

Oracle *at* Work

with Childrens Hospital Los Angeles

With the Oracle7 database and Oracle development tools, Childrens Hospital Los Angeles has created a facility-wide patient care scheduling and tracking system that also serves as a powerful clinical data warehouse.



ChildrensHospitalLosAngeles

Six years ago, Childrens Hospital Los Angeles (CHLA) decided to build a hospital-wide, multiuser system that could track patient demographics and schedule appointments. Upon reviewing the existing departmental databases and other alternatives, CHLA determined that only the Oracle7 database could provide the interconnectivity, the flexibility, and the powerful front-end tools needed to consolidate and provide access to the wealth of information dispersed throughout the hospital. The Oracle system, running on Compaq hardware, has since evolved into a rich clinical data warehouse capable of meeting the original objectives and much more.

Developing a Rich Data Warehouse

"Hospital staff members needed answers for all kinds of questions, but had no one place to actually look up the data," comments Dr. Mark Citron, manager of Oracle development at Childrens Hospital Los Angeles and associate professor at the University of Southern California. Writing ad hoc queries against the proprietary database on the hospital's mainframe was next

to impossible, so Dr. Citron and his developers initially wrote a batch interface to link the mainframe database with the Oracle system. This enabled users anywhere in the hospital to view demographic data that was originally accessible only by individual departments, or not at all.

Today the Oracle clinical data warehouse stores a multitude of demographics, including patient family relationships, insurance information, and department-specific comments for more than 292,000 patient records—accessible in real time. It also houses information on more than 500 referring physicians, a formulary for 8,500 medications, diagnoses for 24,000 patients; immunization records for 3,800 patients; protocols, procedures, and observations for use by department; and clinical episodes of care, tracking diagnosis, onset, and follow-up.

Dr. Citron says that the Oracle/Compaq combination has produced an extremely cost-efficient system that serves from 60 to 70 simultaneous users, continually amazing the hospital staff on the amount of value received from the original investment.

User Empowerment, Ease, Productivity

The Oracle data warehouse benefits a tremendous range of users, from appointment schedulers and business administrators to doctors and clinical researchers. The ease of rapidly building customized applications with Oracle development tool suites—

Business Profile

Named one of the top five pediatric facilities in the United States by U.S. News & World Report, Childrens Hospital Los Angeles offers the largest U.S. pediatric emergency transport system and LA County's only Level I Trauma Center devoted solely to children. Each year, the non-profit, 318-bed hospital founded in 1901 supports more than 140,000 inpatient and outpatient visits for children and adolescents to age 18.

Solution Snapshot

Primary use:

Hospital-wide appointment scheduling system and clinical data warehouse that tracks everything from patient demographics to clinical research data

Hardware:

Compaq ProLiant 4500 dual processor system, Compaq SystemPro XL, Compaq ProSignia 300s, approximately 800 PCs

Oracle products:

Oracle7™, SQL*Net® Developer/2000™, Oracle Designer/2000™

Benefits

- Increases productivity
- Assists the hospital with all aspects of management, including staffing levels, salary planning, and performance feedback to employees
- Enables clinical researchers to track information essential to their research
- Speeds the hospital certification process

Designer/2000 and Developer/2000—has enabled CHLA to create almost 40 forms to serve the specialized needs of these diverse users. More than 55 standard reports provide valuable insights into almost all aspects of hospital administration, including the costs associated with treating certain diagnoses.

The appointment-scheduling function via Oracle now enables clerks to enter information in real time instead of saving complicated data entry until the end of the day. Unlike the rigid scheduling systems that preceded it, the flexible Oracle7-based system has been adapted to meet the hospital's precise needs.

And because this data is accessible to everyone, there's no time wasted in trying to figure out when, where, and by whom patients were last seen within the 30 CHLA clinics. The system also automatically generates letters reminding patients of their appointments, explaining what to do if they miss one, and alerting physicians of missed appointments.

"We found that Oracle is the jack-of-all-trades. It can do things that existing applications can't," says Dr. Citron. The hospital's

mainframe payroll application, for example, lacked front-end editing and checking, so CHLA used the Oracle Forms™ component of Developer/2000 to build a front end that allows payroll staff to review employee timecards for information such as cost center accuracy, vacation accruals, and overtime earnings. The resulting database for CHLA's 2,700 employees enables managers to discover how much overtime their departments worked, when employee visas are about to expire, and when each employee's next performance review, pay increase, or bonus is appropriate.

Assisting Clinical Research

The Oracle database also supports CHLA's internationally recognized research program and clinical researchers at the hospital who need to know how effective particular protocols are, what the distribution of diagnoses are, and how the treatment protocols are working. The Oracle7 database also runs a comprehensive hemophilia data collection so that institutions from California, Nevada, or Hawaii can access this information by telnetting or dialing in to the system.

Dr. Tom Coates, a clinical researcher and hematologist, first brought Oracle to Childrens Hospital Los Angeles to track

the outcomes of cancer. Since then, he and Dr. Citron have created a unique data model on the Oracle7 database that reflects the way disease processes happen to people. Dr. Coates explains that no other existing data models can aggregate episodes of care within episodes of disease, which is necessary to determine the cost of its treatment.

"We want to design a database that lets us determine medical as well as financial outcomes of care to reduce costs," says Dr. Coates. To that end, they have built a research protocol tracking piece into the database to enable Dr. Coates to see patients and record key variables that are necessary for tracking the medical outcome of these patients.

With support from Dean Campbell, vice president of information and patient services, Oracle will continue to shape CHLA's future as the hospital explores wireless communications for physicians anxious to transport the Oracle functionality. CHLA is also looking at an Oracle-connected World Wide Web server to store information for employees and Internet users globally.

ORACLE®

Copyright © Oracle Corporation 1996
All Rights Reserved
10072.0596

Oracle Corporation
World Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Worldwide Inquiries:
415.506.7000
Fax 415.506.7200
<http://www.oracle.com/>

Oracle Corporation is the world's largest supplier of software for information management, and the world's second-largest software company. With annual revenues of more than \$3.5 billion, the company offers its database, tools, and application products, along with related consulting, education, and support services, in more than 90 countries around the world.

Oracle and SQL*Net are registered trademarks, and Oracle7, Designer/2000, Developer/2000, Enabling the Information Age, and Oracle Forms are trademarks of Oracle Corporation.

All other company and product names mentioned are used for identification purposes only, and may be trademarks of their respective owners.