



# Why Didn't I Think of That... ?

## Fax Server Technology: A Cost-Effective Solution for Improving Pharmacy Workflow

### COMMON TO ALL HEALTH-SYSTEM PHARMACIES

is the challenge of meeting day-to-day operational challenges amidst staffing shortages, budget cuts, and a growing hospital census. Sharp Memorial Hospital, a JCAHO-accredited, 330-bed tertiary-care facility and the flagship hospital of the Sharp Healthcare System in San Diego, California, addressed this issue in an innovative way. Decreasing both the number of missing medications and "medication turnaround" time (defined as the time it takes to process an order and deliver

### The Problem Defined

The pharmacy department at Sharp Memorial Hospital operates one central pharmacy and three satellites and provides after-hours support for two adjacent hospitals. This decentralized pharmacy model, which utilizes automatic dispensing cabinets to deliver medications at the point of care, was identified as successful from both a customer service and a clinical perspective. Nonetheless, we identified that such a model contributed to an inability to share workload among the separate satellites and adjacent hospitals. Particularly during times of high volume or staff absence, this resulted in delays in medication order processing.

To meet new regulatory requirements and promote a safer patient care environment, the pharmacy had upgraded its automatic medication cabinets and made the transition from unrestricted access of medications to the "profile" system. Because access to medications was now restricted until pharmacist review, the "bottle-neck" in the distribution process became even more apparent. It didn't take long before the nursing and pharmacy departments began a passionate discussion on how to improve customer service and medication turnaround time.

### Creating the Business Case for New Technology

We examined the process of receiving orders, which relied on traditional methods of pneumatic tube, courier pickups, and fax machine (sending and receiving). Multiple methods for receiving orders resulted in orders being lost or misplaced, phone calls for missing medications, and staff frustration.

Shannon J. Johnson, Information Systems Pharmacist at Sharp Memorial Hospital, posed the question, "How can we gain the overflow mechanism inherent in a centralized pharmacy

model with the customer and clinical service benefit of a decentralized model, while maintaining point-of-care medication distribution?"

A document imaging and management system appeared to be the solution. Such a system would capture a digital image of the handwritten order and quickly route it to an electronic "in box", viewable from any computer desktop. By replacing the other methods of order transport, we gain the ability to share workload, decrease confusion by unifying the process, add accountability through a readily retrievable archived image, and preserve the benefits of decentralized distribution and clinical services.

Commercially available products like Pyxis Connect or Omnilink from Omnicell can provide a document imaging and archival system specific to pharmacies. However, since the hospital was anticipating implementing CPOE system-wide in the future, we looked for a solution that would bridge that development. To share costs, we looked for a non-pharmacy-centric solution that could be utilized by other departments in addition to pharmacy. One department in particular was receiving upwards of 500 faxes daily from physicians' offices throughout the region. To meet this workload required a dedicated courier to transport faxes from 6 fax machines to claims processors. Because these paper faxes are considered a legal part of the medical record, they also were required to be archived and stored for seven years. All of this represented an estimated annual cost of over \$80K per year.

A search began for vendors of fax server technology that would meet the needs of both departments, and after a thorough market analysis, Captaris' RightFax was chosen as the software platform to manage the incoming images. A key factor was their relationship with a certified reseller and integrator, Instant InfoSystems. Through onsite consultations,

**BY REPLACING TRADITIONAL METHODS OF DELIVERING HARD COPY PHYSICIAN ORDERS TO THE PHARMACY WITH FAX SERVER TECHNOLOGY, PHARMACIES CAN REDUCE MEDICATION TURNAROUND TIME BY 50% AND MEET REGULATORY REQUIREMENTS FOR DOCUMENT ARCHIVING AND RETRIEVAL.**

the medication) were major goals of a recent performance improvement project undertaken by the pharmacy department. By replacing traditional methods of delivering hard copy physician orders to the pharmacy with fax server technology, pharmacies can reduce medication turnaround time by 50% and meet regulatory requirements for document archiving and retrieval.

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which looked at the uniquely different workflows within the various departments, Instant InfoSystems project manager Ken Anaya developed a custom hardware and software configuration to meet our specific needs. Taking the project to completion, they facilitated the hardware purchase, installation, configuration, onsite training, and continue to provide ongoing software support for our information systems department.

While cost to the user would vary depending on hardware and software features, number of licenses and server space, the cost can range from \$20,000 to \$35,000. There are also nominal recurring support costs from the vendor and telephone company for added phone lines. From our comparison to similar solutions, we found that the RightFax solution was more cost-effective, which made it easier to justify to budget-conscious hospital administrators

**Operational Efficiencies Realized**

Once the fax server was installed and configured, all that was required to implement the new process was pre-programming of the nursing-unit fax machines to dial the fax server computer instead of the fax machine in the pharmacy. Capable of receiving up to 21 incoming lines at once, this computer receives faxes and routes them to “in boxes” and can even label an order “STAT” for more immediate processing by pharmacy. Whereas before, hard copies of physician orders could sit in the nursing unit “out box” for up to an hour awaiting the next round by the courier, orders are now received in less than 30 seconds from the time the send button is pressed on the transmitting fax machine.

“We receive a steady stream of orders now, as opposed to waiting for the next courier run,” reports Johnson. “Because each satellite’s in box can be viewed from any computer ter-

minal, pharmacists can share orders among the satellites and visualize real-time workload. This not only helps reduce medication turnaround time, it also allows pharmacists to leave the pharmacy when necessary to engage in patient care activities, without impeding medication distribution.”

The nursing staff notices the difference as well. Because the orders are archived with patient name and account number, the images are readily retrievable. In addition, the pharmacist records their initials on the images so that there is accountability regarding the order review process for future retrieval. Refaxing of orders is virtually non-existent, and the pharmacy meets the California regulatory requirements that copies of orders be maintained within the pharmacy for three years.

Prior to the fax server, the mean turnaround time for routine medication orders was 42.7 minutes. After implementation of the fax server, this turnaround time decreased to an average of 21 minutes, which is a reduction of 50%. The processing of “STAT” medication orders has also improved to an average of 4 minutes.

The cost of the fax server technology was also justified based on labor savings shared between the two departments in the organization, including office staff time as well as nursing and pharmacy time spent on missing orders and delayed

medication turnaround time. Perhaps the greatest benefit is to the patient, who now can receive medications in a more timely manner.

The application of this fax server technology has reduced calls for missing medications, improved nursing and pharmacy job satisfaction, addressed the variability in workload volumes, improved staff utilization, and provided an archival system that meets regulatory requirements in a cost-effective manner. In addition, because this technology is not limited to pharmacy applications, other departments and units can share the benefits. **R&P**

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**PERHAPS THE GREATEST BENEFIT IS TO THE PATIENT, WHO NOW CAN RECEIVE MEDICATIONS IN A MORE TIMELY MANNER.**

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