></td>
<td>4</td>
<td>F</td>
</tr>
<tr>
<td>12</td>
<td>TTY</td>
<td>D0,12,D1,0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.01</td>
<td>TTY</td>
<td></td>
<td>1</td>
<td>F</td>
</tr>
<tr>
<td>13</td>
<td>ICD9 TO SNOMED MAP</td>
<td>D0,13,D1,0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Field: 9002318.5 BSTS CACHE CLASS TRANSPORT

**Global:** ^BSTSCLS(

Table 6-8: BSTS Cache Class Transport

<table>
<thead>
<tr>
<th>Field #</th>
<th>Field Name</th>
<th>Subscript</th>
<th>Piece</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>.01</td>
<td>PACKAGE NAME</td>
<td>D0,0</td>
<td>1</td>
<td>F</td>
</tr>
<tr>
<td>.02</td>
<td>*INSTALL WHERE</td>
<td>&quot;</td>
<td>2</td>
<td>S</td>
</tr>
<tr>
<td>.04</td>
<td>*PATH</td>
<td>&quot;</td>
<td>4</td>
<td>F</td>
</tr>
<tr>
<td>1.01</td>
<td>*RPMS FILENAME</td>
<td>D0,1</td>
<td>1</td>
<td>F</td>
</tr>
<tr>
<td>1.02</td>
<td>RPMS STATUS</td>
<td>&quot;</td>
<td>2</td>
<td>S</td>
</tr>
<tr>
<td>1.03</td>
<td>RPMS DATE/TIME INSTALLED</td>
<td>&quot;</td>
<td>3</td>
<td>D</td>
</tr>
<tr>
<td>2.01</td>
<td>*ENSEMBLE FILENAME</td>
<td>D0,2</td>
<td>1</td>
<td>F</td>
</tr>
<tr>
<td>2.02</td>
<td>*ENSEMBLE STATUS</td>
<td>&quot;</td>
<td>2</td>
<td>S</td>
</tr>
<tr>
<td>2.03</td>
<td>*ENSEMBLE DATE/TIME INSTALLED</td>
<td></td>
<td>3</td>
<td>D</td>
</tr>
<tr>
<td>10</td>
<td>XML (9002318.51)</td>
<td>D0,10,D1,</td>
<td>W</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>CLASS (9002318.511)</td>
<td>D0,11,D1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.01</td>
<td>CLASS</td>
<td></td>
<td>1</td>
<td>F</td>
</tr>
</tbody>
</table>

### 6.5 Callable Routines

There are no remote procedure calls added in this release.

Table 6-9: Callable Routines

<table>
<thead>
<tr>
<th>Name</th>
<th>Tag</th>
<th>Routine</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSTS GET SUBSET LIST</td>
<td>SUBSET</td>
<td>BSTSRPC</td>
</tr>
<tr>
<td>BSTS ICD9 TO SNOMED</td>
<td>ICD2SMD</td>
<td>BSTSRPC</td>
</tr>
<tr>
<td>BSTS SNOMED SEARCH</td>
<td>SEARCH</td>
<td>BSTSRPC</td>
</tr>
<tr>
<td>BSTS SNOMED UNIVERSE SEARCH</td>
<td>USEARCH</td>
<td>BSTSRPC</td>
</tr>
</tbody>
</table>
6.6 Published Entry Points

**BSTSAPI.INT**

SEARCH(OUT, IN) ; PEP. Perform Codeset Search

CODESETS(OUT, IN) ; PEP. Return list of available code sets

VERSIONS(OUT, IN) ; PEP. Return a list of available versions for a code set

CVRSN(OUT, IN) ; PEP. Return the Current Version For the Code Set

SUBSET(OUT, IN) ; PEP. Return the list of subsets available for a Code Set

VALTERM() ; PEP. Returns whether a given term is valid

DSCLKP(OUT, IN) ; PEP. Returns detail information for a specified Description ID

DTSCLKP(OUT, IN) ; PEP. Returns detail information for a specified DTS ID

CNCLKP(OUT, IN) ; PEP. Returns detail information for a specified Concept ID

ASSOC(IN) ; PEP. Returns the associations for each type (SMD, RxNorm, UNII)

DI2RX(IN) ; PEP. Performs a drug ingredient lookup on a specified value

MPADVICE(OUT, IN) ; PEP. Returns ICD-10 mapping advice for a specified Concept ID

SUBLST(OUT, IN) ; PEP. Returns a list of concepts in a specified subset

VALSBTRM(OUT, IN) ; PEP. Returns whether a given term is in a particular subset

VSBTRMF(IN) ; PEP. Function form of the VALSBTRM call

ICD2SMD(OUT, IN) ; PEP. Returns the SNOMED terms which map to a given ICD9 code

DILKP(OUT, IN) ; PEP. Performs a drug ingredient lookup on a specified value

DESC(IN). Function form of the DSCLKP call

CONC(IN). Function form of the CNCLKP call

I10ADV(OUT, IN) ; PEP. Returns Formatted ICD-10 mapping information for a specified Concept ID
7.0 Internal Relations

All functions within this application work independently.

There are no documented internal relations in BSTS.
8.0 External Relations

8.1 External Calls

8.2 Callable Routines—Published Entry Points

This application contains no calls to external published entry points other than to standard Kernel/FileMan calls.

8.3 Exported options

Table 8-1: Exported Options

<table>
<thead>
<tr>
<th>Option Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSTSMENU</td>
<td>Menu option</td>
</tr>
<tr>
<td>BSTS EDIT SITE PARAMETERS</td>
<td>Edit a site's parameters which include the web service endpoints.</td>
</tr>
<tr>
<td>BSTS WEB SERVICE</td>
<td>Add the path and other information needed to connect to a Terminology Web Service.</td>
</tr>
<tr>
<td>BSTS TEST WEB SERVICE</td>
<td>Performs a test call to a web service.</td>
</tr>
<tr>
<td>BSTS REFRESH LOCAL CACHE</td>
<td>Refreshes a custom codeset or the SNOMED subsets.</td>
</tr>
<tr>
<td>BSTS CHECK WEB SERVICE</td>
<td>Checks the status of the DTS server.</td>
</tr>
</tbody>
</table>
9.0 **Archiving and Purging**

As part of the p4 release, DTS connection errors are now being logged in the BSTS WEB SERVICE ENDPOINT file. P4 also contains functionality which will automatically purge this error information. Every night a background process will automatically run which will purge logged connection error information which is older than the number of days specified by the BSTS SITE PARAMETERS file DAYS TO KEEP ERR RESPONSES field. See section 5.3.1 of the *Addendum to the Installation Guide and Release Notes* for p4 which describes this parameter.
10.0 Documentation Resources

This section describes a few methods to generate BSTS technical documentation.

10.1 %INDEX Option

This option analyzes the structure of a routine to determine in part if the routine adheres to RPMS programming standards. The %INDEX output can include the following components:

- Compiled list of errors and warnings
- Routine listing
- Local variables
- Global variables
- Naked globals
- Label references
- External references

Running %INDEX for a specified set of routines allows users to discover any deviations from RPMS programming standards that exist in the selected routines and to see how routines interact with one another (i.e., which routines call or are called by other routines).

To run %INDEX for the Patient Registration package, type the BSTS namespace at the “Routine(s)>>” prompt.

10.2 List File Attributes Option

This VA FileMan option allows users to generate documentation pertaining to files and file structure. Using the standard format of this option yields the following data dictionary information for a specified file:

- File name and description
- Identifiers
- Cross-references
- Files pointed to by the file specified
- Files that point to the file specified
- Input, print, and sort templates

In addition, the following applicable data is supplied for each field in the file:

- Field name, number, title, and description
• Global location
• “Help” prompt
• Cross-references
• Input transform
• Date last edited
• Notes

Using the Global Map format of this option generates an output that lists the following information:

• All cross-references for the file selected
• Global location of each field in the file
• Input, print, and sort templates
11.0 SAC Requirements and Exemptions

No Standards and Conventions (SAC) exemptions are noted at this time, although we may need to pursue an exemption for the use of some Caché classes within the BSTSCMCL routine.
12.0 Templates, Forms, and Protocols

12.1 Print Templates
There are no print templates in BSTS.

12.2 Sort Templates
There are no sort templates in BSTS.

12.3 Input Templates
- BSTS ADD/EDIT WEB SERVICE
- BSTS EDIT SITE PARAMETERS

12.4 List Templates
There are no list templates in BSTS.

12.5 Forms
There are no forms in BSTS.

12.6 Protocols
There are no protocols in BSTS.
13.0 **SNOMED CT Search API**

13.1 **Description of Development Environment**

The SNOMED CT Search API was developed using the programming language C# within Microsoft Visual Studio® 2012 integrated development environment. SNOMED CT Search API is written to use the .NET 2.0 Framework. All new classes created for the SNOMED CT Search API exist within the namespace IndianHealthService.SNOMEDCTSearch.

In addition to the standard .NET object classes, the SNOMED CT Search API uses commercially available Windows form controls from Infragistics. All the controls used were part of a package of controls named Infragistics NetAdvantage® for Windows Forms 2010 Volume 3.

The SNOMED CT Search API also uses the BMX v4.0 software to facilitate data retrieval and updates are handled through the RPCs defined in the BSTSRPC and BMXRPC namespaces.

All of the dynamic link library (dll) files upon which SNOMED CT Search API depend are delivered with the SNOMED CT Search API install package and are stored in the directory specified by the user (default install directory is: C:\GDIT\SNOMED CT Search API).

13.2 **SNOMED CT Search API RPMS Server Requirements**

The RPMS server portion of the iCare application does not require a specific version of Caché or OS. However, the server needs to be able to support BMX 4.0 fully, and is therefore subject to any requirements needed to run that application. Please refer to the BMX version 4.0 Technical Manual for details.

13.3 **List of SNOMED CT Search API Dependencies**

The following table shows the graphical user interface dependencies associated with the SNOMED CT Search API application:

<table>
<thead>
<tr>
<th>Dependency</th>
<th>Assembly Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS .Net 2.0 Framework</td>
<td>Version 2.0 with any subsequent service packs from Microsoft</td>
<td>The Microsoft .NET 2.0 Framework is required for the iCare allocation. The iCare installation package will check this prerequisite during install and will assist with the download of this update from Microsoft. If online download is not available, installation will not be allowed until .Net 4.0 has been installed by other means.</td>
</tr>
</tbody>
</table>
### 13.4 SNOMED CT Search API–Install

The following table shows all of the files that will be installed with the SNOMED CT Search API. These files are installed in the directory specified by the user (default install directory is: C:\GDIT\SNOMED CT Search API).

<table>
<thead>
<tr>
<th>Filename</th>
<th>Assembly Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMXNET40.dll</td>
<td>4.0.0.2</td>
<td>This library file contains the general BMXNet 4.0 client-side utilities and functions for connecting to the RPMS server and managing data connections.</td>
</tr>
</tbody>
</table>

The following table shows all of the files that are part of a set of enhanced user interface (UI) controls from Infragistics called NetAdvantage for Windows Forms Version 2010 Volume 3:

<table>
<thead>
<tr>
<th>Filename</th>
<th>Assembly Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infragistics4.Share.d.v10.3.dll</td>
<td>10.3.20103.1000</td>
<td>This file contains general functions and types common to all of the Infragistics controls.</td>
</tr>
<tr>
<td>Infragistics4.Win.Misc.v10.3.dll</td>
<td>10.3.20103.1000</td>
<td>This is a set of other miscellaneous functions and data types used when working with the other Infragistics classes.</td>
</tr>
<tr>
<td>Infragistics4.Win.UltraWinEditors.v10.3.dll</td>
<td>10.3.20103.1000</td>
<td>This dll file contains enhanced user interface input controls such as the calendar date picker and special combo boxes.</td>
</tr>
<tr>
<td>Infragistics4.Win.UltraWinGrid.v10.3.dll</td>
<td>10.3.20103.1000</td>
<td>The UltraGrid™ is an enhanced data-bound DataGrid used to display tabular data to the user. This also allows users to sort, filter, arrange columns, and select rows of data at run time.</td>
</tr>
</tbody>
</table>
13.5 SNOMED CT Search API — List of Object Classes

The following table shows the new object classes used within the SNOMED CT Search API. All of the specified class names exist within the namespace IndianHealthService.SNOMEDCTSearch.

Table 13-4: SNOMED CT New Object Classes

<table>
<thead>
<tr>
<th>Class Name</th>
<th>Assembly</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSNOMEDCTLookup</td>
<td>IndianHealthService.SNOMEDCTSearch.dll</td>
<td>DSNOMEDCTSearch class provides a view to allow users to search SNOMED CT.</td>
</tr>
<tr>
<td>ICD9ToSNOMEDCTLookup</td>
<td>IndianHealthService.SNOMEDCTSearch.dll</td>
<td>DSNOMEDCTSearch class provides a view to allow users to search SNOMED CT based on ICD-9 values.</td>
</tr>
</tbody>
</table>

13.6 SNOMED CT Search API — List of Properties by Class

The following table shows the methods by classes used within the SNOMED CT Search API. All of the specified class names exist within the namespace IndianHealthService.SNOMEDCTSearch.

Table 13-5: SNOMED CT Properties by Class

<table>
<thead>
<tr>
<th>Class Name</th>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSNOMEDCTLookup</td>
<td>FormSize</td>
<td>Overrides default form size (Width: 800, Height: 600)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DataType: System.Drawing.Size</td>
</tr>
<tr>
<td>DSNOMEDCTLookup</td>
<td>FormTitle</td>
<td>Overrides default form title (SNOMED CT Lookup)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DataType: System.String</td>
</tr>
<tr>
<td>DSNOMEDCTLookup</td>
<td>Namespace</td>
<td>Overrides default DTS namespace (36 – SNOMED CT) used to perform search.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DataType: System.String</td>
</tr>
<tr>
<td>DSNOMEDCTLookup</td>
<td>SearchValue</td>
<td>Value passed initially search on. If blank, no search will be performed until user intervention.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DataType: System.String</td>
</tr>
<tr>
<td>DSNOMEDCTLookup</td>
<td>DescriptionID</td>
<td>SNOMED CT Description ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DataType: System.String</td>
</tr>
<tr>
<td>Class Name</td>
<td>Property</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>DSOMEDCTLookup</td>
<td>Description</td>
<td>SNOMED CT Description</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> System.String</td>
</tr>
<tr>
<td>DSOMEDCTLookup</td>
<td>ConceptID</td>
<td>SNOMED CT Concept ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> System.String</td>
</tr>
<tr>
<td>DSOMEDCTLookup</td>
<td>ICD</td>
<td>ICD Value associated with returned SNOMED CT</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> System.String</td>
</tr>
<tr>
<td>DSOMEDCTLookup</td>
<td>NumberofRecords</td>
<td>Maximum number of records to display</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> System.String</td>
</tr>
<tr>
<td>DSOMEDCTLookup</td>
<td>DefaultSubset</td>
<td>List of subsets to use for the subset listbox. Overrides the default values</td>
</tr>
<tr>
<td></td>
<td></td>
<td>provided by SNOMED CT Search API.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> System.Collections.ArrayList</td>
</tr>
<tr>
<td>DSOMEDCTLookup</td>
<td>SelectedSubset</td>
<td>List of subsets to have selected in subset listbox. Appending &quot;:1&quot; will</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cause the subset to permanent. Users will be unable to deselect it</td>
</tr>
<tr>
<td></td>
<td></td>
<td>from the subset listbox. &quot;Appending &quot;:0&quot; or leaving the subset as is will</td>
</tr>
<tr>
<td></td>
<td></td>
<td>continue to allow users to deselect them.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> System.Collections.ArrayList</td>
</tr>
<tr>
<td>DSOMEDCTLookup</td>
<td>SNOMEDCRemoteSession</td>
<td>BMX RemoteSession used to perform data calls to SNOMED CT Search</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Terminology Search) RPMS area</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> IndianHealthService.BMXNet.RemoteSession</td>
</tr>
<tr>
<td>ICD9ToSNOCTLookup</td>
<td>FormSize</td>
<td>Overrides default form size (Width: 800, Height: 600)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> System.Drawing.Size</td>
</tr>
<tr>
<td>ICD9ToSNOCTLookup</td>
<td>SearchValue</td>
<td>Value passed initially search on. If blank, no search will be performed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>until user intervention.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> System.String</td>
</tr>
<tr>
<td>ICD9ToSNOCTLookup</td>
<td>DescriptionID</td>
<td>SNOMED CT Description ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> System.String</td>
</tr>
<tr>
<td>ICD9ToSNOCTLookup</td>
<td>Description</td>
<td>SNOMED CT Description</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> System.String</td>
</tr>
<tr>
<td>ICD9ToSNOCTLookup</td>
<td>ConceptID</td>
<td>SNOMED CT Concept ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> System.String</td>
</tr>
<tr>
<td>ICD9ToSNOCTLookup</td>
<td>DefaultSubset</td>
<td>List of subsets to use for the subset listbox. Overrides the default values</td>
</tr>
<tr>
<td></td>
<td></td>
<td>provided by SNOMED CT Search API.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> System.Collections.ArrayList</td>
</tr>
<tr>
<td>ICD9ToSNOCTLookup</td>
<td>SelectedSubset</td>
<td>List of subsets to have selected in subset listbox</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DataType:</strong> System.Collections.ArrayList</td>
</tr>
<tr>
<td>Class Name</td>
<td>Property</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ICD9ToSNOMED CTLookup</td>
<td>SNOMEDCTRemoteSession</td>
<td>BMX RemoteSession used to perform data calls to SNOMED CT Search (Terminology Search)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RPMS area</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DataType: IndianHealthService.BMXNet.RemoteSession</td>
</tr>
</tbody>
</table>
14.0 Accessibility Checklist

IHS Section 508 36 CFR Part §1194.21 Software Applications and Operating Systems Checklist

The BSTS package is not a software application that includes a user interface. Therefore, the Section 508 compliancy checklist is not applicable.
Appendix A: Sample API Calls

A.1 $$SEARCH^BSTSAPI

Figure 14-1 shows the only records returned of a Fully Specified Name lookup listing:

```
> S OUT="VAR", IN="CEREBRAL EDEMA^F"
> W $$SEARCH^BSTSAPI(OUT, IN)
  2^>
ZW @OUT
VAR(1,"CHD",1,"CON")=230760006
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</tr>
<tr>
<td>VAR(5,&quot;IC9&quot;,1,&quot;XADT&quot;)=&quot;&quot;</td>
</tr>
<tr>
<td>VAR(5,&quot;IC9&quot;,1,&quot;XRDT&quot;)=&quot;&quot;</td>
</tr>
<tr>
<td>VAR(5,&quot;ICD&quot;,1,&quot;COD&quot;)=&quot;ZZZ.999&quot;</td>
</tr>
<tr>
<td>VAR(5,&quot;ICD&quot;,1,&quot;TYP&quot;)=&quot;10D&quot;</td>
</tr>
</tbody>
</table>

Addendum to the Technical Manual Accessibility Checklist September 2015
<p>Figure 14-1 Fully Specified Name lookup</p>

Figure 14-2 shows the only returned of a Fully Specified Name lookup listing, with the add/retire date information being omitted:

```plaintext
>S OUT="VAR",IN="CEREBRAL EDEMA^F^^^^^^1"
>W $$SEARCH^BSTSAPI(OUT,IN)
>ZW @OUT
VAR(1,"CHD",1,"CON")=230760006
VAR(1,"CHD",1,"DTS")=230760
>```

Addendum to the Technical Manual
September 2015
VAR(1,"CHD",1,"TRM")="Cytotoxic cerebral edema (disorder)"
VAR(1,"CHD",2,"CON")=230762003
VAR(1,"CHD",2,"DTS")=230762
VAR(1,"CHD",2,"TRM")="High altitude cerebral edema (disorder)"
VAR(1,"CHD",3,"CON")=230761005
VAR(1,"CHD",3,"DTS")=230761
VAR(1,"CHD",3,"TRM")="Periventricular cerebrospinal fluid edema (disorder)"
VAR(1,"CHD",4,"CON")=230763008
VAR(1,"CHD",4,"DTS")=230763
VAR(1,"CHD",4,"TRM")="Traumatic cerebral edema (disorder)"
VAR(1,"CHD",5,"CON")=230759001
VAR(1,"CHD",5,"DTS")=230759
VAR(1,"CHD",5,"TRM")="Vasogenic cerebral edema (disorder)"
VAR(1,"CON")=2302001
VAR(1,"DTS")=2032
VAR(1,"FSN","DSC")=749395013
VAR(1,"FSN","TRM")="Cerebral edema (disorder)"
VAR(1,"IC9",1,"COD")=348.5
VAR(1,"IC9",1,"TYP")="IC9"
VAR(1,"IC9",2,"COD")=993.2
VAR(1,"IC9",2,"TYP")="IC9"
VAR(1,"ICD",1,"COD")="G93.6"
VAR(2,"CON")=230762003
VAR(2,"DTS")=230762
VAR(2,"FSN","DSC")=618614019
VAR(2,"FSN","TRM")="High altitude cerebral edema (disorder)"
VAR(2,"IC9",1,"COD")=348.5
VAR(2,"IC9",1,"TYP")="IC9"
VAR(2,"IC9",2,"COD")=993.2
VAR(2,"IC9",2,"TYP")="IC9"
VAR(2,"ICD",1,"COD")="G93.6"
VAR(2,"ICD",1,"TYP")="10D"
VAR(2,"ICD",2,"COD")=993.2
VAR(2,"ICD",2,"TYP")="10D"
VAR(2,"ISA",1,"CON")=249605001
VAR(2,"ISA",1,"DTS")=249605
VAR(2,"ISA",1,"TRM")="Andes disease (disorder)"
VAR(2,"ISA",2,"CON")=2032001
VAR(2,"ISA",2,"DTS")=2032
VAR(2,"ISA",2,"TRM")="Vasogenic cerebral edema (disorder)"
VAR(2,"PRB","DSC")=345754010
VAR(2,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(2,"SUB",2,"SUB")="PICK Neurology Long"
VAR(2,"SUB",3,"SUB")="SRCH Emergency Department"
VAR(2,"SUB",4,"SUB")="SRCH Family Practice"
VAR(2,"SUB",5,"SUB")="SRCH Medicine - Inpatient"
VAR(2,"SUB",6,"SUB")="SRCH Medicine - Urgent Care"
VAR(2,"SUB",7,"SUB")="SRCH Neurology"
VAR(2,"SUB",8,"SUB")="SRCH Problem List - Medical"
VAR(2,"SUB",9,"SUB")="IHS Problem List"
VAR(2,"SYN",1,"DSC")=480612016
VAR(2,"SYN",1,"TRM")="Cerebral edema"
VAR(2,"SYN",2,"DSC")=4509013
VAR(2,"SYN",2,"TRM")="Cerebral edema"
VAR(2,"SUB",1,"SUB")="PICK Neurology Long"
VAR(2,"SUB",2,"SUB")="PICK Neurology Long"
VAR(2,"SUB",3,"SUB")="PICK Neurology Long"
VAR(2,"SUB",4,"SUB")="PICK Neurology Long"
VAR(2,"SUB",5,"SUB")="PICK Neurology Long"
VAR(2,"SUB",6,"SUB")="PICK Neurology Long"
VAR(2,"SUB",7,"SUB")="PICK Neurology Long"
VAR(2,"SUB",8,"SUB")="PICK Neurology Long"
VAR(2,"SUB",9,"SUB")="PICK Neurology Long"
VAR(2,"SYN",1,"DSC")=480612016
VAR(2,"SYN",1,"TRM")="Cerebral edema"
VAR(2,"SYN",2,"DSC")=4509013
VAR(2,"SYN",2,"TRM")="Cerebral edema"
VAR(2,"PRB","DSC")=345754010
VAR(2,"PRB","TRM")="High altitude cerebral edema"
VAR(2,"PRE","DSC")=345754010
VAR(2,"PRE","TRM")="High altitude cerebral edema"
VAR(2,"SUB",1,"SUB")="SRCH Emergency Department"
VAR(2,"SUB",2,"SUB")="SRCH Family Practice"
VAR(2,"SUB",3,"SUB")="SRCH Medicine - Inpatient"
VAR(2,"SUB",4,"SUB")="SRCH Medicine - Urgent Care"
VAR(2,"SUB",5,"SUB")="SRCH Neurology"
VAR(2,"SUB",6,"SUB")="SRCH Problem List - Medical"
VAR(2,"SUB",7,"SUB")="IHS Problem List"
VAR(2,"SYN",1,"DSC")=345755011
VAR(2,"SYN",1,"TRM")="High altitude cerebral oedema"
VAR(3,"CHD",1,"CON")=206238001
VAR(3,"CHD",1,"DTS")=206238
VAR(3,"CHD",1,"TRM")="Cerebral edema due to birth injury (disorder)"
VAR(3,"CHD",2,"CON")=311826007
VAR(3,"CHD",2,"DTS")=311826
VAR(3,"CHD",2,"TRM")="Traumatic cerebral edema with open intracranial wound (disorder)"
VAR(3,"CHD",3,"CON")=311825006
VAR(3,"CHD",3,"DTS")=311825
VAR(3,"CHD",3,"TRM")="Traumatic cerebral edema without open intracranial wound (disorder)"
VAR(3,"CHD",4,"CON")=262695000
VAR(3,"CHD",4,"DTS")=262695
VAR(3,"CHD",4,"TRM")="Traumatic focal cerebral edema (disorder)"
VAR(3,"CHD",5,"CON")=262694001
VAR(3,"CHD",5,"DTS")=262694
VAR(3,"CHD",5,"TRM")="Traumatic generalized cerebral edema (disorder)"
VAR(3,"CON")=230763008
VAR(3,"DTS")=230763
VAR(3,"FSN","DSC")=618615018
VAR(3,"FSN","TRM")="Traumatic cerebral edema (disorder)"
VAR(3,"IC9",1,"COD")=348.5
VAR(3,"IC9",1,"TYP")="IC9"
VAR(3,"ICD",1,"COD")="ZZZ.999"
VAR(3,"ICD",1,"TYP")="10D"
VAR(3,"ISA",1,"CON")=2032001
VAR(3,"ISA",1,"DTS")=2032
VAR(3,"ISA",1,"TRM")="Cerebral edema (disorder)"
VAR(3,"ISA",2,"CON")=127295002
VAR(3,"ISA",2,"DTS")=127295
VAR(3,"ISA",2,"TRM")="Traumatic brain injury (disorder)"
VAR(3,"PRB","DSC")=345757015
VAR(3,"PRB","TRM")="Traumatic cerebral edema"
VAR(3,"PRE","DSC")=345757015
VAR(3,"PRE","TRM")="Traumatic cerebral edema"
VAR(3,"SUB",1,"SUB")="SRCH Emergency Department"
VAR(3,"SUB",2,"SUB")="IHS Problem List"
VAR(3,"SYN",1,"DSC")=345756012
VAR(3,"SYN",1,"TRM")="Traumatic cerebral oedema"
VAR(4,"CON")=311826007
VAR(4,"DTS")=311826
VAR(4,"FSN","DSC")=708428012
VAR(4,"FSN","TRM")="Traumatic cerebral edema with open intracranial wound (disorder)"
VAR(4,"IC9",1,"COD")="854.10"
VAR(4,"IC9",1,"TYP")="IC9"
VAR(4,"ICD",1,"COD")="ZZZ.999"
VAR(4,"ICD",1,"TYP")="10D"
VAR(4,"ISA",1,"CON")=28188001
VAR(4,"ISA",1,"DTS")=28188
VAR(4,"ISA",1,"TRM")="Brain injury with open intracranial wound (disorder)"
VAR(4,"ISA",2,"CON")=230763008
VAR(4,"ISA",2,"DTS")=230763
VAR(4,"ISA",2,"TRM")="Traumatic cerebral edema (disorder)"
VAR(4,"PRB","DSC")=455457012
VAR(4,"PRB","TRM")="Traumatic cerebral edema with open intracranial wound"
VAR(4,"PRE","DSC")=455457012
VAR(4,"PRE","TRM")="Traumatic cerebral edema with open intracranial wound"
VAR(4,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(4,"SUB",2,"SUB")="SRCH Musculoskeletal"
VAR(4,"SUB",3,"SUB")="SRCH Neurology"
VAR(4,"SUB",4,"SUB")="SRCH Nursing - Public Health"
VAR(4,"SUB",5,"SUB")="SRCH Pain Management"
VAR(4,"SUB",6,"SUB")="SRCH Pediatrics"
VAR(4,"SUB",7,"SUB")="SRCH Trauma"
VAR(4,"SUB",8,"SUB")="IHS Problem List"
VAR(4,"SYN",1,"DSC")=455458019
VAR(4,"SYN",1,"TRM")="Traumatic cerebral oedema with open intracranial wound"
VAR(5,"CON")=311825006
VAR(5,"DTS")=311825
VAR(5,"FSN","DSC")=708426011
VAR(5,"FSN","TRM")="Traumatic cerebral edema without open intracranial wound (disorder)"
VAR(5,"IC9",1,"COD")="854.00"
VAR(5,"IC9",1,"TYP")="IC9"
VAR(5,"ICD",1,"COD")="ZZZ.999"
VAR(5,"ICD",1,"TYP")="10D"
VAR(5,"ISA",1,"CON")=230763008
VAR(5,"ISA",1,"DTS")=230763
VAR(5,"ISA",1,"TRM")="Traumatic cerebral edema (disorder)"
VAR(5,"PRB","DSC")=455456015
VAR(5,"PRB","TRM")="Traumatic cerebral edema without open intracranial wound"
VAR(5,"PRE","DSC")=455456015
VAR(5,"PRE","TRM")="Traumatic cerebral edema without open intracranial wound"
VAR(5,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(5,"SUB",2,"SUB")="SRCH Musculoskeletal"
VAR(5,"SUB",3,"SUB")="SRCH Neurology"
VAR(5,"SUB",4,"SUB")="SRCH Nursing - Public Health"
VAR(5,"SUB",5,"SUB")="SRCH Pain Management"
VAR(5,"SUB",6,"SUB")="SRCH Pediatrics"
VAR(5,"SUB",7,"SUB")="SRCH Trauma"
VAR(5,"SUB",8,"SUB")="IHS Problem List"
VAR(5,"SYN",1,"DSC")=455455016
VAR(5,"SYN",1,"TRM")="Traumatic cerebral oedema without open intracranial wound"

> Figure 14-2 Fully Specified Name lookup – Add/Retire Date Omitted
Figure 14-3 shows the records returned of a Fully Specified Name lookup listing, with the add/retire date information being omitted and only the Synonyms requested:

```
> S OUT="VAR", IN="CHRONIC OTITIS EXTERNA^F^^^^^S^1"

> W $$SEARCH^BSTSAPI(OUT, IN)
2^>
ZW @OUT
VAR(1,"CON")=53295002
VAR(1,"DTS")=53295
VAR(1,"FSN","DSC")=791398013
VAR(1,"FSN","TRM")="Chronic otitis externa (disorder)"
VAR(1,"PRB","DSC")=88624014
VAR(1,"PRB","TRM")="Chronic otitis externa"
VAR(1,"SYN",1,"DSC")=88625010
VAR(1,"SYN",1,"TRM")="Chronic otitis externa, NOS"
VAR(2,"CON")=194207002
VAR(2,"DTS")=194207
VAR(2,"FSN","DSC")=578170015
VAR(2,"FSN","TRM")="Chronic otitis externa due to aspergillosis (disorder)"
VAR(2,"PRB","DSC")=298966014
VAR(2,"PRB","TRM")="Chronic otitis externa due to aspergillosis"
VAR(3,"CON")=194208007
VAR(3,"DTS")=194208
VAR(3,"FSN","DSC")=578171016
VAR(3,"FSN","TRM")="Chronic otitis externa due to moniliasis (disorder)"
VAR(3,"PRB","DSC")=298967017
VAR(3,"PRB","TRM")="Chronic otitis externa due to moniliasis"
VAR(4,"CON")=232240007
VAR(4,"DTS")=232240
VAR(4,"FSN","DSC")=620279010
VAR(4,"FSN","TRM")="Chronic allergic otitis externa (disorder)"
VAR(4,"PRB","DSC")=347960018
VAR(4,"PRB","TRM")="Chronic allergic otitis externa"
VAR(5,"CON")=232250005
VAR(5,"DTS")=232225
VAR(5,"FSN","DSC")=620262016
VAR(5,"FSN","TRM")="Chronic bacterial otitis externa (disorder)"
VAR(5,"PRB","DSC")=347943011
VAR(5,"PRB","TRM")="Chronic bacterial otitis externa"
VAR(6,"CON")=232240009
VAR(6,"DTS")=232224
VAR(6,"FSN","DSC")=620261011
VAR(6,"FSN","TRM")="Chronic infective otitis externa (disorder)"
VAR(6,"PRB","DSC")=347942018
VAR(6,"PRB","TRM")="Chronic infective otitis externa"
VAR(6,"SYN",1,"DSC")="T1999003447"
VAR(6,"SYN",1,"TRM")="Chronic infectious otitis externa"
VAR(7,"CON")=232239005
VAR(7,"DTS")=232239
VAR(7,"FSN","DSC")=620278019
VAR(7,"FSN","TRM")="Chronic irritant otitis externa (disorder)"
VAR(7,"PRB","DSC")=347959011
VAR(7,"PRB","TRM")="Chronic irritant otitis externa"
VAR(8,"CON")=111898002
VAR(8,"DTS")=111898
VAR(8,"FSN","DSC")=634690013
VAR(8,"FSN","TRM")="Chronic mycotic otitis externa (disorder)"
VAR(8,"PRB","DSC")=179051014
VAR(8,"PRB","TRM")="Chronic mycotic otitis externa"
VAR(8,"SYN",1,"DSC")="T1999006250"
```
Figure 14-3 Fully Specified Name lookup – Add/Retire Date Omitted, Only Synonyms

Figure 14-4 shows only the first and last record (of the up to 25 records) returned of a Synonym lookup listing, with the add/retire date information being omitted:

```plaintext
>S OUT="VAR",IN="CHRONIC OTITIS EXTERNA^S^^^^^^1"

>W $$SEARCH^BSTSAPI(OUT,IN)

2`
```
VAR(1,"CHD",1,"CON")=111898002
VAR(1,"CHD",1,"DTS")=111898
VAR(1,"CHD",1,"TRM")="Chronic mycotic otitis externa (disorder)"
VAR(1,"CHD",2,"CON")=232236003
VAR(1,"CHD",2,"DTS")=232236
VAR(1,"CHD",2,"TRM")="Chronic non-infective otitis externa (disorder)"
VAR(1,"CHD",3,"CON")=402208007
VAR(1,"CHD",3,"DTS")=402208
VAR(1,"CHD",3,"TRM")="Chronic seborrheic otitis externa (disorder)"
VAR(1,"CHD",4,"CON")=232241006
VAR(1,"CHD",4,"DTS")=232241
VAR(1,"CHD",4,"TRM")="Chronic traumatic otitis externa (disorder)"
VAR(1,"CON")=53295002
VAR(1,"DTS")=53295
VAR(1,"FSN","DSC")=791398013
VAR(1,"FSN","TRM")="Chronic otitis externa (disorder)"
VAR(1,"IC9",1,"COD")=380.23
VAR(1,"IC9",1,"TYP")="IC9"
VAR(1,"ICD",1,"COD")="ZZZ.999"
VAR(1,"ICD",1,"TYP")="10D"
VAR(1,"ISA",1,"CON")=34936007
VAR(1,"ISA",1,"DTS")=34936
VAR(1,"ISA",1,"TRM")="Chronic dermatitis (disorder)"
VAR(1,"ISA",2,"CON")=128297008
VAR(1,"ISA",2,"DTS")=128297
VAR(1,"ISA",2,"TRM")="Chronic disease of ear (disorder)"
VAR(1,"ISA",3,"CON")=3135009
VAR(1,"ISA",3,"DTS")=3135
VAR(1,"ISA",3,"TRM")="Otitis externa (disorder)"
VAR(1,"PRB","DSC")=88624014
VAR(1,"PRB","TRM")="Chronic otitis externa"
VAR(1,"PRE","DSC")=88624014
VAR(1,"PRE","TRM")="Chronic otitis externa"
VAR(1,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(1,"SUB",2,"SUB")="Infectious Disease"
VAR(1,"SUB",3,"SUB")="PICK ENT"
VAR(1,"SUB",4,"SUB")="PICK ENT - Ear"
VAR(1,"SUB",5,"SUB")="SRCH ENT"
VAR(1,"SUB",6,"SUB")="SRCH Gastrointestinal"
VAR(1,"SUB",7,"SUB")="IHS Problem List"
VAR(1,"SYN",1,"DSC")=88625010
VAR(1,"SYN",1,"TRM")="Chronic otitis externa, NOS"

VAR(25,"CHD",1,"CON")=194207002
VAR(25,"CHD",1,"DTS")=194207
VAR(25,"CHD",1,"TRM")="Chronic otitis externa due to aspergillosis (disorder)"
VAR(25,"CON")=111898002
VAR(25,"DTS")=111898
VAR(25,"FSN","DSC")=634690013
VAR(25,"FSN","TRM")="Chronic mycotic otitis externa (disorder)"
VAR(25,"IC9",1,"COD")=380.15
VAR(25,"IC9",1,"TYP")="IC9"
VAR(25,"ICD",1,"COD")="ZZZ.999"
VAR(25,"ICD",1,"TYP")="10D"
VAR(25,"ISA",1,"CON")=177010002
VAR(25,"ISA",1,"DTS")=177010
VAR(25,"ISA",1,"TRM")="Chronic infectious disease (disorder)"
Figure 14-4 Synonym Lookup List – Add/Retire Date Omitted

Figure 14-5 shows the first and last records returned of a Synonym lookup listing, with the add/retire date information being omitted and the Synonym, Preferred, and ICD information getting returned:

```plaintext
TEST7>S OUT="VAR",IN="CHRONIC OTITIS EXTERNA^S^^^^^SPX^1"
TEST7>W $$SEARCH^BSTSAPI(OUT,IN)
2^  
TEST7>ZW @OUT
VAR(1,"CON")=53295002
VAR(1,"DTS")=53295
VAR(1,"FSN","DSC")=791398013
VAR(1,"FSN","TRM")="Chronic otitis externa (disorder)"
VAR(1,"IC9",1,"COD")=380.23
VAR(1,"IC9",1,"TYP")="IC9"
VAR(1,"ICD",1,"COD")="ZZZ.999"
VAR(1,"ICD",1,"TYP")="1ID"
VAR(1,"PRB","DSC")=88624014
VAR(1,"PRB","TRM")="Chronic otitis externa"
VAR(1,"PRE","DSC")=88624014
VAR(1,"PRE","TRM")="Chronic otitis externa"
VAR(1,"SYN",1,"DSC")=88625010
VAR(1,"SYN",1,"TRM")="Chronic otitis externa, NOS"
...
VAR(25,"CON")=111898002
VAR(25,"DTS")=111898
VAR(25,"FSN","DSC")=634690013
VAR(25,"FSN","TRM")="Chronic mycotic otitis externa (disorder)"
VAR(25,"IC9",1,"COD")=380.15
```
Figure 14-5 Synonym Lookup List – Add/Retire Date Omitted – Synonym Preferred, ICD Returned

Figure 14-6 shows the first and last records returned by a Synonym lookup listing where a local search was performed:

```plaintext
> S OUT="VAR",IN="CHRONIC OTITIS EXTERNA^S^^^^^^^^^1"
> W $$SEARCH^BSTSAPI(OUT,IN)
> ZW @OUT
VAR(1, "CHD", 1, "CON")=111898002
VAR(1, "CHD", 1, "DTS")=111898
VAR(1, "CHD", 1, "TRM")="Chronic mycotic otitis externa (disorder)"
VAR(1, "CHD", 1, "XADT")=""
VAR(1, "CHD", 1, "XRDT")=""
VAR(1, "CHD", 2, "CON")=232236003
VAR(1, "CHD", 2, "DTS")=232236
VAR(1, "CHD", 2, "TRM")="Chronic non-infective otitis externa (disorder)"
VAR(1, "CHD", 2, "XADT")=""
VAR(1, "CHD", 2, "XRDT")=""
VAR(1, "CHD", 3, "CON")=402208007
VAR(1, "CHD", 3, "DTS")=402208
VAR(1, "CHD", 3, "TRM")="Chronic seborrheic otitis externa (disorder)"
VAR(1, "CHD", 3, "XADT")=""
VAR(1, "CHD", 3, "XRDT")=""
VAR(1, "CHD", 4, "CON")=232241006
VAR(1, "CHD", 4, "DTS")=232241
VAR(1, "CHD", 4, "TRM")="Chronic traumatic otitis externa (disorder)"
VAR(1, "CHD", 4, "XADT")=""
VAR(1, "CHD", 4, "XRDT")=""
VAR(1, "CON")=53295002
VAR(1, "DTS")=53295
VAR(1, "FSN", "DSC")=791398013
VAR(1, "FSN", "TRM")="Chronic otitis externa (disorder)"
VAR(1, "FSN", "XADT")=3120301.07
VAR(1, "FSN", "XRDT")=""
VAR(1, "IC9", 1, "COD")=380.23
VAR(1, "IC9", 1, "TYP")="IC9"
VAR(1, "IC9", 1, "XADT")=""
VAR(1, "IC9", 1, "XRDT")=""
VAR(1, "ICD", 1, "COD")="ZZZ.999"
VAR(1, "ICD", 1, "TYP")="10D"
VAR(1, "ISA", 1, "CON")=34936007
VAR(1, "ISA", 1, "DTS")=34936
```
VAR(1,"ISA",1,"TRM")="Chronic dermatitis (disorder)"
VAR(1,"ISA",1,"XADT")=""
VAR(1,"ISA",1,"XRDT")=""
VAR(1,"ISA",2,"CON")=128297008
VAR(1,"ISA",2,"DTS")=128297
VAR(1,"ISA",2,"TRM")="Chronic disease of ear (disorder)"
VAR(1,"ISA",2,"XADT")=""
VAR(1,"ISA",2,"XRDT")=""
VAR(1,"ISA",3,"CON")=3135009
VAR(1,"ISA",3,"DTS")=3135
VAR(1,"ISA",3,"TRM")="Otitis externa (disorder)"
VAR(1,"ISA",3,"XADT")=""
VAR(1,"ISA",3,"XRDT")=""
VAR(1,"PRB","DSC")=88624014
VAR(1,"PRB","TRM")="Chronic otitis externa"
VAR(1,"PRE","DSC")=88624014
VAR(1,"PRE","TRM")="Chronic otitis externa"
VAR(1,"PRE","XADT")=3120301.07
VAR(1,"PRE","XRDT")=""
VAR(1,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(1,"SUB",1,"XADT")=""
VAR(1,"SUB",1,"XRDT")=""
VAR(1,"SUB",2,"SUB")="Infectious Disease"
VAR(1,"SUB",2,"XADT")=""
VAR(1,"SUB",2,"XRDT")=""
VAR(1,"SUB",3,"SUB")="PICK ENT"
VAR(1,"SUB",3,"XADT")=""
VAR(1,"SUB",3,"XRDT")=""
VAR(1,"SUB",4,"SUB")="PICK ENT - Ear"
VAR(1,"SUB",4,"XADT")=""
VAR(1,"SUB",4,"XRDT")=""
VAR(1,"SUB",5,"SUB")="SRCH ENT"
VAR(1,"SUB",5,"XADT")=""
VAR(1,"SUB",5,"XRDT")=""
VAR(1,"SUB",6,"SUB")="SRCH Gastrointestinal"
VAR(1,"SUB",6,"XADT")=""
VAR(1,"SUB",6,"XRDT")=""
VAR(1,"SUB",7,"SUB")="IHS Problem List"
VAR(1,"SUB",7,"XADT")=""
VAR(1,"SUB",7,"XRDT")=""
VAR(1,"SYN",1,"DSC")=88625010
VAR(1,"SYN",1,"TRM")="Chronic otitis externa, NOS"
VAR(1,"SYN",1,"XADT")=3120301.07
VAR(1,"SYN",1,"XRDT")=""
VAR(1,"XADT")=3120301
VAR(1,"XRDT")=3500101

VAR(21,"CHD",1,"CON")=194207002
VAR(21,"CHD",1,"DTS")=194207
VAR(21,"CHD",1,"TRM")="Chronic otitis externa due to aspergillosis (disorder)"
VAR(21,"CHD",1,"XADT")=""
VAR(21,"CHD",1,"XRDT")=""
VAR(21,"CON")=111898002
VAR(21,"DTS")=111898
VAR(21,"FSN","DSC")=634690013
VAR(21,"FSN","TRM")="Chronic mycotic otitis externa (disorder)"
VAR(21,"FSN","XADT")=3120301.07
VAR(21,"FSN","XRDT")=""
VAR(21,"IC9",1,"COD")=380.15
VAR(21,"IC9",1,"TYP")="IC9"
VAR(21,"IC9",1,"XADT")=""
VAR(21,"IC9",1,"XRDT")=""
VAR(21,"ICD",1,"COD")="ZZZ.999"
VAR(21,"ICD",1,"TYP")="10D"
VAR(21,"ISA",1,"CON")=177010002
VAR(21,"ISA",1,"DTS")=177010
VAR(21,"ISA",1,"TRM")="Chronic infectious disease (disorder)"
VAR(21,"ISA",1,"XADT")=""
VAR(21,"ISA",1,"XRDT")=""
VAR(21,"ISA",2,"CON")=232224009
VAR(21,"ISA",2,"DTS")=232224
VAR(21,"ISA",2,"TRM")="Chronic infective otitis externa (disorder)"
VAR(21,"ISA",2,"XADT")=""
VAR(21,"ISA",2,"XRDT")=""
VAR(21,"ISA",3,"CON")=53295002
VAR(21,"ISA",3,"DTS")=53295
VAR(21,"ISA",3,"TRM")="Chronic otitis externa (disorder)"
VAR(21,"ISA",3,"XADT")=""
VAR(21,"ISA",3,"XRDT")=""
VAR(21,"ISA",4,"CON")=53316003
VAR(21,"ISA",4,"DTS")=53316
VAR(21,"ISA",4,"TRM")="Otomycosis (disorder)"
VAR(21,"ISA",4,"XADT")=""
VAR(21,"ISA",4,"XRDT")=""
VAR(21,"PRB","DSC")=1219702011
VAR(21,"PRB","TRM")="Chronic fungal otitis externa"
VAR(21,"PRE","DSC")=179051014
VAR(21,"PRE","TRM")="Chronic mycotic otitis externa"
VAR(21,"PRE","XADT")=3120301.07
VAR(21,"PRE","XRDT")=""
VAR(21,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(21,"SUB",1,"XADT")=""
VAR(21,"SUB",1,"XRDT")=""
VAR(21,"SUB",2,"SUB")="Infectious Disease"
VAR(21,"SUB",2,"XADT")=""
VAR(21,"SUB",2,"XRDT")=""
VAR(21,"SUB",3,"SUB")="PICK ENT - Ear"
VAR(21,"SUB",3,"XADT")=""
VAR(21,"SUB",3,"XRDT")=""
VAR(21,"SUB",4,"SUB")="SRCH ENT"
VAR(21,"SUB",4,"XADT")=""
VAR(21,"SUB",4,"XRDT")=""
VAR(21,"SUB",5,"SUB")="SRCH Gastrointestinal"
VAR(21,"SUB",5,"XADT")=""
VAR(21,"SUB",5,"XRDT")=""
VAR(21,"SUB",6,"SUB")="IHS Problem List"
VAR(21,"SUB",6,"XADT")=""
VAR(21,"SUB",6,"XRDT")=""
VAR(21,"SYN","DSC")=T1999006250
VAR(21,"SYN","TRM")="Otitis externa (ear canal infection), chronic mycotic"
VAR(21,"SYN",1,"XADT")=3140301.07
VAR(21,"SYN",1,"XRDT")=""
VAR(21,"SYN",2,"DSC")=1219702011
VAR(21,"SYN",2,"TRM")="Chronic fungal otitis externa"
VAR(21,"SYN",2,"XADT")=3120301.07
VAR(21,"SYN",2,"XRDT")=""
VAR(21,"XADT")=3120301
VAR(21,"XRDT")=3500101
Figure 14-7 shows the records returned of a search to look in a specified subset:

```plaintext
>S OUT="VAR",IN="HEART^F^36^SRCH Family History^^^^1"

>W $$SEARCH^BSTSAPI(OUT,IN)

2^2

-ZW @OUT
VAR(1,"CON")=429958001
VAR(1,"DTS")=429958
VAR(1,"FSN","DSC")=2708295011
VAR(1,"FSN","TRM")="Family history of conduction disorder of the heart (situation)"
VAR(1,"IC9",1,"COD")="V17.49"
VAR(1,"IC9",1,"TYP")="IC9"
VAR(1,"ICD",1,"COD")="Z82.49"
VAR(1,"ICD",1,"TYP")="10D"
VAR(1,"ISA",1,"CON")=698248002
VAR(1,"ISA",1,"DTS")=1124046853
VAR(1,"ISA",1,"TRM")="Family history of cardiac arrhythmia (situation)"
VAR(1,"PRB","DSC")=2764080015
VAR(1,"PRB","TRM")="Family history of conduction disorder of the heart"
VAR(1,"PRE","DSC")=2764080015
VAR(1,"PRE","TRM")="Family history of conduction disorder of the heart"
VAR(1,"SUB",1,"SUB")="SRCH Family History"
VAR(1,"SUB",2,"SUB")="IHS Problem List"
VAR(1,"SYN",1,"DSC")=2764079018
VAR(1,"SYN",1,"TRM")="Family history of cardiac arrhythmia"
VAR(2,"CON")=433305001
VAR(2,"DTS")=433305
VAR(2,"FSN","DSC")=2708363012
VAR(2,"FSN","TRM")="Family history of congestive heart failure (situation)"
VAR(2,"IC9",1,"COD")="V19.8"
VAR(2,"IC9",1,"TYP")="IC9"
VAR(2,"ICD",1,"COD")="ZZZ.999"
VAR(2,"ICD",1,"TYP")="10D"
VAR(2,"ISA",1,"CON")=429959009
VAR(2,"ISA",1,"DTS")=429959
VAR(2,"ISA",1,"TRM")="Family history of heart failure (situation)"
VAR(2,"PRB","DSC")=2764062012
VAR(2,"PRB","TRM")="Family history of congestive heart failure"
VAR(2,"PRE","DSC")=2764062012
VAR(2,"PRE","TRM")="Family history of congestive heart failure"
VAR(2,"SUB",1,"SUB")="SRCH Cardiology"
VAR(2,"SUB",2,"SUB")="SRCH Complimentary Medicine"
VAR(2,"SUB",3,"SUB")="SRCH Family History"
VAR(2,"SUB",4,"SUB")="IHS Problem List"
VAR(3,"CHD",1,"CON")=433305001
VAR(3,"CHD",1,"DTS")=433305
VAR(3,"CHD",1,"TRM")="Family history of congestive heart failure (situation)"
VAR(3,"CON")=429959009
VAR(3,"DTS")=429959
VAR(3,"FSN","DSC")=2708296012
VAR(3,"FSN","TRM")="Family history of heart failure (situation)"
VAR(3,"ICD",1,"COD")="ZZZ.999"
```
VAR(3,"ICD",1,"TYP")="10D"
VAR(3,"ISA",1,"CON")=275120007
VAR(3,"ISA",1,"DTS")=275120
VAR(3,"ISA",1,"TRM")="Family history: Cardiac disorder (situation)"
VAR(3,"PRB","DSC")=2764081016
VAR(3,"PRB","TRM")="Family history of heart failure"
VAR(3,"PRE","DSC")=2764081016
VAR(3,"PRE","TRM")="Family history of heart failure"
VAR(3,"SUB",1,"SUB")="SRCH Complimentary Medicine"
VAR(3,"SUB",2,"SUB")="SRCH Family History"
VAR(3,"SUB",3,"SUB")="IHS Problem List"
VAR(4,"CHD",1,"CON")=275121006
VAR(4,"CHD",1,"DTS")=275121
VAR(4,"CHD",1,"TRM")="Family history: Angina (situation)"
VAR(4,"CHD",2,"CON")=266896003
VAR(4,"CHD",2,"DTS")=266896
VAR(4,"CHD",2,"TRM")="Family history: Ischemic heart disease at greater
than 60 years (situation)"
VAR(4,"CHD",3,"CON")=266895004
VAR(4,"CHD",3,"DTS")=266895
VAR(4,"CHD",3,"TRM")="Family history: Ischemic heart disease at less than
60 years (situation)"
VAR(4,"CHD",4,"CON")=266897007
VAR(4,"CHD",4,"DTS")=266897
VAR(4,"CHD",4,"TRM")="Family history: Myocardial infarction (situation)"
VAR(4,"CON")=297242006
VAR(4,"DTS")=297242
VAR(4,"FSN","DSC")=2610786013
VAR(4,"FSN","TRM")="Family history of ischemic heart disease (situation)"
VAR(4,"IC9",1,"COD")="V17.3"
VAR(4,"IC9",1,"TYP")="IC9"
VAR(4,"ICD",1,"COD")="Z82.49"
VAR(4,"ICD",1,"TYP")="10D"
VAR(4,"ISA",1,"CON")=275120007
VAR(4,"ISA",1,"DTS")=275120
VAR(4,"ISA",1,"TRM")="Family history: Cardiac disorder (situation)"
VAR(4,"PRB","DSC")=437727012
VAR(4,"PRB","TRM")="Family history of ischemic heart disease"
VAR(4,"PRE","DSC")=437727012
VAR(4,"PRE","TRM")="Family history of ischemic heart disease"
VAR(4,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(4,"SUB",2,"SUB")="SRCH Family History"
VAR(4,"SUB",3,"SUB")="SRCH Cardiology"
VAR(4,"SUB",4,"SUB")="SRCH Family Practice"
VAR(4,"SUB",5,"SUB")="SRCH Pediatrics"
VAR(4,"SUB",6,"SUB")="IHS Problem List"
VAR(4,"SYN",1,"DSC")="T19990000469"
VAR(4,"SYN",1,"TRM")="FHX of ischemic heart disease"
VAR(4,"SYN",2,"DSC")=692552012
VAR(4,"SYN",2,"TRM")="Family history of ischemic heart disease (context-
dependent category)"
VAR(4,"SYN",3,"DSC")=437730017
VAR(4,"SYN",3,"TRM")="FH: Ischemic heart disease"
VAR(4,"SYN",4,"DSC")=437729010
VAR(4,"SYN",4,"TRM")="FH: Ischaemic heart disease"
VAR(4,"SYN",5,"DSC")=437728019
VAR(4,"SYN",5,"TRM")="Family history of ischaemic heart disease"
VAR(5,"CHD",1,"CON")=417648007
VAR(5,"CHD",1,"DTS")=417648
VAR(5,"CHD",1,"TRM")="Family history of pulmonary infundibular stenosis
(situation)"
VAR(5,"CON")=160364005
VAR(5,"DTS")=160364
VAR(5,"FSN","DSC")=2607149013
VAR(5,"FSN","TRM")="Family history: Congenital heart disease (situation)"
VAR(5,"IC9",1,"COD")="V17.49"
VAR(5,"IC9",1,"TYP")="IC9"
VAR(5,"ICD",1,"COD")="Z2Z.999"
VAR(5,"ICD",1,"TYP")="10D"
VAR(5,"ISA",1,"CON")=266908007
VAR(5,"ISA",1,"DTS")=266908
VAR(5,"ISA",1,"TRM")="Family history of congenital anomaly of cardiovascular system (situation)"
VAR(5,"ISA",2,"CON")=275120007
VAR(5,"ISA",2,"DTS")=275120
VAR(5,"ISA",2,"TRM")="Family history: Cardiac disorder (situation)"
VAR(5,"PRB","DSC")=249974019
VAR(5,"PRB","TRM")="FH: Congenital heart disease"
VAR(5,"PRE","DSC")=249974019
VAR(5,"PRE","TRM")="FH: Congenital heart disease"
VAR(5,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(5,"SUB",2,"SUB")="SRCH Family History"
VAR(5,"SUB",3,"SUB")="IHS Problem List"
VAR(5,"SYN",1,"DSC")=2666595013
VAR(5,"SYN",1,"TRM")="Family history: Congenital heart disease"
VAR(5,"SYN",2,"DSC")=541268018
VAR(5,"SYN",2,"TRM")="Family history: Congenital heart disease (context-dependent category)"
VAR(5,"SYN",3,"DSC")=249973013
VAR(5,"SYN",3,"TRM")="FH: Congen heart disease"
VAR(5,"SYN",4,"DSC")=249973013
VAR(5,"SYN",4,"TRM")="FH: Congen heart disease (context-dependent category)"
VAR(6,"CON")=266896003
VAR(6,"DTS")=266896
VAR(6,"FSN","DSC")=2610064016
VAR(6,"FSN","TRM")="Family history: Ischemic heart disease at greater than 60 years (situation)"
VAR(6,"IC9",1,"COD")="V17.3"
VAR(6,"ICD",1,"COD")="Z82.49"
VAR(6,"ICD",1,"TYP")="10D"
VAR(6,"ISA",1,"CON")=297242006
VAR(6,"ISA",1,"DTS")=297242
VAR(6,"ISA",1,"TRM")="Family history of ischemic heart disease (situation)"
VAR(6,"PRB","DSC")=397698019
VAR(6,"PRB","TRM")="FH: Ischemic heart disease at greater than 60 years"
VAR(6,"PRE","DSC")=397698019
VAR(6,"PRE","TRM")="FH: Ischemic heart disease at greater than 60 years"
VAR(6,"SUB",1,"SUB")="SRCH Family History"
VAR(6,"SUB",2,"SUB")="IHS Problem List"
VAR(6,"SYN",1,"DSC")=2838827016
VAR(6,"SYN",1,"TRM")="Family history: Ischaemic heart disease at greater than 60 years"
VAR(6,"SYN",2,"DSC")=2669638016
VAR(6,"SYN",2,"TRM")="Family history: Ischemic heart disease at greater than 60 years"
VAR(6,"SYN",3,"DSC")=659445017
VAR(6,"SYN",3,"TRM")="Family history: Ischemic heart disease at greater than 60 years (context-dependent category)"
VAR(6,"SYN",4,"DSC")=397699010
VAR(6,"SYN",4,"TRM")="FH: Ischaemic heart disease at greater than 60 years"
VAR(7,"CON")=266895004
VAR(7,"DTS")=266895
VAR(7,"FSN","DSC")=2610063010
VAR(7,"FSN","TRM")="Family history: Ischemic heart disease at less than 60 years (situation)"
VAR(7,"IC9",1,"COD")="V17.3"
VAR(7,"IC9",1,"TYP")="IC9"
VAR(7,"ICD",1,"COD")="282.49"
VAR(7,"ICD",1,"TYP")="10D"
VAR(7,"ISA",1,"CON")=297242006
VAR(7,"ISA",1,"DTS")=297242
VAR(7,"ISA",1,"TRM")="Family history of ischemic heart disease (situation)"
VAR(7,"PRB","DSC")=397696015
VAR(7,"PRB","TRM")="FH: Ischemic heart disease at less than 60 years"
VAR(7,"PRE","DSC")=397696015
VAR(7,"PRE","TRM")="FH: Ischemic heart disease at less than 60 years"
VAR(7,"SUB",1,"SUB")="SRCH Family History"
VAR(7,"SUB",2,"SUB")="IHS Problem List"
VAR(7,"SYN",1,"DSC")=2838291017
VAR(7,"SYN",1,"TRM")="Family history: Ischaemic heart disease at less than 60 years"
VAR(7,"SYN",2,"DSC")=2669637014
VAR(7,"SYN",2,"TRM")="Family history: Ischemic heart disease at less than 60 years"
VAR(7,"SYN",3,"DSC")=659444018
VAR(7,"SYN",3,"TRM")="Family history: Ischemic heart disease at less than 60 years (context-dependent category)"
VAR(7,"SYN",4,"DSC")=397697012
VAR(7,"SYN",4,"TRM")="FH: Ischemic heart dis. <60"
VAR(7,"SYN",5,"DSC")=397695016
VAR(7,"SYN",5,"TRM")="FH: Ischaemic heart disease at less than 60 years"
VAR(7,"SYN",6,"DSC")=397694017
VAR(7,"SYN",6,"TRM")="FH: Ischaemic heart dis. <60"
VAR(8,"CON")=134439009
VAR(8,"DTS")=134439
VAR(8,"FSN","DSC")=2606613016
VAR(8,"FSN","TRM")="Family history: premature coronary heart disease (situation)"
VAR(8,"ICD",1,"COD")="282.49"
VAR(8,"ICD",1,"TYP")="10D"
VAR(8,"ISA",1,"CON")=266894000
VAR(8,"ISA",1,"DTS")=266894
VAR(8,"ISA",1,"TRM")="Family history: Cardiovascular disease (situation)"
VAR(8,"PRB","DSC")=216245011
VAR(8,"PRB","TRM")="FH: premature coronary heart disease"
VAR(8,"PRE","DSC")=216245011
VAR(8,"PRE","TRM")="FH: premature coronary heart disease"
VAR(8,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(8,"SUB",2,"SUB")="SRCH Family History"
VAR(8,"SUB",3,"SUB")="IHS Problem List"
VAR(8,"SYN",1,"DSC")=2664552011
VAR(8,"SYN",1,"TRM")="Family history: premature coronary heart disease"
VAR(8,"SYN",2,"DSC")=514018012
VAR(8,"SYN",2,"TRM")="Family history: premature coronary heart disease (context-dependent category)"
VAR(9,"CHD",1,"CON")=698248002
VAR(9,"CHD",1,"DTS")=1124046853
VAR(9,"CHD",1,"TRM")="Family history of cardiac arrhythmia (situation)"
VAR(9,"CHD",2,"CON")=430091005
VAR(9,"CHD",2,"DTS")=430091
VAR(9,"CHD",2,"TRM")="Family history of coronary arteriosclerosis (situation)"
VAR(9,"CHD",3,"CON")=429978009
VAR(9,"CHD",3,"DTS")=429978
VAR(9,"CHD",3,"TRM")="Family history of endocarditis (situation)"
VAR(9,"CHD",4,"CON")=429950009
VAR(9,"CHD",4,"DTS")=429959
VAR(9,"CHD",4,"TRM")="Family history of heart failure (situation)"
VAR(9,"CHD",5,"CON")=297242006
VAR(9,"CHD",5,"DTS")=297242
VAR(9,"CHD",5,"TRM")="Family history of ischemic heart disease (situation)"
VAR(9,"CHD",6,"CON")=430730004
VAR(9,"CHD",6,"DTS")=430730
VAR(9,"CHD",6,"TRM")="Family history of mitral valve regurgitation (situation)"
VAR(9,"CHD",7,"CON")=430915000
VAR(9,"CHD",7,"DTS")=430915
VAR(9,"CHD",7,"TRM")="Family history of myocarditis (situation)"
VAR(9,"CHD",8,"CON")=429952000
VAR(9,"CHD",8,"DTS")=429952
VAR(9,"CHD",8,"TRM")="Family history of stenosis of aortic valve (situation)"
VAR(9,"CHD",9,"CON")=390915000
VAR(9,"CHD",9,"DTS")=390915
VAR(9,"CHD",9,"TRM")="Family history: Cardiomyopathy (situation)"
VAR(9,"CHD",10,"CON")=160364005
VAR(9,"CHD",10,"DTS")=160364
VAR(9,"CHD",10,"TRM")="Family history: Congenital heart disease (situation)"
VAR(9,"CHD",11,"CON")=275124003
VAR(9,"CHD",11,"DTS")=275124
VAR(9,"CHD",11,"TRM")="Family history: Coronary thrombosis (situation)"
VAR(9,"CON")=275120007
VAR(9,"DTS")=275120
VAR(9,"FSN","DSC")=2610340013
VAR(9,"FSN","TRM")="Family history: Cardiac disorder (situation)"
VAR(9,"IC9",1,"COD")="V17.49"
VAR(9,"IC9",1,"TYP")="IC9"
VAR(9,"ICD",1,"COD")="Z82.49"
VAR(9,"ICD",1,"TYP")="10D"
VAR(9,"ISA",1,"CON")=266894000
VAR(9,"ISA",1,"DTS")=266894
VAR(9,"ISA",1,"TRM")="Family history: Cardiovascular disease (situation)"
VAR(9,"PRB","DSC")=411052015
VAR(9,"PRB","TRM")="FH: Cardiac disorder"
VAR(9,"PRE","DSC")=411052015
VAR(9,"PRE","TRM")="FH: Cardiac disorder"
VAR(9,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(9,"SUB",2,"SUB")="SRCH Family History"
VAR(9,"SUB",3,"SUB")="IHS Problem List"
VAR(9,"SYN",1,"DSC")=2669864012
VAR(9,"SYN",1,"TRM")="Family history: Cardiac disorder"
VAR(9,"SYN",2,"DSC")=1495319014
VAR(9,"SYN",2,"TRM")="FH: Heart disorder"
VAR(10,"CHD",1,"CON")=161513002
VAR(10,"CHD",1,"DTS")=161513
VAR(10,"CHD",1,"TRM")="History of ventricular fibrillation (situation)"
VAR(10,"CON")=429007001
### Figure 14-7 Specified Subset Search

Figure 14-8 shows how to use the parameter to control the maximum results to return. In this case, ‘4’ results were requested. Just Synonym/Preferred information is getting returned:

```
> S OUT="VAR",IN="EDEMA^S^^^^4^SP^1"
> W $SEARCH^BSTSAPI(OUT,IN)
```

| VAR(1,"CON") | 79654002 |
| VAR(1,"DTS") | 79654 |
| VAR(1,"FN", "DSC") | 820728017 |
| VAR(1,"FN", "TRM") | "Edema (morphologic abnormality)" |
| VAR(1,"PRB", "DSC") | 1218450019 |
| VAR(1,"PRB", "TRM") | "Edema - lesion" |
| VAR(1,"PRE", "DSC") | 1218449019 |
| VAR(1,"PRE", "TRM") | "Edematous" |
| VAR(1,"SYN", 1,"DSC") | 1216963010 |
| VAR(1,"SYN", 1,"TRM") | "Oedematous" |
| VAR(1,"SYN", 2,"DSC") | 1216962017 |
| VAR(1,"SYN", 2,"TRM") | "Oedema - lesion" |
| VAR(1,"SYN", 3,"DSC") | 504173016 |
| VAR(1,"SYN", 3,"TRM") | "Oedema" |
| VAR(1,"SYN", 4,"DSC") | 132149015 |
| VAR(1,"SYN", 4,"TRM") | "Oedema, NOS" |
| VAR(1,"SYN", 5,"DSC") | 132148011 |
| VAR(1,"SYN", 5,"TRM") | "Oedema" |

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| VAR(10,"DTS") | 429007 |
| VAR(10,"FN", "DSC") | 268980014 |
| VAR(10,"FN", "TRM") | "History of cardiac arrest (situation)" |
| VAR(10,"IC9", 1,"COD") | "V12.53" |
| VAR(10,"IC9", 1,"TYP") | "IC9" |
| VAR(10,"ICD", 1,"COD") | 286.74 |
| VAR(10,"ICD", 1,"TYP") | "10D" |
| VAR(10,"ISA", 1,"CON") | 131471000119104 |
| VAR(10,"ISA", 1,"DTS") | 1119013147 |
| VAR(10,"ISA", 1,"TRM") | "History of cardiac arrhythmia (situation)" |
| VAR(10,"ISA", 2,"CON") | 275544003 |
| VAR(10,"ISA", 2,"DTS") | 275544 |
| VAR(10,"ISA", 2,"TRM") | "History of heart disorder (situation)"
| VAR(10,"PRB", "DSC") | 2695484016 |
| VAR(10,"PRB", "TRM") | "History of cardiac arrest" |
| VAR(10,"PRE", "DSC") | 2695484016 |
| VAR(10,"PRE", "TRM") | "History of cardiac arrest" |
| VAR(10,"SUB", 1,"SUB") | "IHS PROBLEM SUPERSET" |
| VAR(10,"SUB", 2,"SUB") | "SRCH Family History" |
| VAR(10,"SUB", 3,"SUB") | "SRCH Family Practice" |
| VAR(10,"SUB", 4,"SUB") | "IHS Problem List" |
| VAR(10,"SYN", 1,"DSC") | T1999004877 |
| VAR(10,"SYN", 1,"TRM") | "History of cardiac arrest (heart stoppage)"
| VAR(10,"SYN", 2,"DSC") | T1999005086 |
| VAR(10,"SYN", 2,"TRM") | "Hx of cardiac arrest" |

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| VAR(1,"CON") | 79654002 |
| VAR(1,"DTS") | 79654 |
| VAR(1,"FN", "DSC") | 820728017 |
| VAR(1,"FN", "TRM") | "Edema (morphologic abnormality)" |
| VAR(1,"PRB", "DSC") | 132147018 |
| VAR(1,"PRB", "TRM") | "Edema" |
| VAR(1,"PRE", "DSC") | 132147018 |
| VAR(1,"PRE", "TRM") | "Edema" |
| VAR(1,"SYN", 1,"DSC") | 1218450019 |
| VAR(1,"SYN", 1,"TRM") | "Edema - lesion" |
| VAR(1,"SYN", 2,"DSC") | 1218449019 |
| VAR(1,"SYN", 2,"TRM") | "Edematous" |
| VAR(1,"SYN", 3,"DSC") | 1216963010 |
| VAR(1,"SYN", 3,"TRM") | "Oedematous" |
| VAR(1,"SYN", 4,"DSC") | 1216962017 |
| VAR(1,"SYN", 4,"TRM") | "Oedema - lesion" |
| VAR(1,"SYN", 5,"DSC") | 504173016 |
| VAR(1,"SYN", 5,"TRM") | "Oedema" |
| VAR(1,"SYN", 6,"DSC") | 132149015 |
| VAR(1,"SYN", 6,"TRM") | "Oedema, NOS" |
| VAR(1,"SYN", 7,"DSC") | 132148011 |
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Figure 14-8 Maximum Results Parameter
The following examples show how the Batch parameters can be used to return partial search listings. The first call (Figure 14-9) performs a search which will return up to four records. In this case two terms will be returned, starting with the first term:

```
> TEST7>S OUT="VAR",IN="EDEMA^S^^^^4^SP^1^1^2"
TEST7>W $$SEARCH^BSTSAPI(OUT,IN)
TEST7>ZW @OUT
VAR(1,"CON")=79654002
VAR(1,"DTS")=79654
VAR(1,"FSN","DSC")=820728017
VAR(1,"FSN","TRM")="Edema (morphologic abnormality)"
VAR(1,"PRB","DSC")=132147018
VAR(1,"PRB","TRM")="Edema"
VAR(1,"PRE","DSC")=132147018
VAR(1,"PRE","TRM")="Edema"
VAR(1,"SYN",1,"DSC")=1218450019
VAR(1,"SYN",1,"TRM")="Edema - lesion"
VAR(1,"SYN",2,"DSC")=1218449019
VAR(1,"SYN",2,"TRM")="Edematous"
VAR(1,"SYN",3,"DSC")=1216963010
VAR(1,"SYN",3,"TRM")="Oedematous"
VAR(1,"SYN",4,"DSC")=1216962017
VAR(1,"SYN",4,"TRM")="Oedema - lesion"
VAR(1,"SYN",5,"DSC")=504173016
VAR(1,"SYN",5,"TRM")="Oedema"
VAR(1,"SYN",6,"DSC")=132149015
VAR(1,"SYN",6,"TRM")="Oedema, NOS"
VAR(1,"SYN",7,"DSC")=132148011
VAR(1,"SYN",7,"TRM")="Edema, NOS"
VAR(2,"CON")=267038008
VAR(2,"DTS")=267038
VAR(2,"FSN","DSC")=659606016
VAR(2,"FSN","TRM")="Edema (finding)"
VAR(2,"PRB","DSC")=397895018
VAR(2,"PRB","TRM")="Edema"
VAR(2,"PRE","DSC")=397895018
VAR(2,"PRE","TRM")="Edema"
VAR(2,"SYN",1,"DSC")="T1999004064"
VAR(2,"SYN",1,"TRM")="Edema (swelling)"
VAR(2,"SYN",2,"DSC")=397896017
VAR(2,"SYN",2,"TRM")="Interstitial oedema"
VAR(2,"SYN",3,"DSC")=397894019
VAR(2,"SYN",3,"TRM")="Oedema"
VAR(2,"SYN",4,"DSC")=397893013
VAR(2,"SYN",4,"TRM")="Interstitial edema"
```

Figure 14-9 Batch Parameters with Partial Search Listings

The next call (Figure 14-10) performs a search which will return up to four records. In this case, two terms will be returned, starting with the third term in the total list of results:

```
>S OUT="VAR",IN="EDEMA^S^^^^4^SP^1^1^2"
>W $$SEARCH^BSTSAPI(OUT,IN)
```
2^ 
>ZW @OUT
VAR(1,"CON")=79654002
VAR(1,"DTS")=79654
VAR(1,"FSN","DSC")=820728017
VAR(1,"FSN","TRM")="Edema (morphologic abnormality)"
VAR(1,"PRB","DSC")=132147018
VAR(1,"PRB","TRM")="Edema"
VAR(1,"PRE","DSC")=132147018
VAR(1,"PRE","TRM")="Edema"
VAR(1,"SYN",1,"DSC")=1218450019
VAR(1,"SYN",1,"TRM")="Edema - lesion"
VAR(1,"SYN",2,"DSC")=1218449019
VAR(1,"SYN",2,"TRM")="Edematous"
VAR(1,"SYN",3,"DSC")=1216963010
VAR(1,"SYN",3,"TRM")="Oedematous"
VAR(1,"SYN",4,"DSC")=1216962017
VAR(1,"SYN",4,"TRM")="Oedema - lesion"
VAR(1,"SYN",5,"DSC")=504173016
VAR(1,"SYN",5,"TRM")="Oedema"
VAR(1,"SYN",6,"DSC")=132149015
VAR(1,"SYN",6,"TRM")="Oedema, NOS"
VAR(1,"SYN",7,"DSC")=132148011
VAR(1,"SYN",7,"TRM")="Edema, NOS"
VAR(2,"CON")=267038008
VAR(2,"DTS")=267038
VAR(2,"FSN","DSC")=659606016
VAR(2,"FSN","TRM")="Edema (finding)"
VAR(2,"PRB","DSC")=397895018
VAR(2,"PRB","TRM")="Edema"
VAR(2,"PRE","DSC")=397895018
VAR(2,"PRE","TRM")="Edema"
VAR(2,"SYN",1,"DSC")="T1999004064"
VAR(2,"SYN",1,"TRM")="Edema (swelling)"
VAR(2,"SYN",2,"DSC")=397896017
VAR(2,"SYN",2,"TRM")="Interstial oedema"
VAR(2,"SYN",3,"DSC")=397894019
VAR(2,"SYN",3,"TRM")="Oedema"
VAR(2,"SYN",4,"DSC")=397893013
VAR(2,"SYN",4,"TRM")="Interstial edema"

Figure 14-10 Batch parameters, returning results in groups

Figure 14-11 shows the only the first and last record (of the up to 25 records) returned of a RxNorm codeset lookup:

> S OUT="VAR",IN="ACACIA^S^1552"
> S OUT="VAR",IN="ACACIA^S^1552"
> W $$SEARCH^BSTSAPI(OUT,IN)
2^ 
>ZW @OUT
VAR(1,"CON")=851732
VAR(1,"DTS")=11328554
VAR(1,"FSN","DSC")=2973307
VAR(1,"FSN","TRM")="Acacia pollen extract"
VAR(1,"FSN","XADT")=""
IHS Standard Terminology Application Programming Interface (BSTS)  Version 1.0 Patch 4

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Figure 14-11 RxNorm Codeset Lookup

Figure 14-12 shows only the first and last record (of the up to 10 records) returned of a UNII codeset lookup:

```plaintext
>S OUT="VAR",IN="ACACIA^S^5180^^^10"
>W $$SEARCH^BSTSAPI(OUT,IN) 2^>ZW @OUT
VAR(1,"CON")="24SO2J2960"
VAR(1,"DTS")=8773
VAR(1,"FSN","DSC")="24SO2J2960.8773"
VAR(1,"FSN","TRM")="ACACIA LONGIFOLIA POLLEN"
VAR(1,"FSN","XADT")=""
VAR(1,"FSN","XRDT")=""
VAR(1,"PRB","DSC")="24SO2J2960.71552"
```
<p>| VAR(1,&quot;PRB&quot;,&quot;TRM&quot;)=&quot;POLLENS - TREES, ACACIA ACACIA LONGIFOLIA&quot; | VAR(1,&quot;SYN&quot;,1,&quot;DSC&quot;)=&quot;24SO2J2960.295787&quot; |
| VAR(1,&quot;SYN&quot;,1,&quot;TRM&quot;)=&quot;ACACIA LONGIFOLIA POLLEN [WHO-DD]&quot; | VAR(1,&quot;SYN&quot;,2,&quot;DSC&quot;)=&quot;24SO2J2960.295786&quot; |
| VAR(1,&quot;SYN&quot;,1,&quot;XADT&quot;)=&quot;&quot; | VAR(1,&quot;SYN&quot;,2,&quot;TRM&quot;)=&quot;ALLERGENIC EXTRACT- ACACIA ACACIA LONGIFOLIA&quot; |
| VAR(1,&quot;SYN&quot;,1,&quot;XRDT&quot;)=&quot;&quot; | VAR(1,&quot;SYN&quot;,2,&quot;XADT&quot;)=&quot;&quot; |
| VAR(1,&quot;SYN&quot;,2,&quot;DSC&quot;)=&quot;24SO2J2960.87209&quot; | VAR(1,&quot;SYN&quot;,2,&quot;XRDT&quot;)=&quot;&quot; |
| VAR(1,&quot;SYN&quot;,2,&quot;TRM&quot;)=&quot;ACACIA LONGIFOLIA POLLEN EXTRACT&quot; | VAR(1,&quot;SYN&quot;,3,&quot;DSC&quot;)=&quot;24SO2J2960.8775&quot; |
| VAR(1,&quot;SYN&quot;,3,&quot;TRM&quot;)=&quot;WESTERN YARROW POLLEN&quot; | VAR(1,&quot;SYN&quot;,3,&quot;XADT&quot;)=&quot;&quot; |
| VAR(1,&quot;SYN&quot;,3,&quot;XRDT&quot;)=&quot;&quot; | VAR(1,&quot;SYN&quot;,4,&quot;DSC&quot;)=&quot;24SO2J2960.8774&quot; |
| VAR(1,&quot;SYN&quot;,4,&quot;TRM&quot;)=&quot;SYDNEY GOLDEN WATTLE POLLEN&quot; | VAR(1,&quot;SYN&quot;,4,&quot;XADT&quot;)=&quot;&quot; |
| VAR(1,&quot;SYN&quot;,4,&quot;XRDT&quot;)=&quot;&quot; | VAR(1,&quot;SYN&quot;,5,&quot;DSC&quot;)=&quot;24SO2J2960.71552&quot; |
| VAR(1,&quot;SYN&quot;,5,&quot;TRM&quot;)=&quot;POLLENS - TREES, ACACIA ACACIA LONGIFOLIA&quot; | VAR(1,&quot;SYN&quot;,5,&quot;XADT&quot;)=&quot;&quot; |
| VAR(1,&quot;SYN&quot;,5,&quot;XRDT&quot;)=&quot;&quot; | VAR(1,&quot;SYN&quot;,6,&quot;DSC&quot;)=&quot;24SO2J2960.87775&quot; |
| VAR(1,&quot;SYN&quot;,6,&quot;TRM&quot;)=&quot;WESTERN YARROW POLLEN&quot; | VAR(1,&quot;SYN&quot;,6,&quot;XADT&quot;)=&quot;&quot; |
| VAR(1,&quot;SYN&quot;,6,&quot;XRDT&quot;)=&quot;&quot; | VAR(1,&quot;SYN&quot;,7,&quot;DSC&quot;)=&quot;24SO2J2960.8774&quot; |
| VAR(1,&quot;SYN&quot;,7,&quot;TRM&quot;)=&quot;SYDNEY GOLDEN WATTLE POLLEN&quot; | VAR(1,&quot;SYN&quot;,7,&quot;XADT&quot;)=&quot;&quot; |
| VAR(1,&quot;SYN&quot;,7,&quot;XRDT&quot;)=&quot;&quot; | VAR(1,&quot;SYN&quot;,8,&quot;DSC&quot;)=&quot;24SO2J2960.8772&quot; |
| VAR(1,&quot;SYN&quot;,8,&quot;TRM&quot;)=&quot;ACACIA LATIFOLIA POLLEN&quot; | VAR(1,&quot;SYN&quot;,8,&quot;XADT&quot;)=&quot;&quot; |
| VAR(1,&quot;SYN&quot;,8,&quot;XRDT&quot;)=&quot;&quot; | VAR(1,&quot;XADT&quot;)=&quot;&quot; |
| VAR(1,&quot;XRDT&quot;)=&quot;&quot; | VAR(10,&quot;CON&quot;)=&quot;5C5403N26O&quot; |
| VAR(10,&quot;DTS&quot;)=57 | VAR(10,&quot;FSN&quot;,&quot;DSC&quot;)=&quot;5C5403N26O.57&quot; |
| VAR(10,&quot;FSN&quot;,&quot;TRM&quot;)=&quot;ACACIA&quot; | VAR(10,&quot;FSN&quot;,&quot;XADT&quot;)=&quot;&quot; |
| VAR(10,&quot;FSN&quot;,&quot;XRDT&quot;)=&quot;&quot; | VAR(10,&quot;PRB&quot;,&quot;DSC&quot;)=&quot;5C5403N260.8755&quot; |
| VAR(10,&quot;PRB&quot;,&quot;TRM&quot;)=&quot;ACACIA GUM&quot; | VAR(10,&quot;SYN&quot;,1,&quot;DSC&quot;)=&quot;5C5403N260.316825&quot; |
| VAR(10,&quot;SYN&quot;,1,&quot;TRM&quot;)=&quot;ACACIA POWDER [VANDF]&quot; | VAR(10,&quot;SYN&quot;,1,&quot;XADT&quot;)=&quot;&quot; |
| VAR(10,&quot;SYN&quot;,1,&quot;XRDT&quot;)=&quot;&quot; | VAR(10,&quot;SYN&quot;,2,&quot;DSC&quot;)=&quot;5C5403N260.316824&quot; |
| VAR(10,&quot;SYN&quot;,2,&quot;TRM&quot;)=&quot;ACACIA [VANDF]&quot; | VAR(10,&quot;SYN&quot;,2,&quot;XADT&quot;)=&quot;&quot; |
| VAR(10,&quot;SYN&quot;,3,&quot;TRM&quot;)=&quot;GUM ARABIC [VANDF]&quot; | VAR(10,&quot;SYN&quot;,3,&quot;XADT&quot;)=&quot;&quot; |
| VAR(10,&quot;SYN&quot;,4,&quot;TRM&quot;)=&quot;PLANTS AND PLANT PARTS, GUM, ACACIA OR ARABIC ACACIA SENEGAL&quot; |</p>
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<td>VAR(10,&quot;SYN&quot;,22,&quot;XADT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,22,&quot;XRDT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,23,&quot;DSC&quot;) = &quot;5C5403N26O.87151&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,23,&quot;XADT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,23,&quot;XRDT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,24,&quot;DSC&quot;) = &quot;5C5403N26O.87150&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,24,&quot;XADT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,24,&quot;XRDT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,25,&quot;DSC&quot;) = &quot;5C5403N26O.87149&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,25,&quot;XADT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,25,&quot;XRDT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,26,&quot;DSC&quot;) = &quot;5C5403N26O.87148&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,26,&quot;XADT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,26,&quot;XRDT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,27,&quot;DSC&quot;) = &quot;5C5403N26O.21204&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,27,&quot;XADT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,27,&quot;XRDT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,28,&quot;DSC&quot;) = &quot;5C5403N26O.21203&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,28,&quot;XADT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,28,&quot;XRDT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,29,&quot;DSC&quot;) = &quot;5C5403N26O.21202&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,29,&quot;XADT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,29,&quot;XRDT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,30,&quot;DSC&quot;) = &quot;5C5403N26O.21201&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,30,&quot;XADT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,30,&quot;XRDT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,31,&quot;DSC&quot;) = &quot;5C5403N26O.21200&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,31,&quot;XADT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,31,&quot;XRDT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,32,&quot;DSC&quot;) = &quot;5C5403N26O.21199&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,32,&quot;XADT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,32,&quot;XRDT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,33,&quot;DSC&quot;) = &quot;5C5403N26O.21198&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,33,&quot;XADT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>VAR(10,&quot;SYN&quot;,33,&quot;XRDT&quot;) = &quot;&quot;</td>
<td></td>
</tr>
</tbody>
</table>
VAR(10,"SYN",34,"XRDT")=""
VAR(10,"SYN",35,"DSC")="5C5403N260.21196"
VAR(10,"SYN",35,"TRM")="ACACIAE GUMMI"
VAR(10,"SYN",35,"XADT")=""
VAR(10,"SYN",35,"XRDT")=""
VAR(10,"SYN",36,"DSC")="5C5403N260.21195"
VAR(10,"SYN",36,"TRM")="ACACIA VOLKII RESIN"
VAR(10,"SYN",36,"XADT")=""
VAR(10,"SYN",36,"XRDT")=""
VAR(10,"SYN",37,"DSC")="5C5403N260.21194"
VAR(10,"SYN",37,"TRM")="ACACIA SPINOSA RESIN"
VAR(10,"SYN",37,"XADT")=""
VAR(10,"SYN",37,"XRDT")=""
VAR(10,"SYN",38,"DSC")="5C5403N260.21193"
VAR(10,"SYN",38,"TRM")="ACACIA RUPESTRIS RESIN"
VAR(10,"SYN",38,"XADT")=""
VAR(10,"SYN",38,"XRDT")=""
VAR(10,"SYN",39,"DSC")="5C5403N260.21192"
VAR(10,"SYN",39,"TRM")="ACACIA OXYOSPRION RESIN"
VAR(10,"SYN",39,"XADT")=""
VAR(10,"SYN",39,"XRDT")=""
VAR(10,"SYN",40,"DSC")="5C5403N260.21191"
VAR(10,"SYN",40,"TRM")="ACACIA MUCILAGE"
VAR(10,"SYN",40,"XADT")=""
VAR(10,"SYN",40,"XRDT")=""
VAR(10,"SYN",41,"DSC")="5C5403N260.21190"
VAR(10,"SYN",41,"TRM")="ACACIA CUFODONTII RESIN"
VAR(10,"SYN",41,"XADT")=""
VAR(10,"SYN",41,"XRDT")=""
VAR(10,"SYN",42,"DSC")="5C5403N260.21189"
VAR(10,"SYN",42,"TRM")="ACACIA CIRCUMMARGINATA RESIN"
VAR(10,"SYN",42,"XADT")=""
VAR(10,"SYN",42,"XRDT")=""
VAR(10,"SYN",43,"DSC")="5C5403N260.21188"
VAR(10,"SYN",43,"TRM")="ACACIA ARABICA"
VAR(10,"SYN",43,"XADT")=""
VAR(10,"SYN",43,"XRDT")=""
VAR(10,"SYN",44,"DSC")="5C5403N260.8759"
VAR(10,"SYN",44,"TRM")="GUM ARABIC"
VAR(10,"SYN",44,"XADT")=""
VAR(10,"SYN",44,"XRDT")=""
VAR(10,"SYN",45,"DSC")="5C5403N260.8758"
VAR(10,"SYN",45,"TRM")="GUM ACACIA"
VAR(10,"SYN",45,"XADT")=""
VAR(10,"SYN",45,"XRDT")=""
VAR(10,"SYN",46,"DSC")="5C5403N260.8757"
VAR(10,"SYN",46,"TRM")="ACACIA VEREK RESIN"
VAR(10,"SYN",46,"XADT")=""
VAR(10,"SYN",46,"XRDT")=""
Figure 14-12 UNII Codeset Lookup

Figure 14-13 shows the records returned on a search on the GMRA Signs Symptoms (32772) namespace lookup:

```
> S  OUT="VAR", IN="ABDOMINAL^S^32772"

> W  $SEARCH.BSTSAPI(OUT, IN)

ZW  OUT
VAR(1, "ASM", 1, "CON")=21522001
VAR(1, "ASM", 1, "DTS")=21522
VAR(1, "CON")="ABDOMINAL PAIN"
VAR(1, "DTS")=692
VAR(1, "FSN", "DSC")="T122"
VAR(1, "FSN", "TRM")="ABDOMINAL PAIN"
VAR(1, "FSN", "XADT")=""
VAR(1, "FSN", "XRDT")=""
VAR(1, "PRB", "DSC")="T122"
VAR(1, "PRB", "TRM")="ABDOMINAL PAIN"
VAR(1, "PRE", "DSC")="T578"
VAR(1, "PRE", "TRM")="GI PAIN"
VAR(1, "PRE", "XADT")=""
VAR(1, "PRE", "XRDT")=""
VAR(1, "SYN", 1, "DSC")="T577"
VAR(1, "SYN", 1, "TRM")="GASTROINTESTINAL PAIN"
VAR(1, "SYN", 1, "XADT")=""
VAR(1, "SYN", 1, "XRDT")=""
VAR(1, "XADT")=""
VAR(1, "XRDT")=""
VAR(2, "ASM", 1, "CON")=51197009
VAR(2, "ASM", 1, "DTS")=51197
VAR(2, "CON")="ABDOMINAL CRAMPS"
VAR(2, "DTS")=572
VAR(2, "FSN", "DSC")="T2"
VAR(2, "FSN", "TRM")="ABDOMINAL CRAMPS"
VAR(2, "FSN", "XADT")=""
VAR(2, "FSN", "XRDT")=""
VAR(2, "PRB", "DSC")="T2"
VAR(2, "PRB", "TRM")="ABDOMINAL CRAMPS"
VAR(2, "XADT")=""
VAR(2, "XRDT")=""
VAR(3, "ASM", 1, "CON")=116289008
VAR(3, "ASM", 1, "DTS")=116289
VAR(3, "CON")="ABDOMINAL BLOATING"
VAR(3, "DTS")=603
VAR(3, "FSN", "DSC")="T33"
VAR(3, "FSN", "TRM")="ABDOMINAL BLOATING"
VAR(3, "FSN", "XADT")=""
VAR(3, "FSN", "XRDT")=""
VAR(3, "PRB", "DSC")="T33"
VAR(3, "PRB", "TRM")="ABDOMINAL BLOATING"
VAR(3, "XADT")=""
VAR(3, "XRDT")=""
VAR(4, "ASM", 1, "CON")=43364001
VAR(4, "ASM", 1, "DTS")=43364
VAR(4, "CON")="ABDOMINAL DISCOMFORT"
VAR(4, "DTS")=960
VAR(4, "FSN", "DSC")="T390"
VAR(4, "FSN", "TRM")="ABDOMINAL DISCOMFORT"
VAR(4, "FSN", "XADT")=""
```

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110
VAR(4,"FSN","XRDT")=""
VAR(4,"PRB","DSC")="T390"
VAR(4,"PRB","TRM")="ABDOMINAL DISCOMFORT"
VAR(4,"XADT")=""
VAR(4,"XRDT")="" >

> Figure 14-13 GMRA Signs Symptoms

Figure 14-14 shows only the records returned of a GMRA Allergies with Maps namespace search:

S OUT="VAR",IN="ABALONE^S^32773"
W $$$SEARCH^BSTSAPI(OUT,IN)
2^ >Z @OUT
VAR(1,"AUN",1,"CON")="9V427P92D"
VAR(1,"AUN",1,"DTS")=43
VAR(1,"CON")="ABALONE"
VAR(1,"DTS")=1
VAR(1,"FSN","DSC")="T1"
VAR(1,"FSN","TRM")="ABALONE"
VAR(1,"FSN","XADT")=""
VAR(1,"FSN","XRDT")=""
VAR(1,"PRB","DSC")="T1"
VAR(1,"PRB","TRM")="ABALONE"
VAR(1,"XADT")=""
VAR(1,"XRDT")=""
>

> Figure 14-14 GMRA Allergies with Maps

Figure 14-15 shows only the records returned of a IHS VANDF namespace search:

S OUT="VAR",IN="1,1,1 TRICHLOROETHANE^S^32771"
W $$$SEARCH^BSTSAPI(OUT,IN)
2^ >Z @OUT
VAR(1,"CON")="1,1,1 TRICHLOROETHANE"
VAR(1,"DTS")=4779
VAR(1,"FSN","DSC")="T4775"
VAR(1,"FSN","TRM")="1,1,1 TRICHLOROETHANE"
VAR(1,"FSN","XADT")=""
VAR(1,"FSN","XRDT")=""
VAR(1,"PRB","DSC")="T4775"
VAR(1,"PRB","TRM")="1,1,1 TRICHLOROETHANE"
VAR(1,"XADT")=""
VAR(1,"XRDT")=""
>

> Figure 14-15 IHS VANDF Namespace Search
Figure 14-16 shows only the records returned of a IHS Med Route namespace search:

```plaintext
> $ OUT="VAR","IN="ORAL^S^32774"
> W $ SEARCH=\$BSTSAPI(OUT,IN)
2
>ZW @OUT
VAR(1,"ASM",1,"CON")=26643006
VAR(1,"ASM",1,"DTS")=26643
VAR(1,"CON")="ORAL"
VAR(1,"DTS")=23
VAR(1,"FSN","DSC")="T23"
VAR(1,"FSN","TRM")="ORAL"
VAR(1,"FSN","XADT")=""
VAR(1,"FSN","XRDT")=""
VAR(1,"PRB","DSC")="T23"
VAR(1,"PRB","TRM")="ORAL"
VAR(1,"XADT")=""
VAR(1,"XRDT")=""
>
```

Figure 14-16 IHS Med Route Namespace Search

### A.2 \$\$CODESETS\^BSTSAPI

Figure 14-17 displays the results of a standard call to this function and shows how information can be stored in a scratch global:

```plaintext
> $ OUT=$NA("^TMP("BSTSAPI",^$J)"),IN=""
> W $ CODESETS^\$BSTSAPI(OUT)
2
>ZW @OUT
^TMP("BSTSAPI",4496,1)="32768^32768^IHS"
^TMP("BSTSAPI",4496,2)="32771^32771^IHS VANDF"
^TMP("BSTSAPI",4496,3)="32772^32772^GMRA Signs Symptoms"
^TMP("BSTSAPI",4496,4)="32773^32773^GMRA Allergies with Maps"
^TMP("BSTSAPI",4496,5)="32774^32774^IHS Med Route"
^TMP("BSTSAPI",4496,6)="32775^32775^CPT Meds with Maps"
^TMP("BSTSAPI",4496,7)="32777^32777^SNOMED CT to ICD-10-CM Auto-Codeables"
^TMP("BSTSAPI",4496,8)="32778^32778^SNOMED CT to ICD-9-CM Auto-Codeables"
^TMP("BSTSAPI",4496,9)="10^ICD-9-CM-C1^ICD-9-CM"
^TMP("BSTSAPI",4496,10)="5140^ICD10CM^ICD-10-CM"
^TMP("BSTSAPI",4496,11)="5102^LOINC-3^LOINC"
^TMP("BSTSAPI",4496,12)="1552^RXNORM\^RxNorm R"
^TMP("BSTSAPI",4496,13)="35290^SCT-US-MAP_ICD10CM^SNOMED CT US Ext to ICD-10-CM"
^TMP("BSTSAPI",4496,14)="35291^SCT-US-MAP_ICD9CM^SNOMED CT US Ext to ICD-9 CM"
^TMP("BSTSAPI",4496,15)="36^SCTUSEXT^SNOMED CT US Edition"
^TMP("BSTSAPI",4496,16)="5180^UNII^FDA UNII"
>
```

Figure 14-17 Standard Call Results
A.3 $$VERSIONS^BSTSAPI

Figure 14-18 displays a list of versions available for the SNOMED codeset:

```
> $ OUT=$NA(^TMP("BSTSAPI",$J)),IN="36"
> $ $VERSIONS^BSTSAPI(OUT,IN)
>ZW @OUT
^TMP("BSTSAPI",4496,1)="20120301\^2012.03.11AB\^2012-03-01 07:00:00^"
^TMP("BSTSAPI",4496,2)="20120901\^2012.09.12AA\^2012-09-01 06:00:00^"
^TMP("BSTSAPI",4496,3)="20130301\^2013.03.12AB\^2013-03-01 07:00:00^"
^TMP("BSTSAPI",4496,4)="20130901\^2013.09.13AA\^2013-09-01 06:00:00^"
^TMP("BSTSAPI",4496,5)="20140301\^2014.03.13AB\^2014-03-01 07:00:00^"
^TMP("BSTSAPI",4496,6)="20140901\^2014.09.14AA\^2014-09-01 06:00:00^"
```

Figure 14-18 SNOMED Codeset Versions

A.4 $$MPADVICE^BSTSAPI

Figure 14-19 displays ICD-10 mapping information available for a particular concept ID (using a local cache lookup):

```
> $ OUT="VAR",IN=2032001
> $ $MPADVICE^BSTSAPI(OUT,IN)
1
ZW @OUT
VAR(1,"MPADV","VAL")="ALWAYS G93.6"
VAR(1,"MPCVL","VAL")="Map source concept is properly classified"
VAR(1,"MPGRP","VAL")=1
VAR(1,"MPPRI","VAL")=5
VAR(1,"MPRUL","VAL")="OTHERWISE TRUE"
VAR(1,"MPTGN","VAL")="Cerebral edema"
VAR(1,"MPTGT","VAL")="G93.6"
VAR(2,"MPADV","VAL")="IF CEREBRAL EDEMA DUE TO BIRTH INJURY CHOOSE P11.0 | MAP OF SOURCE CONCEPT IS CONTEXT DEPENDENT"
VAR(2,"MPCVL","VAL")="Map of source concept is context dependent"
VAR(2,"MPGRP","VAL")=1
VAR(2,"MPPRI","VAL")=1
VAR(2,"MPRUL","VAL")="IFA 206238001 | Cerebral edema due to birth injury (disorder) |"
VAR(2,"MPTGN","VAL")="Cerebral edema due to birth injury"
VAR(2,"MPTGT","VAL")="P11.0"
VAR(3,"MPADV","VAL")="IF TRAUMATIC CEREBRAL EDEMA WITH OPEN INTRACRANIAL WOUND CHOOSE S01.80X? | EPISODE OF CARE INFORMATION NEEDED | POSSIBLE REQUIREMENT FOR AN EXTERNAL CAUSE CODE | MAP OF SOURCE CONCEPT IS CONTEXT DEPENDENT"
VAR(3,"MPCVL","VAL")="Map of source concept is context dependent"
VAR(3,"MPGRP","VAL")=2
VAR(3,"MPPRI","VAL")=1
VAR(3,"MPRUL","VAL")="IFA 311826007 | Traumatic cerebral edema with open intracranial wound (disorder) |"
VAR(3,"MPTGN","VAL")="Unspecified open wound of other part of head, episode of care unspecified"
VAR(3,"MPTGT","VAL")="S01.80X?"
```
VAR(4,"MPADV","VAL")="IF TRAUMATIC CEREBRAL EDEMA CHOOSE S06.1X0? | CONSIDER ADDITIONAL CODE TO IDENTIFY SPECIFIC CONDITION OR DISEASE | EPISODE OF CARE INFORMATION NEEDED | POSSIBLE REQUIREMENT FOR AN EXTERNAL CAUSE CODE | MAP OF SOURCE CONCEPT IS CONTEXT DEPENDENT"
VAR(4,"MPCVL","VAL")="Map of source concept is context dependent"
VAR(4,"MPGRP","VAL")=1
VAR(4,"MPPRI","VAL")=4
VAR(4,"MFRUL","VAL")="IFA 230763008 | Traumatic cerebral edema (disorder) |
"  
VAR(4,"MPTGN","VAL")="Traumatic cerebral edema without loss of consciousness, episode of care unspecified"
VAR(4,"MPTGT","VAL")="S06.1X0?"
VAR(5,"MPADV","VAL")="IF TRAUMATIC CEREBRAL EDEMA WITH OPEN INTRACRANIAL WOUND CHOOSE S06.1X0? | EPISODE OF CARE INFORMATION NEEDED | POSSIBLE REQUIREMENT FOR AN EXTERNAL CAUSE CODE | MAP OF SOURCE CONCEPT IS CONTEXT DEPENDENT"
VAR(5,"MPCVL","VAL")="Map of source concept is context dependent"
VAR(5,"MPGRP","VAL")=1
VAR(5,"MPPRI","VAL")=3
VAR(5,"MFRUL","VAL")="IFA 311826007 | Traumatic cerebral edema with open intracranial wound (disorder) |
"  
VAR(5,"MPTGN","VAL")="Traumatic cerebral edema without loss of consciousness, episode of care unspecified"
VAR(5,"MPTGT","VAL")="S06.1X0?"
VAR(6,"MPADV","VAL")="IF TRAUMATIC CEREBRAL EDEMA WITHOUT OPEN INTRACRANIAL WOUND CHOOSE S06.1X0? | EPISODE OF CARE INFORMATION NEEDED | POSSIBLE REQUIREMENT FOR AN EXTERNAL CAUSE CODE | MAP OF SOURCE CONCEPT IS CONTEXT DEPENDENT"
VAR(6,"MPCVL","VAL")="Map of source concept is context dependent"
VAR(6,"MPGRP","VAL")=1
VAR(6,"MPPRI","VAL")=2
VAR(6,"MFRUL","VAL")="IFA 311825006 | Traumatic cerebral edema without open intracranial wound (disorder) |
"  
VAR(6,"MPTGN","VAL")="Traumatic cerebral edema without loss of consciousness, episode of care unspecified"
VAR(6,"MPTGT","VAL")="S06.1X0?"
VAR(7,"MPADV","VAL")="MAP SOURCE CONCEPT CANNOT BE CLASSIFIED WITH AVAILABLE DATA"
VAR(7,"MPCVL","VAL")="Map source concept cannot be classified with available data"
VAR(7,"MPGRP","VAL")=2
VAR(7,"MPPRI","VAL")=2
VAR(7,"MFRUL","VAL")="OTHERWISE TRUE"
VAR(7,"MPTGN","VAL")=""  
VAR(7,"MPTGT","VAL")=""
>

Figure 14-19 ICD-10 Mapping Information

A.5 $$CVRSN^BSTSAPI

Figure 14-20 returns the current version for the for the SNOMED codeset:

```bash
>$$ OUT="VAR",IN="36"
>
>$$ CVRSN^BSTSAPI(OUT,IN)
>2^n
>ZW @OUT
```
A.6 $$\text{SUBSET}^\text{BSTSAPI}

Figure 14-21 displays a list of subsets available for the SNOMED CT US Extensions codeset (using a local cache lookup):

> S OUT=$\text{NA}('\text{TMP}('\text{BSTSAPI}',$J)'\), IN="36"

> W $$\text{SUBSET}^\text{BSTSAPI}(\text{OUT, IN})

> ZN \text{OUT}

^\text{TMP}('\text{BSTSAPI}',4496,1)="EHR IPL ASTHMA DXS"
^\text{TMP}('\text{BSTSAPI}',4496,2)="EHR IPL ASTHMA TX REGIMEN"
^\text{TMP}('\text{BSTSAPI}',4496,3)="EHR IPL CLINICAL COURSE"
^\text{TMP}('\text{BSTSAPI}',4496,4)="EHR IPL PICK ASTHMA"
^\text{TMP}('\text{BSTSAPI}',4496,5)="EHR IPL POV EPISODICITIES"
^\text{TMP}('\text{BSTSAPI}',4496,6)="EHR IPL PROBLEM QUALIFIERS"
^\text{TMP}('\text{BSTSAPI}',4496,7)="EHR IPL SEVERITY"
^\text{TMP}('\text{BSTSAPI}',4496,8)="EHR REASONS NOT DONE"
^\text{TMP}('\text{BSTSAPI}',4496,9)="EHR REASONS NOT DONE MEDS"
^\text{TMP}('\text{BSTSAPI}',4496,10)="EHR REASONS NOT DONE OTHERS"
^\text{TMP}('\text{BSTSAPI}',4496,11)="EHR REFERRAL TYPE"
^\text{TMP}('\text{BSTSAPI}',4496,12)="EHR SUICIDE RELATED"
^\text{TMP}('\text{BSTSAPI}',4496,13)="EHR V AMI CHEST PAIN"
^\text{TMP}('\text{BSTSAPI}',4496,14)="EHR V AMI EKG FINDINGS"
^\text{TMP}('\text{BSTSAPI}',4496,15)="EHR V STROKE NEURO SYMPTOMS"
^\text{TMP}('\text{BSTSAPI}',4496,16)="IHS PROBLEM ALL SNOMED"
^\text{TMP}('\text{BSTSAPI}',4496,17)="IHS PROBLEM SUPERSET"
^\text{TMP}('\text{BSTSAPI}',4496,18)="IHS Problem List"
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IHS Standard Terminology Application Programming Interface (BSTS) Version 1.0 Patch 4

Addendum to the Technical Manual Accessibility Checklist
September 2015

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Figure 14-21 SNOMED CT Available Subsets

Figure 14-22 displays a list of subsets available for the SNOMED CT US Extensions codeset (using a remote DTS lookup):

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<td>SRCH Nursing</td>
</tr>
<tr>
<td>Nursing - Ambulatory</td>
<td>SRCH Nursing - Ambulatory</td>
</tr>
<tr>
<td>Nursing - ED/UC</td>
<td>SRCH Nursing - ED/UC</td>
</tr>
<tr>
<td>Nursing - Inpatient</td>
<td>SRCH Nursing - Inpatient</td>
</tr>
<tr>
<td>Nursing - Public Health</td>
<td>SRCH Nursing - Public Health</td>
</tr>
<tr>
<td>Nutrition</td>
<td>SRCH Nutrition</td>
</tr>
<tr>
<td>Pain Management</td>
<td>SRCH Pain Management</td>
</tr>
</tbody>
</table>
A.7 $$VALTERM^BSTSAPI

Figure 14-23 will return whether a supplied term is valid in a given code set and version (using a local cache lookup):

```plaintext
>$ OUT="VAR",IN="COMMON COLD"

>W $$VALTERM^BSTSAPI(OUT,IN)
1
>ZW @OUT
VAR(1,"CON")=82272006
VAR(1,"DTS")=82272
VAR(1,"FSN","DSC")=823660015
VAR(1,"FSN","TRM")="Common cold (disorder)"
VAR(1,"FSN","XADT")=3120301.07
VAR(1,"FSN","XRDT")=""
VAR(1,"IC9",1,"COD")="460."
VAR(1,"IC9",1,"TYP")="IC9"
VAR(1,"IC9",1,"XADT")=""
VAR(1,"IC9",1,"XRDT")=""
VAR(1,"ICD",1,"COD")="700."
VAR(1,"ICD",1,"TYP")="10D"
VAR(1,"ICD",1,"XADT")=3150424
VAR(1,"ICD",1,"XRDT")=3491201.19
```
VAR(1,"ISA",1,"CON")=281794004
VAR(1,"ISA",1,"DTS")=281794
VAR(1,"ISA",1,"TRM")="Viral upper respiratory tract infection (disorder)"
VAR(1,"ISA",1,"XADT")=""
VAR(1,"ISA",1,"XRDT")=""
VAR(1,"PRB","DSC")=136463019
VAR(1,"PRB","TRM")="Common cold"
VAR(1,"PRE","DSC")=136463019
VAR(1,"PRE","TRM")="Common cold"
VAR(1,"PRE","XADT")=3120301.07
VAR(1,"PRE","XRDT")=""
VAR(1,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(1,"SUB",1,"XADT")=""
VAR(1,"SUB",1,"XRDT")=""
VAR(1,"SUB",2,"SUB")="PICK Complimentary Medicine"
VAR(1,"SUB",2,"XADT")=""
VAR(1,"SUB",2,"XRDT")=""
VAR(1,"SUB",3,"SUB")="PICK ENT - Fractures"
VAR(1,"SUB",3,"XADT")=""
VAR(1,"SUB",3,"XRDT")=""
VAR(1,"SUB",4,"SUB")="PICK ENT - Nose and Sinus"
VAR(1,"SUB",4,"XADT")=""
VAR(1,"SUB",4,"XRDT")=""
VAR(1,"SUB",5,"SUB")="PICK Family Practice"
VAR(1,"SUB",5,"XADT")=""
VAR(1,"SUB",5,"XRDT")=""
VAR(1,"SUB",6,"SUB")="PICK Family Practice Long"
VAR(1,"SUB",6,"XADT")=""
VAR(1,"SUB",6,"XRDT")=""
VAR(1,"SUB",7,"SUB")="PICK Medicine - Inpatient"
VAR(1,"SUB",7,"XADT")=""
VAR(1,"SUB",7,"XRDT")=""
VAR(1,"SUB",8,"SUB")="SRCH Asthma"
VAR(1,"SUB",8,"XADT")=""
VAR(1,"SUB",8,"XRDT")=""
VAR(1,"SUB",9,"SUB")="SRCH Audiology"
VAR(1,"SUB",9,"XADT")=""
VAR(1,"SUB",9,"XRDT")=""
VAR(1,"SUB",10,"SUB")="SRCH Complimentary Medicine"
VAR(1,"SUB",10,"XADT")=""
VAR(1,"SUB",10,"XRDT")=""
VAR(1,"SUB",11,"SUB")="SRCH Emergency Department"
VAR(1,"SUB",11,"XADT")=""
VAR(1,"SUB",11,"XRDT")=""
VAR(1,"SUB",12,"SUB")="SRCH ENT"
VAR(1,"SUB",12,"XADT")=""
VAR(1,"SUB",12,"XRDT")=""
VAR(1,"SUB",13,"SUB")="SRCH Family Practice"
VAR(1,"SUB",13,"XADT")=""
VAR(1,"SUB",13,"XRDT")=""
VAR(1,"SUB",14,"SUB")="SRCH Medicine - Inpatient"
VAR(1,"SUB",14,"XADT")=""
VAR(1,"SUB",14,"XRDT")=""
VAR(1,"SUB",15,"SUB")="SRCH Medicine - Urgent Care"
VAR(1,"SUB",15,"XADT")=""
VAR(1,"SUB",15,"XRDT")=""
VAR(1,"SUB",16,"SUB")="SRCH Problem List - Medical"
VAR(1,"SUB",16,"XADT")=""
VAR(1,"SUB",16,"XRDT")=""
VAR(1,"SUB",17,"SUB")="SRCH Respiratory"
VAR(1,"SUB",17,"XADT")=""
VAR(1,"SUB",17,"XRDT")=""
VAR(1,"SUB",18,"SUB")="SRCH Pediatrics"
VAR(1,"SUB",18,"XADT")=""
VAR(1,"SUB",19,"XRDT")=""
VAR(1,"SUB",19,"XADT")=""
VAR(1,"SUB",19,"XRDT")=""
VAR(1,"SYN",1,"DSC")=504996015
VAR(1,"SYN",1,"TRM")="Cold"
VAR(1,"SYN",1,"XADT")=3120301.07
VAR(1,"SYN",1,"XRDT")=""
VAR(1,"SYN",2,"DSC")=504995016
VAR(1,"SYN",2,"TRM")="Acute infective rhinitis"
VAR(1,"SYN",2,"XADT")=3120301.07
VAR(1,"SYN",2,"XRDT")=""
VAR(1,"SYN",3,"DSC")=200997013
VAR(1,"SYN",3,"TRM")="Head cold"
VAR(1,"SYN",3,"XADT")=3120301.07
VAR(1,"SYN",3,"XRDT")=""
VAR(1,"SYN",4,"DSC")=136471015
VAR(1,"SYN",4,"TRM")="Infective nasopharyngitis"
VAR(1,"SYN",4,"XADT")=3120301.07
VAR(1,"SYN",4,"XRDT")=""
VAR(1,"SYN",5,"DSC")=136470019
VAR(1,"SYN",5,"TRM")="Acute nasopharyngitis"
VAR(1,"SYN",5,"XADT")=3120301.07
VAR(1,"SYN",5,"XRDT")=""
VAR(1,"SYN",6,"DSC")=136469015
VAR(1,"SYN",6,"TRM")="Infective rhinitis"
VAR(1,"SYN",6,"XADT")=3120301.07
VAR(1,"SYN",6,"XRDT")=""
VAR(1,"SYN",7,"DSC")=136468011
VAR(1,"SYN",7,"TRM")="Acute rhinitis"
VAR(1,"SYN",7,"XADT")=3120301.07
VAR(1,"SYN",7,"XRDT")=""
VAR(1,"SYN",8,"DSC")=136467018
VAR(1,"SYN",8,"TRM")="Infective nasopharyngitis, NOS"
VAR(1,"SYN",8,"XADT")=3120301.07
VAR(1,"SYN",8,"XRDT")=""
VAR(1,"SYN",9,"DSC")=136466010
VAR(1,"SYN",9,"TRM")="Acute nasal catarrh"
VAR(1,"SYN",9,"XADT")=3120301.07
VAR(1,"SYN",9,"XRDT")=""
VAR(1,"SYN",10,"DSC")=136465014
VAR(1,"SYN",10,"TRM")="Acute coryza"
VAR(1,"SYN",10,"XADT")=3120301.07
VAR(1,"SYN",10,"XRDT")=""
VAR(1,"SYN",11,"DSC")=136464013
VAR(1,"SYN",11,"TRM")="Acute nasopharyngitis, NOS"
VAR(1,"SYN",11,"XADT")=3120301.07
VAR(1,"SYN",11,"XRDT")=""
VAR(1,"XADT")=3120301
VAR(1,"XRDT")=3500101

> Figure 14-23 Supplied Terms Validation
The following example will return whether a supplied term is a valid in a given code set and version (using a remote DTS server lookup):

```
>S OUT="VAR",IN="COMMON COLD^^^2"
>W $SVALTERM^BSTSAPI (OUT, IN)
>2^ 
>ZW @OUT
VAR(1,"CON")=82272006
VAR(1,"DTS")=82272
VAR(1,"FSN","DSC")=823660015
VAR(1,"FSN","TRM")="Common cold (disorder)"
VAR(1,"FSN","XADT")=3120301.07
VAR(1,"FSN","XRD")=""
VAR(1,"IC9",1,"COD")="460."
VAR(1,"IC9",1,"XADT")="IC9"
VAR(1,"IC9",2,"XADT")=""
VAR(1,"IC9",3,"XRD")=""
VAR(1,"ICD",1,"COD")="700."
VAR(1,"ICD",1,"XADT")="ICD"
VAR(1,"ICD",1,"XRD")=3150424
VAR(1,"ICD",1,"XRDT")=3491201.19
VAR(1,"ISA",1,"CON")=281794004
VAR(1,"ISA",1,"DTS")=281794
VAR(1,"ISA",1,"TRM")="Viral upper respiratory tract infection (disorder)"
VAR(1,"ISA",1,"XADT")=""
VAR(1,"ISA",1,"XRDT")=""
VAR(1,"PRE",1,"DSC")=136463019
VAR(1,"PRE",1,"TRM")="Common cold"
VAR(1,"PRE",1,"XADT")=3120301.07
VAR(1,"PRE",1,"XRDT")=""
VAR(1,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(1,"SUB",1,"XADT")=""
VAR(1,"SUB",1,"XRDT")=""
VAR(1,"SUB",2,"SUB")="PICK Complimentary Medicine"
VAR(1,"SUB",2,"XADT")=""
VAR(1,"SUB",2,"XRDT")=""
VAR(1,"SUB",3,"SUB")="PICK ENT - Fractures"
VAR(1,"SUB",3,"XADT")=""
VAR(1,"SUB",3,"XRDT")=""
VAR(1,"SUB",4,"SUB")="PICK ENT - Nose and Sinus"
VAR(1,"SUB",4,"XADT")=""
VAR(1,"SUB",4,"XRDT")=""
VAR(1,"SUB",5,"SUB")="PICK Family Practice"
VAR(1,"SUB",5,"XADT")=""
VAR(1,"SUB",5,"XRDT")=""
VAR(1,"SUB",6,"SUB")="PICK Family Practice Long"
VAR(1,"SUB",6,"XADT")=""
VAR(1,"SUB",6,"XRDT")=""
VAR(1,"SUB",7,"SUB")="PICK Medicine - Inpatient"
VAR(1,"SUB",7,"XADT")=""
VAR(1,"SUB",7,"XRDT")=""
VAR(1,"SUB",8,"SUB")="SRCH Asthma"
VAR(1,"SUB",8,"XADT")=""
VAR(1,"SUB",8,"XRDT")=""
VAR(1,"SUB",9,"SUB")="SRCH Audiology"
VAR(1,"SUB",9,"XADT")=""
VAR(1,"SUB",9,"XRDT")=""
VAR(1,"SUB",10,"SUB")="SRCH Complimentary Medicine"
```
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<th>Variable</th>
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<th>XADT</th>
<th>XRDT</th>
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<td></td>
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<td>VAR(1,&quot;SUB&quot;,11,&quot;SUB&quot;)</td>
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</tr>
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<td></td>
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</tr>
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<td>VAR(1,&quot;SYN&quot;,7,&quot;XADT&quot;)</td>
<td>=3120301.07</td>
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VAR(1,"SYN",9,"DSC")=136466010
VAR(1,"SYN",9,"TRM")="Acute nasal catarrh"
VAR(1,"SYN",9,"XADT")=3120301.07
VAR(1,"SYN",9,"XRDT")=""
VAR(1,"SYN",10,"DSC")=136465014
VAR(1,"SYN",10,"TRM")="Acute coryza"
VAR(1,"SYN",10,"XADT")=3120301.07
VAR(1,"SYN",10,"XRDT")=""
VAR(1,"SYN",11,"DSC")=136464013
VAR(1,"SYN",11,"TRM")="Acute nasopharyngitis, NOS"
VAR(1,"SYN",11,"XADT")=3120301.07
VAR(1,"SYN",11,"XRDT")=""
VAR(1,"XADT")=3120301
VAR(1,"XRDT")=3500101

Figure 14-24 Supplied Terms Validation for Codeset/Version

The following example will return whether the given term is a valid entry in the “GMRA Signs Symptoms” namespace (using a local cache lookup):

> S OUT="VAR",IN="ABDOMINAL BLOATING^32772"
> W "$VALTERM^BSTSAPI(OUT,IN)"
> ZW @OUT
VAR(1,"ASN",1,"CON")=116289008
VAR(1,"ASN",1,"DTS")=116289
VAR(1,"CON")="ABDOMINAL BLOATING"
VAR(1,"DTS")=603
VAR(1,"FSN","DSC")="T33"
VAR(1,"FSN","TRM")="ABDOMINAL BLOATING"
VAR(1,"FSN","XADT")=""
VAR(1,"FSN","XRDT")=""
VAR(1,"PRB","DSC")="T33"
VAR(1,"PRB","TRM")="ABDOMINAL BLOATING"
VAR(1,"XADT")=""
VAR(1,"XRDT")=""

Figure 14-25 Supplied Terms Validation for GMRA Signs Symptoms

A.8 $VALSBTRM^BSTSAPI

The following example will return whether a supplied term is in a particular subset (using a local cache lookup). The result is returned in a variable:

> S OUT="VAR",IN="93565019^IHS Problem List"
> W "$VALSBTRM^BSTSAPI(OUT,IN)"
> ZW @OUT
VAR=1

>
A.9 **$$VALSBTRMF^BSTSAPI**

The following example will return whether a supplied term is in a particular subset (using a local cache lookup). The result is returned as the returned value of the function call:

```plaintext
>S OUT="VAR",IN="93565019^IHS Problem List"
>W $$VALSBTRMF^BSTSAPI(IN)
1
```

Figure 14-27  Supplied Terms Validation in Subset – function call

A.10 **$$CNCLKP^BSTSAPI**

The following example retrieves the detail for a concept when the Concept ID is provided (using a local cache listing):

```plaintext
>S OUT="VAR",IN="2032001"
>W $$CNCLKP^BSTSAPI(OUT,IN)
1
>ZW @OUT
VAR(1,"CHD",1,"CON")=230760006
VAR(1,"CHD",1,"DTS")=230760
VAR(1,"CHD",1,"TRM")="Cytotoxic cerebral edema (disorder)"
VAR(1,"CHD",1,"XADT")=""
VAR(1,"CHD",1,"XRDT")=""
VAR(1,"CHD",2,"CON")=230762003
VAR(1,"CHD",2,"DTS")=230762
VAR(1,"CHD",2,"TRM")="High altitude cerebral edema (disorder)"
VAR(1,"CHD",2,"XADT")=""
VAR(1,"CHD",2,"XRDT")=""
VAR(1,"CHD",3,"CON")=230761005
VAR(1,"CHD",3,"DTS")=230761
VAR(1,"CHD",3,"TRM")="Periventricular cerebrospinal fluid edema (disorder)"
VAR(1,"CHD",3,"XADT")=""
VAR(1,"CHD",3,"XRDT")=""
VAR(1,"CHD",4,"CON")=230763008
VAR(1,"CHD",4,"DTS")=230763
VAR(1,"CHD",4,"TRM")="Traumatic cerebral edema (disorder)"
VAR(1,"CHD",4,"XADT")=""
VAR(1,"CHD",4,"XRDT")=""
VAR(1,"CHD",5,"CON")=230759001
VAR(1,"CHD",5,"DTS")=230759
VAR(1,"CHD",5,"TRM")="Vasogenic cerebral edema (disorder)"
VAR(1,"CHD",5,"XADT")=""
VAR(1,"CHD",5,"XRDT")=""
VAR(1,"CON")=2032001
VAR(1,"DTS")=2032
VAR(1,"FSN","DSC")=749395013
VAR(1,"FSN","TRM")="Cerebral edema (disorder)"
VAR(1,"FSN","XADT")=3120301.07
VAR(1,"FSN","XRDT")=""
```

Figure 14-26 Supplied Terms Validation in Subset
 VAR(1,"IC9",1,"COD")=348.5
 VAR(1,"IC9",1,"TYP")="IC9"
 VAR(1,"IC9",1,"XADT")="" 
 VAR(1,"IC9",1,"XRDT")="" 
 VAR(1,"ICD",1,"COD")="ZZZ.999"
 VAR(1,"ICD",1,"TYP")="10D"
 VAR(1,"ISA",1,"CON")=11865409 
 VAR(1,"ISA",1,"DTS")=118654
 VAR(1,"ISA",1,"TRM")="Disorder characterized by edema (disorder)"
 VAR(1,"ISA",1,"XADT")="" 
 VAR(1,"ISA",1,"XRDT")="" 
 VAR(1,"ISA",2,"CON")=81308009 
 VAR(1,"ISA",2,"DTS")=81308 
 VAR(1,"ISA",2,"TRM")="Disorder of brain (disorder)"
 VAR(1,"ISA",2,"XADT")="" 
 VAR(1,"ISA",2,"XRDT")="" 
 VAR(1,"PRB","DSC")=4508017 
 VAR(1,"PRB","TRM")="Cerebral edema"
 VAR(1,"PRE","DSC")=4508017 
 VAR(1,"PRE","TRM")="Cerebral edema"
 VAR(1,"PRE","XADT")=3120301.07
 VAR(1,"PRE","XRDT")="" 
 VAR(1,"SUB",1,"SUB")="IHS PROBLEM SUPerset"
 VAR(1,"SUB",1,"XADT")="" 
 VAR(1,"SUB",1,"XRDT")="" 
 VAR(1,"SUB",2,"SUB")="PICK Neurology Long" 
 VAR(1,"SUB",2,"XADT")="" 
 VAR(1,"SUB",2,"XRDT")="" 
 VAR(1,"SUB",3,"SUB")="SRCH Emergency Department"
 VAR(1,"SUB",3,"XADT")="" 
 VAR(1,"SUB",3,"XRDT")="" 
 VAR(1,"SUB",4,"SUB")="SRCH Family Practice"
 VAR(1,"SUB",4,"XADT")="" 
 VAR(1,"SUB",4,"XRDT")="" 
 VAR(1,"SUB",5,"SUB")="SRCH Medicine - Inpatient"
 VAR(1,"SUB",5,"XADT")="" 
 VAR(1,"SUB",5,"XRDT")="" 
 VAR(1,"SUB",6,"SUB")="SRCH Medicine - Urgent Care"
 VAR(1,"SUB",6,"XADT")="" 
 VAR(1,"SUB",6,"XRDT")="" 
 VAR(1,"SUB",7,"SUB")="SRCH Neurology"
 VAR(1,"SUB",7,"XADT")="" 
 VAR(1,"SUB",7,"XRDT")="" 
 VAR(1,"SUB",8,"SUB")="SRCH Problem List - Medical"
 VAR(1,"SUB",8,"XADT")="" 
 VAR(1,"SUB",8,"XRDT")="" 
 VAR(1,"SUB",9,"SUB")="IHS Problem List"
 VAR(1,"SUB",9,"XADT")="" 
 VAR(1,"SUB",9,"XRDT")="" 
 VAR(1,"SYN",1,"DSC")=480612016
 VAR(1,"SYN",1,"TRM")="Cerebral oedema"
 VAR(1,"SYN",1,"XADT")=3120301.07
 VAR(1,"SYN",1,"XRDT")="" 
 VAR(1,"SYN",2,"DSC")=4509013 
 VAR(1,"SYN",2,"TRM")="Intracranial swelling"
 VAR(1,"SYN",2,"XADT")=3120301.07 
 VAR(1,"SYN",2,"XRDT")="" 
 VAR(1,"XADT")=3120301 
 VAR(1,"XRDT")=3500101
The following example retrieves the detail for a concept when the Concept ID is provided (using a remote DTS listing):

```
> S OUT="VAR", IN="2032001^^^2"
> W $CNCLKP^BSTSAPI(OUT, IN)
2
>ZW @OUT
VAR(1,"CHD",1,"CON")=230760006
VAR(1,"CHD",1,"DTS")=230760
VAR(1,"CHD",1,"TRM")="Cytotoxic cerebral edema (disorder)"
VAR(1,"CHD",1,"XADT")=""
VAR(1,"CHD",1,"XRDT")=""
VAR(1,"CHD",2,"CON")=230762003
VAR(1,"CHD",2,"DTS")=230762
VAR(1,"CHD",2,"TRM")="High altitude cerebral edema (disorder)"
VAR(1,"CHD",2,"XADT")=""
VAR(1,"CHD",2,"XRDT")=""
VAR(1,"CHD",3,"CON")=230761005
VAR(1,"CHD",3,"DTS")=230761
VAR(1,"CHD",3,"TRM")="Periventricular cerebrospinal fluid edema (disorder)"
VAR(1,"CHD",3,"XADT")=""
VAR(1,"CHD",3,"XRDT")=""
VAR(1,"CHD",4,"CON")=230763008
VAR(1,"CHD",4,"DTS")=230763
VAR(1,"CHD",4,"TRM")="Traumatic cerebral edema (disorder)"
VAR(1,"CHD",4,"XADT")=""
VAR(1,"CHD",4,"XRDT")=""
VAR(1,"CHD",5,"CON")=230759001
VAR(1,"CHD",5,"DTS")=230759
VAR(1,"CHD",5,"TRM")="Vasogenic cerebral edema (disorder)"
VAR(1,"CHD",5,"XADT")=""
VAR(1,"CHD",5,"XRDT")=""
VAR(1,"CON")=2032001
VAR(1,"DTS")=2032
VAR(1,"FSN","DSC")=749395013
VAR(1,"FSN","TRM")="Cerebral edema (disorder)"
VAR(1,"FSN","XADT")=3120301.07
VAR(1,"IC9",1,"COD")=348.5
VAR(1,"IC9",1,"TYP")="IC9"
VAR(1,"IC9",1,"XADT")=""
VAR(1,"IC9",1,"XRDT")=""
VAR(1,"ICD",1,"COD")="ZZZ.999"
VAR(1,"ICD",1,"TYP")="10D"
VAR(1,"ISA",1,"CON")=118654009
VAR(1,"ISA",1,"DTS")=118654
VAR(1,"ISA",1,"TRM")="Disorder characterized by edema (disorder)"
VAR(1,"ISA",1,"XADT")=""
VAR(1,"ISA",1,"XRDT")=""
VAR(1,"ISA",2,"CON")=81308009
VAR(1,"ISA",2,"DTS")=81308
VAR(1,"ISA",2,"TRM")="Disorder of brain (disorder)"
VAR(1,"ISA",2,"XADT")=""
VAR(1,"ISA",2,"XRDT")=""
VAR(1,"PRB","DSC")=4508017
VAR(1,"PRB","TRM")="Cerebral edema"
VAR(1,"PRE","DSC")=4508017
VAR(1,"PRE","TRM")="Cerebral edema"
```
Figure 14-29 Concept ID Detail Using Remote DTS Listing

The following example retrieves the detail for a concept when the Concept ID is provided (RxNorm Codeset) (using a local cache listing):

```
>S OUT="VAR",IN="851732^1552"

>W §§CNCLKP^BSTSAPI(OUT,IN)

1

>ZW @OUT

VAR(1,"CON")=851732
VAR(1,"DTS")=11328554
VAR(1,"FSN","DSC")=2973307
VAR(1,"FSN","TRM")="Acacia pollen extract"
VAR(1,"FSN","XADT")=""
VAR(1,"FSN","XRDT")=""
VAR(1,"FRB","DSC")=2973307
VAR(1,"FRB","TRM")="Acacia pollen extract"
VAR(1,"FRB","XADT")=""
VAR(1,"FRB","XRDT")=""
```
The following example retrieves the detail for a concept when the DTS ID is provided:

```
> $S OUT="VAR", IN="8801"
>W $$DTSLKP^BSTSAPI(OUT, IN)
2^>
ZW @OUT
VAR(1,"CHD",1,"CON")=426705001
VAR(1,"CHD",1,"DTS")=426705
VAR(1,"CHD",1,"TRM")="Diabetes mellitus associated with cystic fibrosis (disorder)"
VAR(1,"CHD",1,"XADT")=""
VAR(1,"CHD",1,"XRDT")=""
VAR(1,"CHD",2,"CON")=5969009
VAR(1,"CHD",2,"DTS")=5969
VAR(1,"CHD",2,"TRM")="Diabetes mellitus associated with genetic syndrome (disorder)"
VAR(1,"CHD",2,"XADT")=""
VAR(1,"CHD",2,"XRDT")=""
VAR(1,"CHD",3,"CON")=59079001
VAR(1,"CHD",3,"DTS")=59079
VAR(1,"CHD",3,"TRM")="Diabetes mellitus associated with hormonal etiology (disorder)"
VAR(1,"CHD",3,"XADT")=""
VAR(1,"CHD",3,"XRDT")=""
VAR(1,"CHD",4,"CON")=51002006
VAR(1,"CHD",4,"DTS")=51002
VAR(1,"CHD",4,"TRM")="Diabetes mellitus associated with pancreatic disease (disorder)"
VAR(1,"CHD",4,"XADT")=""
VAR(1,"CHD",4,"XRDT")=""
VAR(1,"CHD",5,"CON")=42954008
VAR(1,"CHD",5,"DTS")=42954
VAR(1,"CHD",5,"TRM")="Diabetes mellitus associated with receptor abnormality (disorder)"
VAR(1,"CHD",5,"XADT")=""
VAR(1,"CHD",5,"XRDT")=""
VAR(1,"CHD",6,"CON")=75682002
VAR(1,"CHD",6,"DTS")=75682
VAR(1,"CHD",6,"TRM")="Diabetes mellitus due to insulin receptor antibodies (disorder)"
VAR(1,"CHD",6,"XADT")=""
```

Figure 14-30 Concept ID Detail Using Local Cache Listing
VAR(1,"CHD",6,"XRDT")=""
VAR(1,"CHD",7,"CON")=276560009
VAR(1,"CHD",7,"DTS")=276560
VAR(1,"CHD",7,"TRM")="Diabetes mellitus in neonate small for gestational age (disorder)"
VAR(1,"CHD",7,"XADT")=""
VAR(1,"CHD",8,"CON")=5368009
VAR(1,"CHD",8,"DTS")=5368
VAR(1,"CHD",8,"TRM")="Drug-induced diabetes mellitus (disorder)"
VAR(1,"CHD",8,"XADT")=""
VAR(1,"CHD",9,"CON")=408539000
VAR(1,"CHD",9,"DTS")=408539
VAR(1,"CHD",9,"TRM")="Insulin autoimmune syndrome (disorder)"
VAR(1,"CHD",9,"XADT")=""
VAR(1,"CHD",10,"CON")=75524006
VAR(1,"CHD",10,"DTS")=75524
VAR(1,"CHD",10,"TRM")="Malnutrition related diabetes mellitus (disorder)"
VAR(1,"CHD",10,"XADT")=""
VAR(1,"CHD",11,"CON")=445260006
VAR(1,"CHD",11,"DTS")=445260
VAR(1,"CHD",11,"TRM")="Posttransplant diabetes mellitus (disorder)"
VAR(1,"CHD",11,"XADT")=""
VAR(1,"CHD",11,"XRDT")=""
VAR(1,"CHD",12,"CON")=237601000
VAR(1,"CHD",12,"DTS")=237601
VAR(1,"CHD",12,"TRM")="Secondary endocrine diabetes mellitus (disorder)"
VAR(1,"CHD",12,"XADT")=""
VAR(1,"CHD",12,"XRDT")=""
VAR(1,"CON")=8801005
VAR(1,"DTS")=8801
VAR(1,"FSN","DSC")=830605015
VAR(1,"FSN","TRM")="Secondary diabetes mellitus (disorder)"
VAR(1,"FSN","XADT")=3120301.07
VAR(1,"FSN","XRDT")=""
VAR(1,"IC9",1,"COD")="250.80"
VAR(1,"IC9",1,"TYP")="IC9"
VAR(1,"IC9",1,"XADT")=""
VAR(1,"IC9",1,"XRDT")=""
VAR(1,"ICD",1,"COD")="E13.9"
VAR(1,"ICD",1,"DTS")=3150510
VAR(1,"ICD",1,"XRDT")=3491201.19
VAR(1,"ISA",1,"CON")=73211009
VAR(1,"ISA",1,"DTS")=73211
VAR(1,"ISA",1,"TRM")="Diabetes mellitus (disorder)"
VAR(1,"ISA",1,"XADT")=""
VAR(1,"ISA",1,"XRDT")=""
VAR(1,"PRB","DSC")=15518018
VAR(1,"PRB","TRM")="Secondary diabetes mellitus"
VAR(1,"PRE","DSC")=15518018
VAR(1,"PRE","TRM")="Secondary diabetes mellitus"
VAR(1,"PRE","XADT")=3120301.07
VAR(1,"PRE","XRDT")=""
VAR(1,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(1,"SUB",1,"XADT")=""
VAR(1,"SUB",1,"XRDT")=""
VAR(1,"SUB",2,"SUB")="PICK Urology/Nephrology Long"
VAR(1,"SUB",2,"XADT")=""
VAR(1,"SUB",2,"XRDT")=""
VAR(1,"SUB",3,"SUB")="SRCH Diabetes"
VAR(1,"SUB",3,"XADT")=""
VAR(1,"SUB",3,"XRDT")=""
VAR(1,"SUB",4,"SUB")="SRCH Neurology"
VAR(1,"SUB",4,"XADT")=""
VAR(1,"SUB",4,"XRDT")=""
VAR(1,"SUB",5,"SUB")="SRCH Pediatrics"
VAR(1,"SUB",5,"XADT")=""
VAR(1,"SUB",5,"XRDT")=""
VAR(1,"SUB",6,"SUB")="IHS Problem List"
VAR(1,"SUB",6,"XADT")=""
VAR(1,"SUB",6,"XRDT")=""
VAR(1,"SUB",7,"SUB")="PXRM DIABETES"
VAR(1,"SUB",7,"XADT")=""
VAR(1,"SUB",7,"XRDT")=""
VAR(1,"SYN",1,"DSC")=1109081000119118
VAR(1,"SYN",1,"TRM")="Secondary diabetes"
VAR(1,"SYN",1,"XADT")=3140301.07
VAR(1,"SYN",1,"XRDT")=""
VAR(1,"SYN",2,"DSC")=1109071000119116
VAR(1,"SYN",2,"TRM")="Secondary dm"
VAR(1,"SYN",2,"XADT")=3140301.07
VAR(1,"SYN",2,"XRDT")=""
VAR(1,"SYN",3,"DSC")=15519014
VAR(1,"SYN",3,"TRM")="Secondary diabetes mellitus, NOS"
VAR(1,"SYN",3,"XADT")=3120301.07
VAR(1,"SYN",3,"XRDT")=""
VAR(1,"XADT")=3120301
VAR(1,"XRDT")=3500101

Figure 14-31 DTS ID Detail

A.12 $$DSCLKP^BSTSAPI$$

The following example retrieves the detail for the associated concept when the Description ID for a term is provided (using a local cache lookup):

>$$DSCLKP^BSTSAPI$$

$$DSCLKP^BSTSAPI$$

1
>ZW @OUT
VAR(1,"CHD",1,"CON")=426705001
VAR(1,"CHD",1,"DTS")=426705
VAR(1,"CHD",1,"TRM")="Diabetes mellitus associated with cystic fibrosis (disorder)"
VAR(1,"CHD",1,"XADT")=""
VAR(1,"CHD",1,"XRDT")=""
VAR(1,"CHD",2,"CON")=5969009
VAR(1,"CHD",2,"DTS")=5969
VAR(1,"CHD",2,"TRM")="Diabetes mellitus associated with genetic syndrome (disorder)"
VAR(1,"CHD",2,"XADT")=""
VAR(1,"CHD",2,"XRDT")=""
VAR(1,"CHD",3,"CON")=59079001
VAR(1,"CHD",3,"DTS")=59079
VAR(1,"CHD",3,"TRM")="Diabetes mellitus associated with hormonal etiology (disorder)"
VAR(1,"CHD",3,"XADT")=""
VAR(1,"CHD",3,"XRDT")=""
VAR(1,"CHD",4,"CON")=51002006
VAR(1,"CHD",4,"DTS")=51002
VAR(1,"CHD",4,"TRM")="Diabetes mellitus associated with pancreatic disease (disorder)"
VAR(1,"CHD",4,"XADT")=""
VAR(1,"CHD",4,"XRDT")=""
VAR(1,"CHD",5,"CON")=42954008
VAR(1,"CHD",5,"DTS")=42954
VAR(1,"CHD",5,"TRM")="Diabetes mellitus associated with receptor abnormality (disorder)"
VAR(1,"CHD",5,"XADT")=""
VAR(1,"CHD",5,"XRDT")=""
VAR(1,"CHD",6,"CON")=75682002
VAR(1,"CHD",6,"DTS")=75682
VAR(1,"CHD",6,"TRM")="Diabetes mellitus due to insulin receptor antibodies (disorder)"
VAR(1,"CHD",6,"XADT")=""
VAR(1,"CHD",6,"XRDT")=""
VAR(1,"CHD",7,"CON")=27656009
VAR(1,"CHD",7,"DTS")=276560
VAR(1,"CHD",7,"TRM")="Diabetes mellitus in neonate small for gestational age (disorder)"
VAR(1,"CHD",7,"XADT")=""
VAR(1,"CHD",7,"XRDT")=""
VAR(1,"CHD",8,"CON")=5368009
VAR(1,"CHD",8,"DTS")=5368
VAR(1,"CHD",8,"TRM")="Drug-induced diabetes mellitus (disorder)"
VAR(1,"CHD",8,"XADT")=""
VAR(1,"CHD",8,"XRDT")=""
VAR(1,"CHD",9,"CON")=408539000
VAR(1,"CHD",9,"DTS")=408539
VAR(1,"CHD",9,"TRM")="Insulin autoimmune syndrome (disorder)"
VAR(1,"CHD",9,"XADT")=""
VAR(1,"CHD",9,"XRDT")=""
VAR(1,"CHD",10,"CON")=75524006
VAR(1,"CHD",10,"DTS")=75524
VAR(1,"CHD",10,"TRM")="Malnutrition related diabetes mellitus (disorder)"
VAR(1,"CHD",10,"XADT")=""
VAR(1,"CHD",10,"XRDT")=""
VAR(1,"CHD",11,"CON")=445260006
VAR(1,"CHD",11,"DTS")=445260
VAR(1,"CHD",11,"TRM")="Posttransplant diabetes mellitus (disorder)"
VAR(1,"CHD",11,"XADT")=""
VAR(1,"CHD",11,"XRDT")=""
VAR(1,"CHD",12,"CON")=237601000
VAR(1,"CHD",12,"DTS")=237601
VAR(1,"CHD",12,"TRM")="Secondary endocrine diabetes mellitus (disorder)"
VAR(1,"CHD",12,"XADT")=""
VAR(1,"CHD",12,"XRDT")=""
VAR(1,"CON")=8801005
VAR(1,"DTS")=8801
VAR(1,"FSN","DSC")=830605015
VAR(1,"FSN","TRM")="Secondary diabetes mellitus (disorder)"
VAR(1,"FSN","XADT")=3120301.07
VAR(1,"FSN","XRDT")=""
VAR(1,"IC9",1,"COD")="250.80"
VAR(1,"IC9",1,"TYP")="IC9"
VAR(1,"IC9",1,"XADT")=""
VAR(1,"IC9",1,"XRDT")=""
VAR(1,"ICD",1,"COD")="E13.9"
VAR(1,"ICD",1,"TYP")="10D"
VAR(1,"ICD",1,"XADT")=3150510
VAR(1,"ICD",1,"XRDT")=3491201.19
VAR(1,"ISA",1,"CON")=73211009
VAR(1,"ISA",1,"DTS")=73211
VAR(1,"ISA",1,"TRM")="Diabetes mellitus (disorder)"
VAR(1,"ISA",1,"XADT")=""
VAR(1,"ISA",1,"XRDT")=""
VAR(1,"PRB","DSC")=830605015
VAR(1,"PRB","TRM")="Secondary diabetes mellitus (disorder)"
VAR(1,"PRE", "DSC")=15518018
VAR(1,"PRE", "TRM")="Secondary diabetes mellitus"
VAR(1,"PRE", "XADT")=320303.07
VAR(1,"PRE", "XRDT")=""
VAR(1,"SUB",1,"SUB")="IHS PROBLEM SUPerset"
VAR(1,"SUB",1,"XADT")=""
VAR(1,"SUB",1,"XRDT")=""
VAR(1,"SUB",2,"SUB")="PICK Urology/Nephrology Long"
VAR(1,"SUB",2,"XADT")=""
VAR(1,"SUB",2,"XRDT")=""
VAR(1,"SUB",3,"SUB")="SRCH Diabetes"
VAR(1,"SUB",3,"XADT")=""
VAR(1,"SUB",3,"XRDT")=""
VAR(1,"SUB",4,"SUB")="SRCH Neurology"
VAR(1,"SUB",4,"XADT")=""
VAR(1,"SUB",4,"XRDT")=""
VAR(1,"SUB",5,"SUB")="SRCH Pediatrics"
VAR(1,"SUB",5,"XADT")=""
VAR(1,"SUB",5,"XRDT")=""
VAR(1,"SUB",6,"SUB")="IHS Problem List"
VAR(1,"SUB",6,"XADT")=""
VAR(1,"SUB",6,"XRDT")=""
VAR(1,"SUB",7,"SUB")="PXRM DIABETES"
VAR(1,"SUB",7,"XADT")=""
VAR(1,"SUB",7,"XRDT")=""
VAR(1,"SYN",1,"DSC")=1109081000119118
VAR(1,"SYN",1,"TRM")="Secondary diabetes"
VAR(1,"SYN",1,"XADT")=3140301.07
VAR(1,"SYN",1,"XRDT")=""
VAR(1,"SYN",2,"DSC")=1109071000119116
VAR(1,"SYN",2,"TRM")="Secondary dm"
VAR(1,"SYN",2,"XADT")=3140301.07
VAR(1,"SYN",2,"XRDT")=""
VAR(1,"SYN",3,"DSC")=15519014
VAR(1,"SYN",3,"TRM")="Secondary diabetes mellitus, NOS"
VAR(1,"SYN",3,"XADT")=3120301.07
VAR(1,"SYN",3,"XRDT")=""
VAR(1,"XRDT")=3120301
VAR(1,"XRDT")=3500101

Figure 14-32 Description ID Detail – Local Cache
The following example retrieves the detail for the associated concept when the Description ID for a term is provided (using a remote DTS server lookup):

```
> $S OUT="VAR",IN="830605015^^2"
>W $$DSCLP^BSTSAPI(OUT,IN)
2^>ZW @OUT
VAR(1,"CHD",1,"CON")=426705001
VAR(1,"CHD",1,"DTS")=426705
VAR(1,"CHD",1,"TRM")="Diabetes mellitus associated with cystic fibrosis (disorder)"
VAR(1,"CHD",1,"XADT")=""
VAR(1,"CHD",1,"XRDT")=""
VAR(1,"CHD",2,"CON")=5969009
VAR(1,"CHD",2,"DTS")=5969
VAR(1,"CHD",2,"TRM")="Diabetes mellitus associated with genetic syndrome (disorder)"
VAR(1,"CHD",2,"XADT")=""
VAR(1,"CHD",2,"XRDT")=""
VAR(1,"CHD",3,"CON")=59079001
VAR(1,"CHD",3,"DTS")=59079
VAR(1,"CHD",3,"TRM")="Diabetes mellitus associated with hormonal etiology (disorder)"
VAR(1,"CHD",3,"XADT")=""
VAR(1,"CHD",3,"XRDT")=""
VAR(1,"CHD",4,"CON")=51002006
VAR(1,"CHD",4,"DTS")=51002
VAR(1,"CHD",4,"TRM")="Diabetes mellitus associated with pancreatic disease (disorder)"
VAR(1,"CHD",4,"XADT")=""
VAR(1,"CHD",4,"XRDT")=""
VAR(1,"CHD",5,"CON")=42954008
VAR(1,"CHD",5,"DTS")=42954
VAR(1,"CHD",5,"TRM")="Diabetes mellitus associated with receptor abnormality (disorder)"
VAR(1,"CHD",5,"XADT")=""
VAR(1,"CHD",5,"XRDT")=""
VAR(1,"CHD",6,"CON")=75682002
VAR(1,"CHD",6,"DTS")=75682
VAR(1,"CHD",6,"TRM")="Diabetes mellitus due to insulin receptor antibodies (disorder)"
VAR(1,"CHD",6,"XADT")=""
VAR(1,"CHD",6,"XRDT")=""
VAR(1,"CHD",7,"CON")=276560009
VAR(1,"CHD",7,"DTS")=276560
VAR(1,"CHD",7,"TRM")="Diabetes mellitus in neonate small for gestational age (disorder)"
VAR(1,"CHD",7,"XADT")=""
VAR(1,"CHD",7,"XRDT")=""
VAR(1,"CHD",8,"CON")=5368009
VAR(1,"CHD",8,"DTS")=5368
VAR(1,"CHD",8,"TRM")="Drug-induced diabetes mellitus (disorder)"
VAR(1,"CHD",8,"XADT")=""
VAR(1,"CHD",8,"XRDT")=""
VAR(1,"CHD",9,"CON")=408539000
VAR(1,"CHD",9,"DTS")=408539
VAR(1,"CHD",9,"TRM")="Insulin autoimmune syndrome (disorder)"
VAR(1,"CHD",9,"XADT")=""
VAR(1,"CHD",9,"XRDT")=""
VAR(1,"CHD",10,"CON")=75524006
```
VAR(1,"CHD",10,"DTS")=75524
VAR(1,"CHD",10,"TRM")="Malnutrition related diabetes mellitus (disorder)"
VAR(1,"CHD",10,"XADT")=""
VAR(1,"CHD",10,"XRDT")=""
VAR(1,"CHD",11,"CON")=445260006
VAR(1,"CHD",11,"DTS")=445260
VAR(1,"CHD",11,"TRM")="Posttransplant diabetes mellitus (disorder)"
VAR(1,"CHD",11,"XADT")=""
VAR(1,"CHD",11,"XRDT")=""
VAR(1,"CHD",12,"CON")=237601000
VAR(1,"CHD",12,"DTS")=237601
VAR(1,"CHD",12,"TRM")="Secondary endocrine diabetes mellitus (disorder)"
VAR(1,"CHD",12,"XADT")=""
VAR(1,"CHD",12,"XRDT")=""
VAR(1,"CON")=8801005
VAR(1,"DTS")=8801
VAR(1,"FSN","DSC")=830605015
VAR(1,"FSN","TRM")="Secondary diabetes mellitus (disorder)"
VAR(1,"FSN","XADT")=3120301.07
VAR(1,"FSN","XRDT")=""
VAR(1,"IC9",1,"COD")="250.80"
VAR(1,"IC9",1,"TYP")="IC9"
VAR(1,"IC9",1,"XADT")=""
VAR(1,"IC9",1,"XRDT")=""
VAR(1,"ICD",1,"COD")="E13.9"
VAR(1,"ICD",1,"TYP")="10D"
VAR(1,"ICD",1,"XADT")=3150510
VAR(1,"ICD",1,"XRDT")=""
VAR(1,"ISA",1,"CON")=73211009
VAR(1,"ISA",1,"DTS")=73211
VAR(1,"ISA",1,"TRM")="Diabetes mellitus (disorder)"
VAR(1,"ISA",1,"XADT")=""
VAR(1,"ISA",1,"XRDT")=""
VAR(1,"PRB","DSC")=830605015
VAR(1,"PRB","TRM")="Secondary diabetes mellitus (disorder)"
VAR(1,"PRB","DSC")=15518018
VAR(1,"PRB","TRM")="Secondary diabetes mellitus"
VAR(1,"PRE","XADT")=3120301.07
VAR(1,"PRE","XRDT")=""
VAR(1,"SUB",1,"SUB")="IHS PROBLEM SUPERSET"
VAR(1,"SUB",1,"XADT")=""
VAR(1,"SUB",1,"XRDT")=""
VAR(1,"SUB",2,"SUB")="PICK Urology/Nephrology Long"
VAR(1,"SUB",2,"XADT")=""
VAR(1,"SUB",2,"XRDT")=""
VAR(1,"SUB",3,"SUB")="SRCH Diabetes"
VAR(1,"SUB",3,"XADT")=""
VAR(1,"SUB",3,"XRDT")=""
VAR(1,"SUB",4,"SUB")="SRCH Neurology"
VAR(1,"SUB",4,"XADT")=""
VAR(1,"SUB",4,"XRDT")=""
VAR(1,"SUB",5,"SUB")="SRCH Pediatrics"
VAR(1,"SUB",5,"XADT")=""
VAR(1,"SUB",5,"XRDT")=""
VAR(1,"SUB",6,"SUB")="IHS Problem List"
VAR(1,"SUB",6,"XADT")=""
VAR(1,"SUB",6,"XRDT")=""
VAR(1,"SUB",7,"SUB")="PXRM DIABETES"
VAR(1,"SUB",7,"XADT")=""
VAR(1,"SUB",7,"XRDT")=""
VAR(1,"SYN",1,"DSC")=1109081000119118
VAR(1,"SYN",1,"TRM")="Secondary diabetes"
VAR(1,"SYN",1,"XADT")=3140301.07
VAR(1,"SYN",1,"XRDT")=""
VAR(1,"SYN",2,"DSC")=1109071000119116
VAR(1,"SYN",2,"TRM")="Secondary dm"
VAR(1,"SYN",2,"XADT")=3140301.07
VAR(1,"SYN",2,"XRDT")=""
VAR(1,"SYN",3,"DSC")=15519014
VAR(1,"SYN",3,"TRM")="Secondary diabetes mellitus, NOS"
VAR(1,"SYN",3,"XADT")=3120301.07
VAR(1,"SYN",3,"XRDT")=""
VAR(1,"XADT")=3120301
VAR(1,"XRDT")=""

Figure 14-33 Description ID Detail – DTS Lookup

The following example retrieves the detail for the associated concept when the Description ID for a term is provided (UNII Codeset) (using a local cache lookup):

>S OUT="VAR",IN="5C5403N26O.316825^5180"
>W $SDESCLKPCBSTSAPI(OUT,IN)
  1
>ZW @OUT
VAR(1,"CON")="5C5403N26O"
VAR(1,"DTS")=57
VAR(1,"FSN","DSC")="5C5403N260.57"
VAR(1,"FSN","TRM")="ACACIA"
VAR(1,"FSN","XADT")=""
VAR(1,"FSN","XRDT")=""
VAR(1,"PRB","DSC")="5C5403N260.316825"
VAR(1,"PRB","TRM")="ACACIA POWDER [VANDF]"
VAR(1,"SYN",1,"DSC")="5C5403N260.316825"
VAR(1,"SYN",1,"TRM")="ACACIA POWDER [VANDF]"
VAR(1,"SYN",1,"XADT")=""
VAR(1,"SYN",1,"XRDT")=""
VAR(1,"SYN",2,"DSC")="5C5403N260.316824"
VAR(1,"SYN",2,"TRM")="ACACIA [VANDF]"
VAR(1,"SYN",2,"XADT")=""
VAR(1,"SYN",2,"XRDT")=""
VAR(1,"SYN",3,"DSC")="5C5403N260.316823"
VAR(1,"SYN",3,"TRM")="GUM ARABIC [VANDF]"
VAR(1,"SYN",3,"XADT")=""
VAR(1,"SYN",3,"XRDT")=""
VAR(1,"SYN",4,"DSC")="5C5403N260.316822"
VAR(1,"SYN",4,"TRM")="PLANTS AND PLANT PARTS, GUM, ACACIA OR ARABIC ACACIA SENEGAL"
VAR(1,"SYN",4,"XADT")=""
VAR(1,"SYN",4,"XRDT")=""
VAR(1,"SYN",5,"DSC")="5C5403N260.316821"
VAR(1,"SYN",5,"TRM")="ACACIA SENEGAL GUM [WHO-DD]"
VAR(1,"SYN",5,"XADT")=""
VAR(1,"SYN",5,"XRDT")=""
VAR(1,"SYN",6,"DSC")="5C5403N260.316820"
VAR(1,"SYN",6,"TRM")="ACACIA SENEGAL RESIN [WHO-DD]"
VAR(1,"SYN",6,"XADT")=""
VAR(1,"SYN",6,"XRDT")=""
| VAR(1,"SYN",7,"TRM")="ACACIA [HSDB]" |
| VAR(1,"SYN",7,"XADT")="" |
| VAR(1,"SYN",7,"XRDT")="" |
| VAR(1,"SYN",8,"DSC")="5C5403N260.316816" |
| VAR(1,"SYN",8,"TRM")="ARABIC GUM ALLERGENIC EXTRACT" |
| VAR(1,"SYN",8,"XADT")="" |
| VAR(1,"SYN",8,"XRDT")="" |
| VAR(1,"SYN",9,"DSC")="5C5403N260.316817" |
| VAR(1,"SYN",9,"TRM")="ALLERGENIC EXTRACT- GUM, ACACIA OR ARABIC ACACIA SENEGAL" |
| VAR(1,"SYN",9,"XADT")="" |
| VAR(1,"SYN",9,"XRDT")="" |
| VAR(1,"SYN",10,"DSC")="5C5403N260.165026" |
| VAR(1,"SYN",10,"TRM")="ACACIA [II]" |
| VAR(1,"SYN",10,"XADT")="" |
| VAR(1,"SYN",10,"XRDT")="" |
| VAR(1,"SYN",11,"DSC")="5C5403N260.165025" |
| VAR(1,"SYN",11,"TRM")="ACACIA MUCILAGE [II]" |
| VAR(1,"SYN",11,"XADT")="" |
| VAR(1,"SYN",11,"XRDT")="" |
| VAR(1,"SYN",12,"DSC")="5C5403N260.165024" |
| VAR(1,"SYN",12,"TRM")="ACACIA [MI]" |
| VAR(1,"SYN",12,"XADT")="" |
| VAR(1,"SYN",12,"XRDT")="" |
| VAR(1,"SYN",13,"DSC")="5C5403N260.165023" |
| VAR(1,"SYN",13,"TRM")="ACACIA [MART.]" |
| VAR(1,"SYN",13,"XADT")="" |
| VAR(1,"SYN",13,"XRDT")="" |
| VAR(1,"SYN",14,"DSC")="5C5403N260.165022" |
| VAR(1,"SYN",14,"TRM")="ACACIA SENESEAL GUM [INCI]" |
| VAR(1,"SYN",14,"XADT")="" |
| VAR(1,"SYN",14,"XRDT")="" |
| VAR(1,"SYN",15,"DSC")="5C5403N260.165021" |
| VAR(1,"SYN",15,"TRM")="ACACIA SENESEAL GUM EXTRACT [INCI]" |
| VAR(1,"SYN",15,"XADT")="" |
| VAR(1,"SYN",15,"XRDT")="" |
| VAR(1,"SYN",16,"DSC")="5C5403N260.165020" |
| VAR(1,"SYN",16,"TRM")="ACACIA SENESEAL GUM EXTRACT [INCI]" |
| VAR(1,"SYN",16,"XADT")="" |
| VAR(1,"SYN",16,"XRDT")="" |
| VAR(1,"SYN",17,"DSC")="5C5403N260.165019" |
| VAR(1,"SYN",17,"TRM")="ACACIA SENESEAL GUM" |
| VAR(1,"SYN",17,"XADT")="" |
| VAR(1,"SYN",17,"XRDT")="" |
| VAR(1,"SYN",18,"DSC")="5C5403N260.87154" |
| VAR(1,"SYN",18,"TRM")="ARABIC GUM" |
| VAR(1,"SYN",18,"XADT")="" |
| VAR(1,"SYN",18,"XRDT")="" |
| VAR(1,"SYN",19,"DSC")="5C5403N260.87153" |
| VAR(1,"SYN",19,"TRM")="ACACIA, SPRAY-DRIED [EP]" |
| VAR(1,"SYN",19,"XADT")="" |
| VAR(1,"SYN",19,"XRDT")="" |
| VAR(1,"SYN",20,"DSC")="5C5403N260.87152" |
VAR(1,"SYN",22,"TRM")="ACACIA, SPRAY-DRIED"
VAR(1,"SYN",22,"XADT")=""
VAR(1,"SYN",22,"XRDT")=""
VAR(1,"SYN",23,"DSC")="5C5403N26O.87151"
VAR(1,"SYN",23,"TRM")="ACACIA GUM [FHFI]"
VAR(1,"SYN",23,"XADT")=""
VAR(1,"SYN",23,"XRDT")=""
VAR(1,"SYN",24,"DSC")="5C5403N26O.87150"
VAR(1,"SYN",24,"TRM")="ACACIA ARABICA [HPUS]"
VAR(1,"SYN",24,"XADT")=""
VAR(1,"SYN",24,"XRDT")=""
VAR(1,"SYN",25,"DSC")="5C5403N26O.87149"
VAR(1,"SYN",25,"TRM")="ACACIA SENEGAL GUM EXTRACT"
VAR(1,"SYN",25,"XADT")=""
VAR(1,"SYN",25,"XRDT")=""
VAR(1,"SYN",26,"DSC")="5C5403N26O.87148"
VAR(1,"SYN",26,"TRM")="ACACIA POWDER"
VAR(1,"SYN",26,"XADT")=""
VAR(1,"SYN",26,"XRDT")=""
VAR(1,"SYN",27,"DSC")="5C5403N26O.21204"
VAR(1,"SYN",27,"TRM")="THORNY ACACIA RESIN"
VAR(1,"SYN",27,"XADT")=""
VAR(1,"SYN",27,"XRDT")=""
VAR(1,"SYN",28,"DSC")="5C5403N26O.21203"
VAR(1,"SYN",28,"TRM")="SENEGALIA SENEGAL RESIN"
VAR(1,"SYN",28,"XADT")=""
VAR(1,"SYN",28,"XRDT")=""
VAR(1,"SYN",29,"DSC")="5C5403N26O.21202"
VAR(1,"SYN",29,"TRM")="SENEGAL GUM"
VAR(1,"SYN",29,"XADT")=""
VAR(1,"SYN",29,"XRDT")=""
VAR(1,"SYN",30,"DSC")="5C5403N26O.21201"
VAR(1,"SYN",30,"TRM")="RFAUDRAKSHA RESIN"
VAR(1,"SYN",30,"XADT")=""
VAR(1,"SYN",30,"XRDT")=""
VAR(1,"SYN",31,"DSC")="5C5403N26O.21200"
VAR(1,"SYN",31,"TRM")="MIMOSA SENEGAL RESIN"
VAR(1,"SYN",31,"XADT")=""
VAR(1,"SYN",31,"XRDT")=""
VAR(1,"SYN",32,"DSC")="5C5403N26O.21199"
VAR(1,"SYN",32,"TRM")="KHER RESIN"
VAR(1,"SYN",32,"XADT")=""
VAR(1,"SYN",32,"XRDT")=""
VAR(1,"SYN",33,"DSC")="5C5403N26O.21198"
VAR(1,"SYN",33,"TRM")="GUMMI ARABICUM"
VAR(1,"SYN",33,"XADT")=""
VAR(1,"SYN",33,"XRDT")=""
VAR(1,"SYN",34,"DSC")="5C5403N26O.21197"
VAR(1,"SYN",34,"TRM")="GUM SENEGAL"
VAR(1,"SYN",34,"XADT")=""
VAR(1,"SYN",34,"XRDT")=""
VAR(1,"SYN",35,"DSC")="5C5403N26O.21196"
VAR(1,"SYN",35,"TRM")="ACACIAE GUMMI"
VAR(1,"SYN",35,"XADT")=""
VAR(1,"SYN",35,"XRDT")=""
VAR(1,"SYN",36,"DSC")="5C5403N26O.21195"
VAR(1,"SYN",36,"TRM")="ACACIA VOLKII RESIN"
VAR(1,"SYN",36,"XADT")=""
VAR(1,"SYN",36,"XRDT")=""
VAR(1,"SYN",37,"DSC")="5C5403N26O.21194"
VAR(1,"SYN",37,"TRM")="ACACIA SPINOSA RESIN"
VAR(1,"SYN",37,"XADT")=""
VAR(1,"SYN",37,"XRDT")=""
VAR(1,"SYN",38,"DSC")="5C5403N26O.21192"
VAR(1,"SYN",38,"TRM")="ACACIA OXYOSPRION RESIN"
VAR(1,"SYN",38,"XADT")=""
VAR(1,"SYN",38,"XRDT")=""
VAR(1,"SYN",39,"DSC")="5C5403N26O.21191"
VAR(1,"SYN",39,"TRM")="ACACIA MUCILAGE"
VAR(1,"SYN",39,"XADT")=""
VAR(1,"SYN",39,"XRDT")=""
VAR(1,"SYN",40,"DSC")="5C5403N26O.21190"
VAR(1,"SYN",40,"TRM")="ACACIA CUFOONTII RESIN"
VAR(1,"SYN",40,"XADT")=""
VAR(1,"SYN",40,"XRDT")=""
VAR(1,"SYN",41,"DSC")="5C5403N26O.21189"
VAR(1,"SYN",41,"TRM")="ACACIA CIRCUMMARGINATA RESIN"
VAR(1,"SYN",41,"XADT")=""
VAR(1,"SYN",41,"XRDT")=""
VAR(1,"SYN",42,"DSC")="5C5403N26O.21188"
VAR(1,"SYN",42,"TRM")="ACACIA ARABICA"
VAR(1,"SYN",42,"XADT")=""
VAR(1,"SYN",42,"XRDT")=""
VAR(1,"SYN",43,"DSC")="5C5403N26O.8759"
VAR(1,"SYN",43,"TRM")="GUM ARABIC"
VAR(1,"SYN",43,"XADT")=""
VAR(1,"SYN",43,"XRDT")=""
VAR(1,"SYN",44,"DSC")="5C5403N26O.8758"
VAR(1,"SYN",44,"TRM")="GUM ACACIA"
VAR(1,"SYN",44,"XADT")=""
VAR(1,"SYN",44,"XRDT")=""
VAR(1,"SYN",45,"DSC")="5C5403N26O.8757"
VAR(1,"SYN",45,"TRM")="ACACIA VEREK RESIN"
VAR(1,"SYN",45,"XADT")=""
VAR(1,"SYN",45,"XRDT")=""
VAR(1,"SYN",46,"DSC")="5C5403N26O.8756"
VAR(1,"SYN",46,"TRM")="ACACIA SENEGAL RESIN"
VAR(1,"SYN",46,"XADT")=""
VAR(1,"SYN",46,"XRDT")=""
VAR(1,"SYN",47,"DSC")="5C5403N26O.8755"
VAR(1,"SYN",47,"TRM")="ACACIA GUM"
VAR(1,"SYN",47,"XADT")=""
VAR(1,"SYN",47,"XRDT")=""
VAR(1,"XADT")=""
VAR(1,"XRDT")=""
A.13  $$DESC^BSTSAPI

The following example returns the Concept ID, the Description Term, and the mapped ICD-9 codes of the concept when a Description ID is provided (using a local cache lookup):

```plaintext
>W $$DESC^BSTSAPI(459311019)
314903002^Type II diabetes mellitus with arthropathy^ZZZ.999^250.00;716.90
```

Figure 14-35 Description ID Detail – Concept ID, Description Term, ICD-9

A.14  $$CONC^BSTSAPI

The following example returns the Fully Specified Name, its associated Description ID, the Preferred Term and its associated Description ID, and the mapped ICD-9 codes when a Concept ID is provided (using a local cache lookup):

```plaintext
>W $$CONC^BSTSAPI(314903002)
711739010^Type II diabetes mellitus with arthropathy (disorder)^459310018^Type 2 diabetes mellitus with arthropathy^ZZZ.999^250.00;716.90
```

Figure 14-36 Description ID Detail – Fully Specified Name, Concept ID, Description Term, ICD-9

A.15  $$SUBLST^BSTSAPI

The following example shows the concepts found in the “SRCH Preventive Care” subset (using a local cache lookup):

```plaintext
>S OUT="VAR",IN="SRCH Preventive Care"

>W $$SUBLST^BSTSAPI(OUT,IN)
1
ZW @OUT
VAR(1)="130969003^210604017^Health seeking behavior"
VAR(2)="266758009^397223010^Immunization contraindicated"
VAR(3)="418043000^2578952010^Advice given"
VAR(4)="171226003^265323017^Aortic aneurysm screening"
VAR(5)="397940009^1777529016^Victim of child abuse"
VAR(6)="185665008^285656016^BP screening - first call"
VAR(7)="392089008^1486075012^Breast procedure"
VAR(8)="46662001^77772014^Examination of breast"
VAR(9)="171216005^265312016^Cataract screening"
VAR(10)="274412005^410210013^Eye disorder screening"
VAR(11)="171164006^265213011^Cervical smear due"
VAR(12)="95922009^158895013^Child sex abuse"
VAR(13)="268563000^401589018^Child health medical examination"
VAR(14)="408761008^2470622012^Children's vision screening"
VAR(15)="408760009^2470621017^Vision screening"
VAR(16)="428171000124102^635271000124117^Depression screening negative"
VAR(17)="428181000124104^635251000124110^Depression screening positive"
VAR(18)="401081006^1780286017^Diabetic peripheral neuropathy screening"
```
VAR(19)="394642008^1488367018^Drug screening test"
VAR(20)="460617003^2922918015^Education of caregiver"
VAR(21)="171253004^265358015^Exercise status screening"
VAR(22)="410385005^2472046011^Family planning surveillance"
VAR(23)="401212003^1774852017^Fecal screening tests"
VAR(24)="171313004^265475013^Geriatric screening"
VAR(25)="170985004^2469401019^Person counseled"
VAR(26)="81302005^134872016^Worried well"
VAR(27)="252404004^375950015^Hepatitis A antigen screening"
VAR(28)="171122006^265164019^Hepatitis B screening"
VAR(29)="315631004^460150015^H/O: influenza vaccine allergy"
VAR(30)="310373003^453951018^Immunization advised"
VAR(31)="225060009^338241019^Lifestyle screening"
VAR(32)="170988002^2469404010^Relative counseled"
VAR(33)="171209009^265302011^Tobacco usage screening"
VAR(34)="410642005^2472296015^Well child visit, 10 years"
VAR(35)="410620009^2472274014^Well child visit"
VAR(36)="391147004^1485169011^HPV - Human papillomavirus test positive"
VAR(37)="4854004^9091010^Acquired hemolytic anemia"
VAR(38)="387705004^1477163017^Hemolytic disease of fetus OR newborn due to isoimmunization"
VAR(39)="62479008^103840012^AIDS"
VAR(40)="359791000^475161014^AIDS with dermatomyositis"
VAR(41)="77070006^127948012^AIDS with Salmonella infection"
VAR(42)="86406008^143288017^Human immunodeficiency virus infection"
VAR(43)="62246005^103445014^AIDS-like syndrome"
VAR(44)="389098007^1483154012^Anoxic encephalopathy"
VAR(45)="105629000^169750018^Chlamydial infection"
VAR(46)="196298000^301925015^Acute dentine dental caries"
VAR(47)="442551007^2820469019^Dental caries extending into dentine"
VAR(48)="196301001^301928018^Acute enamel dental caries"
VAR(49)="80353004^133324017^Enamel caries"
VAR(50)="18917003^31892013^Acute fulminating type A viral hepatitis"
VAR(51)="25102003^42082019^Acute type A viral hepatitis"
VAR(52)="13265006^22692019^Acute fulminating type B viral hepatitis"
VAR(53)="76795007^127950014^Acute type B viral hepatitis"
VAR(54)="426165006^2675239013^Acute genitourinary chlamydia infection"
VAR(55)="312099009^45573019^Genitourinary chlamydia infection"
VAR(56)="426247003^2676041011^Acute genitourinary Chlamydia trachomatis infection"
VAR(57)="240589008^360379017^Chlamydia trachomatis infection"
VAR(58)="186624004^28663012^Acute hepatitis B with delta agent (coinfection) with hepatic coma"
VAR(59)="235864009^35537018^Acute hepatitis B with hepatitis D"
VAR(60)="424099008^3008432017^Hepatic coma due to acute hepatitis B (coinfection) without hepatic coma"
VAR(61)="186626002^286866016^Acute hepatitis B with delta-agent hepatitis (coinfection) without hepatic coma"
VAR(62)="111880001^179040311^Acute HIV infection"
VAR(63)="87117006^144456015^HIV infection with acute lymphadenitis"
VAR(64)="40468003^67480019^Viral hepatitis, type A"
VAR(65)="66071002^109732019^Type B viral hepatitis"
VAR(66)="268565007^401591014^Adult health examination"
VAR(67)="78318003^129970016^History and physical examination, annual for health maintenance"
VAR(68)="281029006^418926017^Well man health examination"
VAR(69)="28103002^418928016^Well woman health examination"
VAR(70)="171209009^265358015^Exercise status screening"
VAR(71)="4758004^140514014^Amphetamine abuse"
VAR(72)="427205009^2674599017^Amphetamine abuse, continuous"
VAR(73)="429692000^269665019^Amphetamine abuse, episodic"
VAR(74)="21647008^36324011^Amphetamine dependence"
VAR(75)="426873000^2676031013^Methamphetamine dependence"
VAR(76)="191845006^295200014^Amphetamine or psychostimulant dependence in remission"
VAR(77)="191843004^295198015^Amphetamine or psychostimulant dependence, continuous"
VAR(78)="191844005^295199011^Amphetamine or psychostimulant dependence, episodic"
VAR(79)="234349007^351085011^Microcytic anemia"
VAR(80)="171201007^265284011^Anemia screening"
VAR(81)="79031007^131139015^Anicteric type A viral hepatitis"
VAR(82)="790311003^131140015^Anicteric type B viral hepatitis"
VAR(83)="30828007^51603016^Anoxia, in liveborn infant"
VAR(84)="285179001^419620017^Perinatal hypoxia"
VAR(85)="169595006^263136014^A/N care: H/O child abuse"
VAR(86)="243787009^364616017^Antenatal screening"
VAR(87)="231470001^346930014^Anxiolytic dependence"
VAR(88)="268640002^401791011^Hypnotic or anxiolytic dependence"
VAR(89)="80753001^133949013^Arrested dental caries"
VAR(90)="80967001^134311013^Dental caries"
VAR(91)="315019000^459483019^PID with female sterility due to Chlamydia trachomatis"
VAR(92)="446752000^2884076018^Infection of peritoneum due to Chlamydia trachomatis"
VAR(93)="276580005^412791015^Atypical isoimmunization of newborn"
VAR(94)="428015005^2694861013^Chlamydia trachomatis infection of genital structure"
VAR(95)="188463006^289547011^Chlamydial pelvic inflammatory disease"
VAR(96)="367504009^492483019^PID with female sterility due to Chlamydia trachomatis"
VAR(97)="186731007^287038016^Chlamydial infection of anus and rectum"
VAR(98)="446752000^2884076018^Infection of peritoneum due to Chlamydia trachomatis"
VAR(99)="179101003^277121011^Urethritis due to Chlamydia trachomatis"
VAR(100)="231462006^346928016^Barbiturate abuse"
VAR(101)="64386003^107023015^Sedative abuse"
VAR(102)="231472009^346941017^Barbiturate dependence"
VAR(103)="423787009^364616017^Antenatal screening"
VAR(104)="231473004^346942012^Benzodiazepine dependence"
VAR(105)="231474005^346943019^Diazepam dependence"
VAR(106)="231475006^346945014^Librium dependence"
VAR(107)="206187005^316128013^Birth trauma, asphyxia and hypoxia"
VAR(108)="171176006^265233010^Breast neoplasm screening normal"
VAR(109)="171175005^265233010^Breast neoplasm screening normal"
VAR(110)="412718006^2474276012^Chlamydia screening declined"
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VAR(127)="420910002^2693755012^Chlamydia trachomatis infection of anus and rectum"
VAR(128)="446642005^2884242016^Infection of anus due to Chlamydia trachomatis"
VAR(129)="447372001^2883731019^Infection of rectum due to Chlamydia trachomatis"
VAR(130)="447353001^2883503013^Infection of cervix due to Chlamydia trachomatis"
VAR(131)="447402003^2882845010^Infection of vagina due to Chlamydia trachomatis"
VAR(132)="447386002^2883136015^Infection of vulva due to Chlamydia trachomatis"
VAR(133)="189312004^290842015^Pelvic inflammation with female sterility due to Chlamydia trachomatis"
VAR(134)="186729003^287036017^Chlamydial infection of lower genitourinary tract"
VAR(135)="237084006^355365012^Chlamydial cervicitis"
VAR(136)="238372002^357290012^Chlamydial dermatological disorders"
VAR(137)="237097008^355388013^Chlamydial vulvovaginitis"
VAR(138)="237039009^355296017^Chlamydial salpingitis"
VAR(139)="198176005^304699015^Female chlamydial pelvic inflammatory disease"
VAR(140)="275972003^411949013^Cholesterol screening"
VAR(141)="50167007^83566015^Chronic active type B viral hepatitis"
VAR(142)="61977001^103019010^Chronic type B viral hepatitis"
VAR(143)="1116000^2956015^Chronic aggressive type B viral hepatitis"
VAR(144)="196299008^301926019^Chronic dentine dental caries"
VAR(145)="196302008^301929014^Chronic enamel dental caries"
VAR(146)="402894005^1781979011^Recurrent genital herpes simplex"
VAR(147)="38662009^64336013^Chronic persistent type B viral hepatitis"
VAR(148)="235869004^3552903019^Chronic viral hepatitis B with hepatitis D"
VAR(149)="186639003^286879013^Chronic viral hepatitis B without delta-agent"
VAR(150)="78267003^129874012^Cocaine abuse"
VAR(151)="191916008^295299015^Nondependent cocaine abuse"
VAR(152)="31956009^53398019^Cocaine dependence"
VAR(153)="191833002^295178013^Cocaine dependence in remission"
VAR(154)="191831000^295176012^Cocaine dependence, continuous"
VAR(155)="191832007^295177015^Cocaine dependence, episodic"
VAR(156)="444783004^2870627012^Screening colonoscopy"
VAR(157)="83607001^138662012^Gynecologic examination"
VAR(158)="75544000^125472011^Opioid dependence"
VAR(159)="11687002^295178015^Gestational diabetes mellitus"
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VAR(161)="206373002^316475015^Congenital hepatitis A infection"
VAR(162)="276666007^412920019^Congenital human immunodeficiency virus positive status syndrome"
VAR(163)="60498001^100520013^Congenital viral hepatitis B infection"
VAR(164)="191819002^295154015^Continuous opioid dependence"
VAR(165)="409063005^2469564010^Counseling"
VAR(166)="445142003^2871733018^Counseling about disease"
VAR(167)="186718002^287024012^HIV disease resulting in cytomegaloviral disease"
VAR(168)="196305005^301932012^Odontoclasia"
VAR(169)="163152009^254264018^O/E - dental caries"
VAR(170)="234976000^352147013^Rampant dental caries"
VAR(171)="95254009^157779017^Secondary dental caries"
VAR(172)="109564008^174168014^Dental caries associated with enamel hypomineralization"
| VAR(173) | "95253003^157778013^Secondary dental caries associated with local or systemic factors" |
| VAR(174) | "109566005^174170017^Dental caries associated with enamel hypoplasia" |
| VAR(175) | "109569003^174173015^Dental caries secondary to acquired defects of tooth structure" |
| VAR(176) | "109568006^174172013^Dental caries secondary to developmental defects of tooth structure" |
| VAR(177) | "171207006^265300015^Depression screening" |
| VAR(178) | "171183004^265249012^Diabetes mellitus screening" |
| VAR(179) | "134395001^216201011^Diabetic retinopathy screening" |
| VAR(180) | "235726002^353370019^Human immunodeficiency virus enteropathy" |
| VAR(181) | "231461004^346927014^Hypnotic or anxiolytic abuse" |
| VAR(182) | "191924003^295311015^Nondependent amphetamine or psychostimulant abuse, continuous" |
| VAR(183) | "191918009^295301010^Nondependent cocaine abuse, continuous" |
| VAR(184) | "191905001^295286018^Nondependent hypnotic or anxiolytic abuse, continuous" |
| VAR(185) | "191912005^295295014^Nondependent opioid abuse, continuous" |
| VAR(186) | "95247003^157768010^Salivary dysfunction caries secondary to medication" |
| VAR(187) | "307337003^450578010^Duffy isoimmunization of the newborn" |
| VAR(188) | "171219003^265315019^Ear disorder screening" |
| VAR(189) | "15733007^26656015^Incipient enamel caries" |
| VAR(190) | "109572005^174176011^Primary dental caries, cervical origin" |
| VAR(191) | "109571003^174175010^Primary dental caries, indeterminate origin" |
| VAR(192) | "109574006^174178012^Primary dental caries, nonproximal smooth surface origin" |
| VAR(193) | "109575007^174179016^Primary dental caries, pit and fissure origin" |
| VAR(194) | "109573000^174177019^Primary dental caries, proximal smooth surface origin" |
| VAR(195) | "109576008^174180018^Primary dental caries, root surface origin" |
| VAR(196) | "191822008^295155019^Episodic opioid dependence" |
| VAR(197) | "427578006^2673528011^Herpes simplex of female genitalia" |
| VAR(198) | "59819007^99366010^Herpetic ulceration of vulva" |
| VAR(199) | "129670002^208507013^Herpetic cervicitis" |
| VAR(200) | "426001001^2676030014^Fentanyl dependence" |
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| VAR(204) | "439912007^2791465011^Recurrent genital Herpes simplex type 1 infection" |
| VAR(205) | "439913002^2791466012^Recurrent genital Herpes simplex type 2 infection" |
| VAR(206) | "439913002^2791466012^Recurrent genital Herpes simplex type 2 infection" |
| VAR(207) | "402888002^1781973012^Primary herpes simplex infection of genitalia" |
| VAR(208) | "75022004^124602011^Gestational diabetes mellitus, class A>1<" |
| VAR(209) | "46894009^78158011^Gestational diabetes mellitus, class A>2<" |
| VAR(210) | "171221008^265317010^Heart disease screening" |
| VAR(211) | "32858009^54835019^Hemolytic disease of fetus OR newborn due to ABO immunization" |
| VAR(212) | "86986002^2155367014^Hemolytic disease of fetus OR newborn due to RhD immunization" |
| VAR(213) | "111469006^178710011^Hemolytic disease of the newborn due to non-ABO, non-Rh immunization" |
| VAR(214) | "15539009^26354014^Hydrops fetalis due to isoimmunization" |
| VAR(215) | "234380002^351141012^Kell isoimmunization of the newborn" |
| VAR(216) | "359007^1689015^Kernicterus due to isoimmunization" |
| VAR(217) | "307338008^450579019^Kidd isoimmunization of the newborn" |
| VAR(218) | Late anemia due to isoimmunization |
| VAR(219) | Hepatic coma due to viral hepatitis B |
| VAR(220) | Hepatic coma due to chronic hepatitis B |
| VAR(221) | Hepatic coma due to viral hepatitis A |
| VAR(222) | Hepatitis B and hepatitis C |
| VAR(223) | Hepatitis B associated with Human immunodeficiency virus infection |
| VAR(224) | Hepatitis B carrier |
| VAR(225) | Hepatitis B with hepatitis D superinfection |
| VAR(226) | Hepatitis C screening |
| VAR(227) | Heroin dependence |
| VAR(228) | Herpesvirus infection |
| VAR(229) | Herpesvirus infection of the central nervous system |
| VAR(230) | Herpesvirus infection of the central nervous system due to another virus |
| VAR(231) | Herpesvirus infection of the central nervous system due to another virus |
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| VAR(265) | Herpesvirus infection of the central nervous system due to another virus |

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VAR(266)="87199005^144596015^Lead screening"
VAR(267)="206266009^316280014^Liveborn with labor fetal distress"
VAR(268)="231478008^346949015^Methadone dependence"
VAR(269)="231479000^346950015^Morphine dependence"
VAR(270)="230598008^345522015^Neuropathy due to human immunodeficiency virus"
VAR(271)="268648009^401800012^Nondependent amphetamine or other psychostimulant abuse"
VAR(272)="414874007^2534808016^Nondependent amphetamine or psychostimulant abuse in remission"
VAR(273)="191925002^295312010^Nondependent amphetamine or psychostimulant abuse, episodic"
VAR(274)="191920007^295303013^Nondependent cocaine abuse in remission"
VAR(275)="191919001^295302015^Nondependent cocaine abuse, episodic"
VAR(276)="268647004^401799013^Nondependent hypnotic or anxiolytic abuse"
VAR(277)="191907009^295288017^Nondependent hypnotic or anxiolytic abuse in remission"
VAR(278)="191906000^295287010^Nondependent hypnotic or anxiolytic abuse, episodic"
VAR(279)="5602001^10350013^Opioid abuse"
VAR(280)="191914006^295297018^Nondependent opioid abuse in remission"
VAR(281)="191913000^295296010^Nondependent opioid abuse, episodic"
VAR(282)="268551005^401568010^Obesity screening"
VAR(283)="191821007^295156018^Opioid dependence in remission"
VAR(284)="231480002^346951016^Opium dependence"
VAR(285)="133899007^213636011^Postoperative care"
VAR(286)="95246007^157767017^Salivary dysfunction caries secondary to aging"
VAR(287)="95249000^157770018^Salivary dysfunction dental caries"
VAR(288)="446698005^2883285015^Relapsing type A viral hepatitis"
VAR(289)="231480002^346951016^Opium dependence"
VAR(290)="268547008^2821305019^Screening for malignant neoplasm of breast"
VAR(291)="444822002^2872725016^Screening for malignant neoplasm of prostate"
VAR(292)="444638005^287253014^Screening for malignant neoplasm of skin"
VAR(293)="442487003^2820682018^Screening for Chlamydia trachomatis"
VAR(294)="300004007^440991014^Screening for osteoporosis"
VAR(295)="171182009^265248016^Thyroid disorder screening"
VAR(296)="171126009^265169012^Tuberculosis screening"
VAR(297)="185186007^265169012^Tuberculosis screening"
VAR(298)="171126009^265169012^Tuberculosis screening"
VAR(299)="111879004^179042018^Viral hepatitis A without hepatic coma"
VAR(300)="424758008^2643521012^Viral hepatitis A without hepatic coma, without hepatitis delta"
VAR(301)="111891008^179047012^Viral hepatitis B without hepatic coma"

Figure 14-37 SRCH Preventive Care
A.16 **IXCD2SMD**$^\text{BSTSAPI}$

The following example shows the first five records and the last five records returned on an ICD2SMD API call (returning SNOMED concepts mapped to ICD9 code 250.00):

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>S OUT="VAR",IN="250.00"

>W IXCD2SMD$^\text{BSTSAPI}(OUT,IN)
1
ZW @OUT
VAR(1,"CON")=170746002
VAR(1,"DTS")=170746
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VAR(1,"FSN","TRM")="Diabetic on oral treatment (finding)"
VAR(1,"IC9",1,"COD")="250.00"
VAR(1,"IC9",1,"TYP")="IC9"
VAR(1,"ICD",1,"COD")="ZZZ.999"
VAR(1,"ICD",1,"TYP")="10D"
VAR(1,"ISA",1,"CON")=""
VAR(1,"ISA",1,"DTS")=243860
VAR(1,"ISA",1,"TRM")="Diabetic monitoring status (finding)"
VAR(1,"PRB","DSC")=264681018
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VAR(2,"CHD",1,"CON")=394674001
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VAR(2,"CHD",2,"DTS")=394676
VAR(2,"CHD",2,"TRM")="On examination - Left diabetic foot at high risk (finding)"
VAR(2,"CHD",3,"CON")=394675000
VAR(2,"CHD",3,"DTS")=394675
VAR(2,"CHD",3,"TRM")="On examination - Left diabetic foot at low risk (finding)"
VAR(2,"CHD",4,"CON")=394681008
VAR(2,"CHD",4,"DTS")=394681
VAR(2,"CHD",4,"TRM")="On examination - Left diabetic foot at moderate risk (finding)"
VAR(2,"CHD",5,"CON")=394673007
VAR(2,"CHD",5,"DTS")=394673
VAR(2,"CHD",5,"TRM")="On examination - Right diabetic foot - ulcerated (finding)"
VAR(2,"CHD",6,"CON")=394672002
VAR(2,"CHD",6,"DTS")=394672
VAR(2,"CHD",6,"TRM")="On examination - Right diabetic foot at high risk (finding)"
VAR(2,"CHD",7,"CON")=394671009
VAR(2,"CHD",7,"DTS")=394671
VAR(2,"CHD",7,"TRM")="On examination - Right diabetic foot at low risk (finding)"
VAR(2,"CHD",8,"CON")=394682001
VAR(2,"CHD",8,"DTS")=394682
VAR(2,"CHD",8,"TRM")="On examination - Right diabetic foot at moderate risk (finding)"
VAR(2,"CON")=309597007
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<th>Variable</th>
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<td>VAR(5,&quot;SUB&quot;,1,&quot;SUB&quot;)</td>
<td>&quot;IHS PROBLEM SUPERSET&quot;</td>
</tr>
<tr>
<td>VAR(5,&quot;SUB&quot;,2,&quot;SUB&quot;)</td>
<td>&quot;IHS Problem List&quot;</td>
</tr>
</tbody>
</table>

...
Figure 14-38:

$$DILKP^BSTSAPI$$

The following example shows how to look up the RxNorm for a given NDC number (using a local cache lookup):

```bash
>S OUT="VAR",IN="00713011850^N"
+W $$DILKP^BSTSAPI$(OUT,IN)
```
The following example shows how to look up the RxNorm for a given NDC number (using a remote DTS lookup):

```plaintext
>S OUT="VAR",IN="00713011850^N^2"
>W $DILKP^BSTSAPI(OUT,IN)
>ZW @OUT
VAR(1,"RXN","CON")=209352
VAR(1,"RXN","TDC")=198434
VAR(1,"RXN","TDT")="Acetaminophen 120 MG Rectal Suppository [198434]"
VAR(1,"RXN","TRM")="Acetaminophen 120 MG Rectal Suppository [Acephen]"
VAR(1,"RXN","TTY")="SBD"
```

**Figure 14-39 ICD2SMD API call**

The following example shows how to look up the RxNorm for a given VUID number (using a local cache lookup):

```plaintext
>S OUT="VAR",IN="4000734^V"
>W $DILKP^BSTSAPI(OUT,IN)
>ZW @OUT
VAR(1,"RXN","CON")=702519
VAR(1,"RXN","TDC")=""
VAR(1,"RXN","TDT")=""
VAR(1,"RXN","TRM")="Phenobarbital 4 MG/ML Oral Solution"
VAR(1,"RXN","TTY")="SCD"
```

**Figure 14-40 RxNorm for an NDC Number**

The following example shows how to look up the RxNorm for a given VUID number (using a local cache lookup):

```plaintext
>S OUT="VAR",IN="4000734^V"
>W $DILKP^BSTSAPI(OUT,IN)
>ZW @OUT
VAR(1,"RXN","CON")=702519
VAR(1,"RXN","TDC")=""
VAR(1,"RXN","TDT")=""
VAR(1,"RXN","TRM")="Phenobarbital 4 MG/ML Oral Solution"
VAR(1,"RXN","TTY")="SCD"
```

**Figure 14-41 RxNorm for a VUID Number**

### A.18 $$ASSOC^BSTSAPI$$

The following example shows how to display any associations for a given term. In this case, it is looking up the SNOMED CT information for a given GMRA Signs Symptoms entry (using a local cache lookup):

```plaintext
> W $$ASSOC^BSTSAPI("ABDOMINAL BLOATING^32772")
116289008^^
```
The following example shows the same call but instead of looking in local cache, it is doing a remote DTS lookup:

```plaintext
> W $ASSOC^BSTSAPI("ABDOMINAL BLOATING^32772^^2")
116289008^^
```

Figure 14-43 SNOMED CT for GMRA Signs Symptoms – Remote DTS Lookup

In this case, it is looking up the SNOMED CT information for a given IHS Med Route entry (using a local cache lookup):

```plaintext
> W $ASSOC^BSTSAPI("ORAL^32774")
26643006^^
```

Figure 14-44 SNOMED CT for IHS Med Routine

A.19 $DI2RX^BSTSAPI

The following example shows how to display the first RxNorm mapping for a particular NDC value (using a local cache lookup):

```plaintext
>S IN="00713011850^N"
>W $DI2RX^BSTSAPI(IN)
209352^Acetaminophen 120 MG Rectal Suppository
[Acephen]^198434^Acetaminophen 120 MG Rectal Suppository [198434]^SBD
```

Figure 14-45 RxNorm Mapping for NDC Value

A.20 $I10ADV^BSTSAPI

The following example shows how formatted ICD-10 mapping advice can be returned for a sample Concept Id (using a local cache lookup):

```plaintext
>S OUT="VAR",IN=2032001
>W $I10ADV^BSTSAPI(OUT,IN)
1
ZW @OUT
VAR(1)="Rule #1   Target Code: G93.6"
VAR(2)="ALWAYS G93.6"
VAR(3)=""
VAR(4)="Rule #2   Target Code: P11.0"
VAR(5)="IF CEREBRAL EDEMA DUE TO BIRTH INJURY CHOOSE P11.0"
VAR(6)=""
VAR(7)="Rule #3   Target Code: S01.80X7"
VAR(8)="IF TRAUMATIC CEREBRAL EDEMA WITH OPEN INTRACRANIAL WOUND CHOOSE S01.80X7"
```

Figure 14-46 ICD-10 Mapping Advice for Concept Id
VAR(9)="EPISODE OF CARE INFORMATION NEEDED"
VAR(10)="POSSIBLE REQUIREMENT FOR AN EXTERNAL CAUSE CODE"
VAR(11)="
VAR(12)="Rule #4  Target Code: S06.1X0?"
VAR(13)="IF TRAUMATIC CEREBRAL EDEMA CHOOSE S06.1X0?"
VAR(14)="CONSIDER ADDITIONAL CODE TO IDENTIFY SPECIFIC CONDITION OR DISEASE"
VAR(15)="EPISODE OF CARE INFORMATION NEEDED"
VAR(16)="POSSIBLE REQUIREMENT FOR AN EXTERNAL CAUSE CODE"
VAR(17)="
VAR(18)="Rule #5  Target Code: S06.1X0?"
VAR(19)="IF TRAUMATIC CEREBRAL EDEMA WITH OPEN INTRACRANIAL WOUND CHOOSE S06.1X0?"
VAR(20)="EPISODE OF CARE INFORMATION NEEDED"
VAR(21)="POSSIBLE REQUIREMENT FOR AN EXTERNAL CAUSE CODE"
VAR(22)="
VAR(23)="Rule #6  Target Code: S06.1X0?"
VAR(24)="IF TRAUMATIC CEREBRAL EDEMA WITHOUT OPEN INTRACRANIAL WOUND CHOOSE S06.1X0?"
VAR(25)="EPISODE OF CARE INFORMATION NEEDED"
VAR(26)="POSSIBLE REQUIREMENT FOR AN EXTERNAL CAUSE CODE"
VAR(27)="
VAR(28)="Rule #7  Target Code: N/A"
VAR(29)="MAP SOURCE CONCEPT CANNOT BE CLASSIFIED WITH AVAILABLE DATA"

Figure 14-46 ICD-10 Mapping Advice for a Sample Concept Id
Glossary

**Electronic Health Record**
An application used by medical organizations to track patient medical records and care.

**ICD Codes**
One of several code sets used by the healthcare industry to standardize data. The International Classification of Disease (ICD) codes are an international diagnostic coding scheme. In addition to diseases, ICD also includes several families of terms for medical-specialty diagnoses, health status, disablements, procedures, and reasons for contact with HCPs. IHS currently uses ICD-9 for coding and will transition to using ICD-10 on October 1, 2015.

**Office of Information Technology**
The organization within IHS that is responsible for developing and maintaining RPMS and related IT functions.

**Resource and Patient Management System**
A set of integrated software components that includes clinical, administrative, and financial functions.
## Acronym List

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Meaning</th>
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<tbody>
<tr>
<td>API</td>
<td>Application Programming Interface</td>
</tr>
<tr>
<td>DLL (dll)</td>
<td>Dynamic Linked Library</td>
</tr>
<tr>
<td>DTS</td>
<td>Distributed Terminology System</td>
</tr>
<tr>
<td>EHR</td>
<td>Electronic Health Record</td>
</tr>
<tr>
<td>ICD</td>
<td>International Classification of Diseases</td>
</tr>
<tr>
<td>IHS</td>
<td>Indian Health Service</td>
</tr>
<tr>
<td>KIDS</td>
<td>Kernel Installation and Distribution System</td>
</tr>
<tr>
<td>NDC</td>
<td>National Drug Code</td>
</tr>
<tr>
<td>OS</td>
<td>Operating System</td>
</tr>
<tr>
<td>RPC</td>
<td>Remote Procedure Call</td>
</tr>
<tr>
<td>RPMS</td>
<td>Resource and Patient Management System</td>
</tr>
<tr>
<td>SAC</td>
<td>Standards and Conventions</td>
</tr>
<tr>
<td>SNOMED CT</td>
<td>Systematized Nomenclature of Medicine-Clinical Terms</td>
</tr>
<tr>
<td>UI</td>
<td>User Interface</td>
</tr>
<tr>
<td>UNII</td>
<td>Unique Ingredient Identifier</td>
</tr>
<tr>
<td>VUID</td>
<td>VA Unique Identifier</td>
</tr>
<tr>
<td>XML</td>
<td>Extensible Markup Language</td>
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</table>
Contact Information

If you have any questions or comments regarding this distribution, please contact the OIT Help Desk (IHS).

**Phone:** (888) 830-7280 (toll free)
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