Healthcare Organization Services™

Professional and Organization Affiliations
Maintenance Process

CUSTOMER SUPPORT – TRAINING, IMPLEMENTATION AND SUPPORT DOCUMENTATION
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HCOS Overview

The IMS HCOS database provides the industry’s best knowledge base of healthcare organizations and affiliated professionals. Accurately reflecting the complex structure of the US healthcare market, HCOS is designed to help clients better understand professional-to-organization and organization-to-organization relationships.

The database details US healthcare organizations as defined by IMS class-of-trade including hospitals, medical group practices and nursing homes. It also documents the purchasing and contracting relationships of healthcare organizations to their corporate parent (integrated delivery networks, corporate owners, owner subsidiaries) and their buying organization(s) (GPOs, pharmacy providers, distributors).

Available with all health-industry standard identifiers, supporting a client’s data integration efforts, HCOS includes the links to IMS transactional sales data of DDD and Xponent. In addition to DDD, organizational identifiers include NPI, DEA, HIN (subscribers only), MPN and PHS. Professional identifiers include IMS ID, NPI, DEA, and ME number (AMA subscribers only).

- **Professionals** – Healthcare professionals who practice within the healthcare organization. Includes physicians and physician extenders (PAs, ARNPs, RNs), as well as pharmacists and administrative officers and medical directors.

- **Product Shipment** – DDD outlet location where product is shipped; sales data (DDD dollars & units) available. Organizations may include one or more DDD outlets.

- **Facilities** - Site level where each record represents a distinct healthcare organization legal business entity, such as a medical group practice or hospital.
• **Corporate Parent Level** – Organizations can be owned, managed or leased by, or have strictly a purchasing affiliation with an integrated delivery network (IDN), corporate owner or owner subsidiary.

• **Purchasing and Distribution Layer** – Each organization can have a purchasing, contracting or distribution relationship with one or more GPOs and distributors.

**HCOS – COMPREHENSIVE AFFILIATIONS COVERAGE**

The HCOS database comprises ~500,000 organizations and 1.1 million distinct professionals. HCOS provides comprehensive, timely reference information on hospitals, medical groups, long-term care facilities, outpatient surgery centers, imaging centers and home-health agencies. It includes 280,000+ links to DDD shipping locations (98-99% DDD-to-HCOS alignment) and more than 2.3 million professional affiliations that link to Xponent prescribing transactions.

In addition to provider affiliations, HCOS includes the name and title of more than 75,000 administrative decision makers at hospitals, nursing homes, corporate parents and buying groups.

The table below lists the counts of all organizations and professionals in the full HCOS data mart as of Q4 2009.

<table>
<thead>
<tr>
<th>HCOS Master Data Mart</th>
<th>2009Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Organizations</td>
<td>502,110</td>
</tr>
<tr>
<td>Total IDNs</td>
<td>776</td>
</tr>
<tr>
<td>Total Corporate Owners</td>
<td>1,856</td>
</tr>
<tr>
<td>Total Owner Subsidiaries</td>
<td>511</td>
</tr>
<tr>
<td>Total Buying Organizations</td>
<td>75</td>
</tr>
<tr>
<td>Total distinct professionals</td>
<td>3,502,338</td>
</tr>
<tr>
<td>Total distinct professionals with contact affiliation</td>
<td>75,814</td>
</tr>
<tr>
<td>Total distinct professionals with provider affiliation</td>
<td>1,158,335</td>
</tr>
<tr>
<td>Total Provider Affiliations</td>
<td>2,362,415</td>
</tr>
<tr>
<td>Total DDD Outlets Linked to an MII</td>
<td>280,229</td>
</tr>
</tbody>
</table>

**HCOS – DDD™ LINKS MAINTENANCE PROCESS**

HCOS reference information can be integrated with DDD™ sales performance data by using the DDD Outlet-to-HCOS Links. DDD Outlet numbers are shown within the HCOS relationship tables as part of the Business Detail Identifiers contained within the database.
DDD links are created and maintained by the IMS Outlet Database Management team. Familiar with the nuances of DDD, this team reviews new or changed outlet information and creates links or revises existing links to HCOS organizations. The DDD-to-HCOS organization update process occurs weekly.

The process involves matching the DDD Outlet IDs to HCOS IMS ORG IDs based on demographic details (name, address, city, state, zip). Additionally, the type of business (HCOS class of trade and DDD sub-category code) also is considered when creating the link. Because the DDD outlets represent “ship to” locations (such as a loading dock or hospital pharmacy), while HCOS organizations represent “front door” addresses, the matching work involves both automated and manual resolution.

More than one DDD Outlet may be linked to an HCOS Organization, but never the reverse. This is especially true for large hospitals, where DDD has “ship to” outlet locations for specific areas within the hospital campus while HCOS represents the hospital as a single business entity controlling all purchasing. For example, a DDD outlet with a subcat of H3 (outpatient clinic of a hospital) or H9 (PHS/340B designated sales) will be linked to the HCOS organization that is the hospital.

Links to HCOS organizations must be based on a unique, identifiable business at a specific address. In HCOS, no DDD links are created for those outlets representing an aggregation of disparate businesses, such as Multiple Doctors or ZIP Physicians. Examples of these types of DDD outlets, and how they are treated when integrating data using HCOS reference files, follow:

- DDD Outlets representing “Multiple Doctors” (subcats D1 thru D9) are linked to “Dummy” HCOS organization identifiers.
- DDD Outlets representing “ZIP Physicians” (outlet numbers ending in 199) are linked to “Dummy” HCOS organization identifiers.

To help clients decipher these aggregated outlets, IMS offers its DDD MD product that breaks down the Multi-doc or Zip Physicians to the individual entities at the transaction level. This information then is linked to HCOS.

For questions about DDD MD, contact IMS sales.

For questions about the DDD to HCOS links, contact the DDD Outlet Database Management team.
HCOS AFFILIATION MAINTENANCE PROCESS

Development of the HCOS database is ongoing because markets and providers continuously change, therefore HCOS maintenance occurs daily. The dynamic nature of the information makes estimating its accuracy difficult. Client trials in which HCOS data has been compared to competitive data sets determined HCOS to be ~85 percent accurate. This level of accuracy is based on numerous internal quality-assurance measures and field tests in head-to-head competition. Additionally, it is supported by a growing number of satisfied HCOS clients who have chosen IMS for the accuracy of the data.

The following outlines the HCOS organization-to-professional affiliations techniques currently used:

**Telephone Verification** - This is the most accurate form of affiliating professionals and involves a telephone survey, whereby a healthcare research analyst contacts a facility and speaks directly with an authoritative source to determine professionals affiliated with the organization. Analysts enter captured data into a proprietary front-end data-collection system.

Below are a few examples of the IMS HCOS Phoenix front-end data-entry system used during the daily professional and organizational affiliation process. This custom data-entry system, designed to meet HCOS-specific organization data-collection requirements, includes extensive data quality-assurance checks.

The following screen shot from Phoenix shows the initial view of the organizational profile for Facey Medical Group, a corporate owner of group-practice sites, as seen by the IMS Healthcare research analyst.
**Facility Name:** North Hills

**Address:** 5510 S. Fountain Avenue, Suite 120

**City:** Phoenix

**State:** AZ

**Zip:** 85018

**Phone:** (480) 833-2100

**Fax:** (480) 833-2101

**Website:** www.northhillspc.com

**Identification Information:**

<table>
<thead>
<tr>
<th>Facility ID</th>
<th>NPI</th>
<th>DFS#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1332255507</td>
<td>1262255507</td>
<td>DFS #1262255507</td>
</tr>
</tbody>
</table>

**Class of Trade:**

- Corporate Parent: Corporate Change - (Brand)

**Classification Type:**

- Corporate Parent

**Facility Types:**

- Corporate Office

**Service Offering:**

- Medical Services

**Physical Security:**

- No

**Financial Information:**

- Profit Type: Not Profit

**Clinical Statistics:**

- Bed Counts

- Total Beds: 100

- Licensed Beds: 100

- CNA: 80

- Nurses: 60

- Staffed Beds: 100

- Staffed Bed Days: 100

- Staffed Bed Days Per 1000: 100

**Notes:**

- Note: All data is subject to change and may not reflect current information.

- Contact Information: Name, Address, Phone, Fax, Email, Website.
The image below shows the relationship screen that maps the group practice sites that have a type of ownership relationship with corporate owner Facey Medical Group. Note that it shows in the Relationship column that these sites are owned (rather than managed, leased or affiliated strictly through purchasing) by the parent organization.

The Phoenix data-entry system has been designed to provide research analysts with the ability to create and maintain physician affiliations to organizations. The screen below shows the providers affiliated with Facey Medical Group – Mission Hills Office. In this example, each professional has been verified by a member of the IMS Content Operations Team, as represented in the Verify column by the green RT (Research Team) indicator.
**Claims Data** – IMS processes provider claims data to determine the IMS prescriber to whom the claim refers and the organization to which the provider is affiliated, based on address. Claims data involving large, multi-practice medical arts buildings require additional intelligence in order to affiliate professionals appropriately. For example, suite number and organization class of trade aligned appropriately with provider specialty distinguish claims information among multiple businesses within the same building and affiliate the right professional to the right practice location.

**Web Harvesting** – Internet research plays an important role in IMS’ professional-affiliation process. When authorized by approved sources at organizations, professional-affiliation data is collected from the Web site. Healthcare research analysts review sites for smaller group practices and enter data directly into Phoenix. For larger practices, IMS’ proprietary Web-harvesting process bulk-downloads professional data from a site, standardizes data format and automates provider recognition and cleansing to choose which IMS prescriber is referenced on the Web site. Additional care is taken to insure that organizations’ classes of trade and IMS prescribers’ specialties are compatible. Web harvesting has advantages but also limitations that require the research component. For example, the Web site of a corporate owner of a large medical group may list multiple practice locations and all affiliated physicians without distinguishing specific sites where physicians practice.

**Automated Matching** – IMS processes more than 5 million professional addresses against the HCOS repository, identifying address links that indicate potential affiliations. Reference files used as the source for professionals include the IMS Health Care Professional (HCP) database, AMA, DEA and state license files. To process data accurately, physician specialty and organization COT must be considered for compatibility.

**ADDITIONAL SERVICES - TARGET FILE SCRUBBING**

**Professional Affiliations**
To make the HCOS professional-affiliations data as meaningful and relevant as possible for each client, IMS provides services geared to scrubbing the retail call physician/professional file or target list to identify group-practice affiliations. This allows the client to assure 100 percent alignment of all top prescribers to groups. Additionally, this incremental service assures maximum HCOS affiliations data utility because 100 percent of a target list is reviewed and scrubbed for accuracy.
**Organizations/Accounts**

With regard to a client’s current view of its organizational customers, IMS can align the client customer file to HCOS and maintain its professional and parent-child relationships as well as class of trade. This matching service significantly enriches the customer master data with source-verified profile and relationship information, critical to assure that a client’s most important accounts and their professional affiliations are aligned accurately and maintained subsequently to the HCOS database.

The matching services can include a de-duplication of the customer master. This involves processing the client’s customer master to identify potential duplicates based on levels of record similarity in terms of demographics. Clients then review the customer master to determine if the records are indeed duplicates.

Another option involves primary research for records that remain unmatched, following automated and manual processing. This entails a healthcare research analyst using various sources and methods, including source verification, to determine the details about an organization, including name and demographics, class-of-trade and corporate parent.

**HCOS IMPLEMENTATION AND SUPPORT - TRAINING**

Within five (5) business days following shipment of the initial HCOS database deliverable, a member of the HCOS Client Support team contacts the client to schedule a Web-based training session. The client may invite as many client employees as they feel appropriate to this Web-based training session.

To ensure maximum benefit from the training, the IMS Bedford Training Team will include the Client Services Account Coordinator, an IT representative and a member of the Content Operations team.

During the training, the deliverable will be reviewed, including:

- Data model
- Data content
- Data queries
- Potential applications
- Best practices.

Clients are directed to contact the Account Coordinator should any additional questions arise concerning the database, data structure or the organization information.
HCOS IMPLEMENTATION AND SUPPORT - DATA INQUIRY PROCESS

To help maintain HCOS organizational and professional affiliations, IMS provides a proactive data-inquiry service designed to facilitate and encourage client notification of questions about data and potential data discrepancies requiring validation.

The HCOS data-inquiry service gives clients access to IMS Bedford’s extensive research staff and IT capabilities. IMS encourages clients to submit questions about the data. Discrepancies are fully researched by IMS, and results of findings are returned to clients as quickly as possible, often within 24 hours. IMS can provide this service because of its dedicated resources that specifically focus on organization and professional-affiliation data.

Client questions are electronically directed to IMS Customer Support using an IMS data inquiry Excel-based form. Customer Support then determines whether the inquiry can be best addressed by a healthcare research analyst or IT professional. IMS Bedford’s team has the health-industry knowledge and training to address questions promptly and accurately. If the question requires research, a healthcare research analyst calls the organization in question, speaks with an authoritative source, validates the information and updates the IMS data repository.
IMS Bedford welcomes client data inquiries and requires that such inquiries be provided by a designated client representative using the HCOS Data Inquiry template.

Each database deliverable includes this Microsoft Excel HCOS Data Inquiry template (see embedded document, HCOS Data Inquiries Form_2010), outlining the information required to properly research an HCOS content-related question. Data inquiries are directed to the HCOS Client Data Inquiry mailbox and receipt of the inquiry is acknowledged within 24 hours. The client will be contacted if further clarification of their question is needed. Turnaround time for resolving data inquiries varies depending upon the volume of questions and nature of the inquiry; please reference the chart below. Results will be returned to the designated client representative. Data changes made prior to the close of the data will be reflected in the next client deliverable.

### HCOS Data Inquiries (i.e. provider affiliations to organizations, corporate parent, class-of-trade)

<table>
<thead>
<tr>
<th>Number of verification calls</th>
<th>Number of business days for Turnaround time</th>
<th>Fee</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>For 1-10 Records Inquiries</td>
<td>5</td>
<td>No Charge*</td>
<td>up to 100</td>
</tr>
<tr>
<td>For 11-20 Records Inquiries</td>
<td>10</td>
<td>No Charge*</td>
<td>up to 100</td>
</tr>
<tr>
<td>For 21-30 Records Inquiries</td>
<td>15</td>
<td>No Charge*</td>
<td>up to 100</td>
</tr>
<tr>
<td>For 31-50 Records Inquiries</td>
<td>20</td>
<td>No Charge*</td>
<td>up to 100</td>
</tr>
</tbody>
</table>

For 50+ Records Inquiries, a plan of action regarding turnaround time will be provided within 5 Business Days.

*NOTE: Service offered as part of database product licensing.

<table>
<thead>
<tr>
<th>Verification projects that involve more than 100 records (based on 2 FTEs)</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>For 100-300</td>
<td>$400 - $1,200</td>
</tr>
<tr>
<td>For 301-400</td>
<td>$1,204 - $1,600</td>
</tr>
<tr>
<td>For 401 -500</td>
<td>$1,604 - 2,000</td>
</tr>
<tr>
<td>etc.</td>
<td></td>
</tr>
</tbody>
</table>

### Verification projects that involve more than 100 records (based on 4 FTEs)

<table>
<thead>
<tr>
<th>Verification projects that involve more than 100 records (based on 4 FTEs)</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>For 100-300</td>
<td>$500 - $1,500</td>
</tr>
<tr>
<td>For 301-400</td>
<td>$1,505 - $2,000</td>
</tr>
<tr>
<td>For 401 -500</td>
<td>$2,005 - $2,500</td>
</tr>
<tr>
<td>etc.</td>
<td></td>
</tr>
</tbody>
</table>
For more information, contact HCOS Client Support at 1-888-582-2149.