



A breakthrough collaboration between the **University of Utah**, AmerisourceBergen, Owens & Minor, and Cerner places the 15-facility health system and clinics on the leading edge of pharmaceuticals, medical-surgical supplies and materials flow. Processes and technology are rapidly coming together under a visionary plan to drive major cost savings, improve patient outcomes and upgrade safety.

Engineering the Supply Chain of the Future

That unmistakable Utah swoosh you hear isn't a downhill skier. It is a race to tomorrow in the world of patient care, spearheaded by the University of Utah Hospitals and Clinics in collaboration with AmerisourceBergen, Owens & Minor and Cerner.

Better patient outcomes, greater patient safety and targeted savings of \$24 million over its first three years—or about 9% of expenses—should flow from this innovative healthcare pursuit to achieve faster, safer and cheaper procurement, distribution and use of pharmaceuticals, medical-surgical supplies and materials.

A cohesive far-flung network

The seamless, smart pipeline will serve four primary facilities based in Salt Lake City—the 430-bed main

“End-to-end supply chain revamp is seen saving \$24 million, or 9% of Utah's \$270 million in expenditures over three years. New processes are integrating with automation technologies, clinical information and inventory management systems, and decision support tools.”

University Hospital, the 100-bed University Neuropsychiatric Institute, the 56-bed Huntsman Cancer Hospital, the 25-bed University Orthopedic Center—as well as a far-flung network of 11 large ambulatory clinics located along the Wasatch Front in Salt Lake Valley. The main campus is a hotbed of high-stakes medicine, acting as the regional burn, cancer and neurosurgery centers, with many patients flown here from five neighboring states. The clinics alone fill 1.3 million prescriptions a year.

Innovative flexibility in partnering and measuring results

The sweeping changes represent a pioneering spirit by the senior administration of the University of Utah's Health System, not only in setting new benchmarks for healthcare practice but also in flexibility in partnering with and measuring results of strategic business partners. The University used Computer Sciences Corporation, headquartered in El Segundo, Calif., as a consultant to craft and evaluate bids on several core services over an 11-month period. The services included pharmaceuticals, medical-surgical, laboratory, radiology, nutritionals and disposables, and technology.

“We wanted to move away from the traditional vendor relationship and find a single source who would be at risk in helping us redesign our supply chain,” said Jim Jorgenson, RPh, MS, Director of Pharmacy Services, University of Utah Hospitals and Clinics, and Associate Dean for Pharmacy, University of Utah College of Pharmacy, Salt Lake City. “We'd been kicking this idea around our health system for three years under Dan Lundergan,” who is Associate Administrator of the hospital and executive sponsor of this project.

“They knew some savings could be implemented soon such as reduced distribution fees, but others such as installing automation or perpetual inventory systems could take months,” observed Phil Klein, a Senior Consultant with the AmerisourceBergen division Pharmacy Healthcare Solutions, who serves as the on-site project manager and the University of Utah's primary contact with the wholesaler.

Automated perpetual inventory

One of the University's most dramatic upgrades will occur through AmerisourceBergen's comprehensive supply chain management software product—Dimension 21. Dimension 21 will track inventory for inpatients as well as for most of the health system's 11 retail clinic pharmacies,



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which order and receive pharmaceuticals directly from the wholesaler. Its software will interface with AmerisourceBergen's AutoMed WorkPath software, barcode-driven FastFind carousels, FastFill unit-dose packagers and Omnicell unit-based cabinets at Utah's hospitals, and with AutoMed R400 and R800 automated dispensing machines at its clinics. The software will automatically decrement until it reaches a reorder point and recommends a purchase order based on what was dispensed, dramatically reducing the need for human intervention into the supply replenishment process.

Orders flow immediately to AmerisourceBergen, which checks for in-stock product availability and empowers Utah to alter any order. The software concurrently confirms pricing. "Last year, Utah alone had a quarter-million dollars of price corrections in just what we found. Now we'll be able to watch every single invoice," stated Mr. Klein, who noted, for example, Utah's purchase eligibility for some Public Health Service 340B contract prices, which are lower than GPO prices. "Now weekly true-outs will be a simple matter of a tab click," he added.

"This takes all manual steps out of our inventory management," noted Mr. Jorgenson. "No more walking shelves trying to guess what's low, and no more 'want' books." He added, "Until this we had no way to tie our purchases to our dispenses. We had no way to reconcile or know what was reaching patients or being wasted or walking out of the organization."

Dramatic gains through technology and staffing

Further improvements will accrue through technology use, leaner pharmacy staffing and better medication distribution to patients, Mr. Jorgenson said. For example:

- Medication carousels will save 30% on dispensing time, reduce errors and improve security.
- Computerized physician-order entry [CPOE] will reduce medication errors by 12%, and improved dispensing and medication administration will weigh in with another 12% to 13% reduction. "This project sets up the key building blocks we need to move forward with CPOE, and develops what we need for bar coding and electronic MARs [medication administration records]," said Mr. Jorgenson.

Redeploying pharmacy staff will eliminate the hiring of six full-time equivalents (FTEs) in 2005 without stressing existing staff. "This isn't just a one-time saving, but an annuity value," he added, noting that 60% of the health system's 210 FTEs are pharmacists.

A metrics dashboard system will document all financial and clinical improvements, each with its own budgets, scorecards and monthly tracking requirements.

Pharmacy freer to focus on clinical values

"By leaving the distributive aspects of medication delivery to us, Jim can concentrate on his core competency of clinical services and patient outcomes, demonstrating greater value that way," said Joe D'Agui, Senior Vice President of Sales and Marketing, Pharmacy Healthcare Solutions.

Both AmerisourceBergen and Owens & Minor pledged ongoing labor resources to the project for its initial three years, which began in February 2004. The drug wholesaler, for instance, assigned Mr. Klein as Senior Consultant, plus a drug buyer and a data management expert to Utah. "Senior consultant pharmacists aren't so plentiful, and I have a long history in bar codes and medication administration," Mr. Klein said. "But we've always understood we wouldn't be locked in to a certain type of individual because needs change. We might provide a 340B expert, or a charge-capture expert or an indigent recovery expert as our relationship evolves."

"AmerisourceBergen is front-loading resources into this project to put a full-court press on savings in the early stages," he added. "Jim will get the technology, and we'll create a much better drug delivery system than any of us ever could have done alone. This takes leadership and an organization with vision to commit to this. It's the most exciting thing that's ever happened in our careers."

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