

data sheet **ORACLE HEALTHCARE TRANSACTION BASE**

The central challenge facing the global healthcare marketplace today is the imperative to control costs and simultaneously improve quality of care. Increasingly healthcare organizations are recognizing that capturing more data and expanding access to that data in a secure environment are vital to meeting the twin goals of cost containment and quality improvement. The Oracle™ Healthcare Transaction Base (HTB) helps healthcare organizations achieve these goals by providing a foundation for interoperability and integration of existing and new systems.

Oracle Healthcare Transaction Base

Oracle's Healthcare Transaction Base (HTB) is a Service Oriented Architecture that supports the integration, development, and operation of a full spectrum of healthcare applications. The platform couples a comprehensive, standards-based data repository with a robust set of integrated services for data normalization, customer-defined security and auditing, and business process/workflow. This powerful combination makes meaningful data consolidation, rapid application development, and genuine system interoperability possible. With Oracle HTB, the full spectrum of healthcare organizations— from hospitals and insurers to government bodies and public health agencies – can more effectively integrate, manage, deliver and display information to improve the planning, provision, and financing of care.

HTB functionality includes:

- x Administrative and Clinical Business Services
- x Core Application Services
- x Domain-specific Architecture
- x Business Intelligence

The Business Intelligence functionality in HTB is described in a separate data sheet titled: Oracle Healthcare Intelligence.

Administrative and Clinical Business Services

HTB offers comprehensive storage for the persistence of healthcare clinical and administrative data. The platform's Application Programming Interface (API) and messaging services provide support for select business services. More Specifically, the platform's design includes API optimizations that reflect typical usage patterns, which in turn supports the development of applications on top of HTB. Alternatively, messaging functionality supports the persistence of data received from external healthcare systems through HL7 v3 messages. Furthermore, outbound HL7 messages from HTB to external systems are supported in select instances. The specifics of this functionality are outlined below by business service.

Enterprise Master Person Index (EMPI) Services

HTB Enterprise Master Person Index (EMPI) Services provides a layer of basic and advanced interfaces that include duplicate identification, prevention, and management, as well as linking functionality to associate related person records. The components are configurable, providing the building block for a design of a comprehensive custom solution. Furthermore, HTB integrates with Identity System's solution (formerly Search Software America) to enable usage of third party matching technologies. Alternatively an enterprise's existing EMPI investment can be leveraged utilizing HTB's messaging services. Under this scenario, HTB is the recipient of the external EMPI's creating, updating and matching processes.

Organization Management

HTB's Organization Management functionality supports representation of a customer's internal organizational hierarchies as well as the network of organizations that interact with the implementing enterprise. Furthermore, HTB's approach is compatible with the organization management model for Oracle's Human Resource Management Services, which serves as a foundation for the entire eBusiness Suite.

Order Management

HTB provides order management support for critical healthcare domains including pharmacy, radiology, cardiology, laboratory, dietary, and therapies. These services support the creation, update and retrieval of clinical observations or results, orders, and other clinical constructs that are the foundation of a clinical order management solutions. The HTB API is designed to optimize performance for typical order management transactions, while the platform's messaging capabilities include inbound and outbound messaging support for similar order management functionality.

Clinical Documentation

Clinical Documentation functionality supports the creation of structured documents such as a History and Physical exam or a Discharge Summary. The clinical documentation functionality in HTB is derived from HL7's Clinical Document Architecture (CDA). The focus of the functionality is to provide the services needed to build Clinical Documentation solutions with HTB. These Services support the persistence of clinical documentation data sent from external healthcare systems as HL7 messages, and from clinical documentation data persisted using clinical applications built on top of HTB. In addition, these Services support the retrieval of clinical documents and observations or results, orders, and the creation and maintenance of clinical constructs necessary to build clinical documentation solutions.

Clinical Public Health Information

HTB supports persistence of public health clinical data such as orders and observations, and documentation of public health cases and investigations. Persistence of public health data sent from external healthcare systems via HL7 messages is enabled. Alternatively, such data can be persisted and retrieved through healthcare applications built on top of HTB. This support for the retrieval and reporting of public health information includes Notifiable Conditions and Individual Case Safety Reports (ICSR).

Core Application Services

HTB provides a suite of foundational services that support development of a wide range of healthcare domain applications. The specifics of these services are detailed below.

Messaging Services

HTB Messaging Services are based on HL7 Version 3 messaging standard and are central to the integration of data from disparate third-party systems. The inbound message processor, in conjunction with the HTB API, supports the consistent storage of data originating from legacy systems. The outbound message processor enables communication from HTB to these external systems. These Messaging Services also support managing external cross-referencing identifications, mapping and domain validation via Oracle HTB Terminology Services, and version tracking. Customization of communications from HTB to external systems is supported through integration with Oracle® Workflow services.

Terminology Services

Because terminologies are integral to nearly every aspect of healthcare operations, their maintenance is a critical business function. The existence of competing and overlapping standards compounds the management challenge and often present a significant hurdle to interoperability. HTB's Enterprise Terminology Services (ETS) provides tools for managing these terminologies and their associated complexities. The solution supports the storage and maintenance of terminology concepts and their corresponding description as well as any relationships between ETS concepts. Furthermore, this support extends to both standard and homegrown terminologies. Advanced support – tailored loaders and interfaces – is provided for the following industry terminologies: SNOMED CT, ICD-9-CM, ICD-10, UB92, DRG, MDC, LOINC, CPT-4, HCPCS Level II, ICD-10, and FDB NDDF-Plus. Additionally, an unlimited number of other standard or custom terminologies can be loaded and maintained in ETS. The solution also supports the definition of cross-mappings between terminologies. Similarly, both industry-standard and custom terminology cross maps can be accommodated.

Security Services

HTB leverages Oracle's proven database security and augments this technology with capabilities that reflect the unique needs of the healthcare industry. The platform relies on responsibility-based access, single sign-on, authentication and authorization features, as well as data encryption. In addition, HTB provides a flexible solution that supports implementation of varied models for patient consent management. Organizations can enforce an opt-in or opt-out approach to consent management and adopt higher privacy thresholds for accessing more sensitive clinical data such as mental health or chemical dependencies services. Furthermore, HTB audit tables enable detailed tracking of data access.

Domain-specific Architecture

HL7 Version 3 Reference Information Model (RIM), which provides comprehensive, standards-based representation for healthcare business objects, serves as the architectural framework for

HTB. This logical view of healthcare information exposes an underlying table structure that is embedded in the Enterprise Data Model used by the Oracle E-Business Suite. The result is operational consistency across the full range of processes used to run a healthcare enterprise that in turn provides development organizations with a highly flexible foundation on which to build the full spectrum of next generation healthcare applications.

Performance

The design of HTB's services reflects an emphasis on performance. More specifically, the API supports the retrieval and persistence of data with a minimum of database round-trips.

Versioning

HTB's versioning capabilities support generating a new version of a business object anytime one or more attributes change. These versioning capabilities enable retrieval of both the current and previous versions of the requested business object. This flexibility is complemented by API optimizations that reflect typical query access paths, which are more likely to call for retrieval of the current version. Point-in time retrieval is also supported for certain transactions and their related business objects.

Logging

HTB Services include the capability to log messages to support debugging activities by customers and Oracle Support. Ready access to this information can be critical to the timely resolution of debugging issues at customer sites.

KEY BENEFITS

Healthcare Organizations

- x□ Achieve enterprise interoperability and integration:
 - Comprehensive storage for healthcare data*
 - API and messaging capabilities to support data exchange and re-use*
 - Standards-based framework*
- x□ Leverage existing IT investments:
 - Inbound and outbound messaging capabilities*
- x□ Provide secure data access:
 - Proven database security technologies*

Partners

- x□ Gain competitive advantage with interoperable and integrated applications:
 - Solutions to support scalability and security requirements*
 - API design based on industry standard and fine-tuned for performance*
 - Inbound and outbound messaging capabilities*
- x□ Accelerate application development:
 - Standards-based architecture*
 - Suite of application services*
- x□ Access next generation technologies:
 - Industry-leading technology to support and enhance all platform layers*

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