



# How Technology Solutions Can Impact Nursing Retention

## EXECUTIVE SUMMARY

- ▶ In the high-tech industry, technology is at the forefront of almost all innovation. In health care, things move a little slower.
- ▶ A look at several large, as well as small, diverse organizations provides a snapshot of technology and its effect on nursing retention.
- ▶ Electronic medical records/computer provider order entry, communication via technology, facility design, staffing software, and a nursing innovation center are examined.



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any statistics/metrics to support what has been implemented?

### Electronic Medical Records/Computer Provider Order Entry

Children’s Hospital of Orange County (CHOC) is a regional health system which includes a main facility in Orange, CA, with 232 beds, a hospital-within-a-hospital in Mission Viejo, and five community clinics. Within the last couple of years they have automated approximately 70% of their medical record system including the implementation of computerized provider/physician order entry. Dana Bledsoe, Vice President of Patient Care Services/Chief Nursing Officer, stated their primary goal was to have an effective strategic partnership internally with the chief information officer, and the chief medical officer, to advance the practice of patient safety using technology and thus transforming the delivery of patient care.

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**T**ECHNOLOGY. IS THIS THE be-all and end-all for the future? In the high-tech industry, technology is at the forefront of almost all innovation. In health care, things move a little slower. And this can be a good thing. Let’s take a look at several large, as well as small, diverse organizations and see if indeed technology has an effect on nursing retention. Are there

They call their electronic record CUBS (connecting users, building safety), redesigning it by workflow. All of which was led by the front line or end users: staff nurses and nursing managers. A great deal of time and effort, both vertically and horizontally, went into changing their environment. Within the clinical documentation, they have included pain scale data and now can “bundle” required documentation of care (D. Bledsoe, personal communication, January 23, 2008).

What have been some of the outcomes of CHOC’s advances in communication based on technology? They have seen a significant reduction in verbal orders by physicians (95.3% of orders are entered by physicians); they have also seen a significant increase in signed-off orders. More importantly, they have reduced time for the first pharmacy review (new patients) from 96 minutes to 13 minutes. They have been named as one of the Best Places to Work by the *OC Metro* magazine. CHOC is one of only eight hospitals in the nation to be named to the Leapfrog 2007 Top Hospitals List for patient safety and quality of care. They also were awarded the Excellence in Patient Safety & Health Quality Award and most recently the Bronze Level CAPE Award (California Awards for Performance Excellence) from the California Council for Excellence. CHOC is the only children’s hospital in California to ever earn this distinction and the only Orange County-based organization honored this year (D. Bledsoe, personal communication, January 23, 2008).

Lucille Packard Children’s Hospital at Stanford in Palo Alto, CA, recently (November 2007) implemented their new electronic health record (EHR) and computer provider order entry (CPOE) programs as well. Jill Ann Sullivan, MSN, RN, Vice President of Hospital Transformation, had an integral role in this implementation. She and her team (including staff nurses) spent over a year analyzing processes and workflow from patient admission to discharge. Their goal was to create a best practice environment to improve patient care utilizing this technology (J. Sullivan, personal communication, February 7, 2008).

During the implementation phase at Lucille Packard, the transformation team spent extra time coaching the older nurses. There was tremendous support from senior leadership. When the systems went live, 90 to 100 “super users” were out on the units and available to support the staff. Hence, the transition went very smoothly (J. Sullivan, personal communication, February 7, 2008).

Thus far there have been some significant outcomes: (a) One of the many challenges was implementing the EHR in the critical care areas, due to the

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usage of flow charts. By analyzing this process thoroughly, they were able to create a report design that depicts all of the pertinent data into one view. (b) The medication turnaround time was shortened, as well as the lab turnaround time. (c) Now, 93% of the orders are done by physicians versus clerks. (d) Some of the older nurses chose to retire when the EHR was implemented but overall the institution did not experience very much turnover (metrics are not available at this time as this is reported yearly). (e) Most importantly, the nurses are extremely happy with the added technology and definitely do not want to return to paper (J. Sullivan, personal communication, February 7, 2008).

### Communication via Technology

Pamela Klauer Triolo, PhD, RN, FAAN, is the Chief Nursing Officer for the University of Pittsburgh Medical Center (UPMC), which encompasses 20 hospitals nationally and internationally and includes approximately 11,000 nurses. Over her career as a CNO in three academic health care centers, Dr. Triolo has focused on creating Best in Practice communication systems, with nursing leaders and staff, via multiple interactive vehicles and has ensured online data to improve work/life balance and provide management the tools for success (P.K. Triolo, personal communication, January 10, 2008).

At UPMC, the CNOs (20) across the globe are connected via a Nursing Share Point site where they can access operational reports to PowerPoint Educational sessions. The electronic Health Risk Assessment (HRA) is unique to UPMC as a fully integrated health care delivery system. Nurses can access online coaches for services such as assistance with weight management and/or to support contacting physicians for personal and family health. Each year, data are generated from the HRAs that not only tracks overall nurse health issues, but supports new initiatives to promote health and wellness. Currently the nurses are involved in an electronic “weight race” competing in teams across the entire system. All team members can log on and track their progress 24/7. Dr. Triolo and her team have aspirations that this will prove to be a vital retention tool. They want to see real improvements in their nurses’ health and work life (P.K. Triolo, personal communication, January 10, 2008).

Voice-mail broadcasts are used across UPMC to share information on all types of staff interest, from the PERKS program about certain discounts to details about research studies. Hospitals use electronic newsletters to share what is new in nursing as well as recognize and reward nurses. In addition, Dr. Triolo sends the “Wednesday Nursing Weekly” to all inter-

ested parties across the UPMC system providing up to the minute news and opportunities. This email blast includes items such as registering for activities during Nurses Week to requests for online submission of poster presentations (P.K. Triolo, personal communication, January 10, 2008).

Another electronic feature at UPMC is the monthly Nursing Grand Rounds that are done via Web cast and simulcasts to the staff. The Nursing Grand Rounds offer contact hours and are available at UPMCnurses.com around the clock.

At a previous academic facility, Dr. Triolo created a section of the intranet titled “Ask the CNO.” Any nursing employee could insert a question that went directly to her for response. Real-time electronic surveys were conducted regularly to assess the pulse of the nursing staff.

Dr. Triolo and the CNO Leadership Team at UPMC continue to develop systems that provide real time communication that will unite and create synergy across the organization. Attracting and retaining the best talent is their primary goal. Retention is monitored monthly at the business unit level and across the system. The data over the last couple of years signifies improvements in retention (P.K. Triolo, personal communication, January 10, 2008).

### What’s New in the OR?

St. Joseph Hospital is one of 14 health care ministries within the St. Joseph Health System, Orange, CA, the 10th largest not-for-profit health system in the United States. In 2006, Joanne M. Stermer, MBA, RN, Executive Director of Surgical Services and Endoscopy, and her team began their journey to create a “world-class” perioperative environment. To test different equipment and different suite layouts, they took an older operating room (OR) suite and converted it into a learning lab. They partnered with vendors to provide open collaboration. All aspects of patient care, patient safety, ease of use, and physician input were evaluated. Staff OR nurses contributed greatly in all of these areas, including the suite/room designs (J.M. Stermer, personal communication, February 29, 2008).

October 2007 marked the opening of their new OR suites with state-of-the-art technology. In each OR suite there are three large computer monitors with touch screens, two large booms (these replaced the old cart system) which hold both OR and anesthesia equipment, and a mobile desk. The nurses appreciate the mobile desks because now they can face the surgical area versus the wall. The monitor is on an arm for versatility and includes a wireless mouse and keyboard. They have the latest perioperative documentation system, the latest picture archiving computer sys-

tem for digital X-rays, the latest Stryker system, which controls the room and, most impressively, CareSuite® SmarTrack (Picis, Inc.). This is a patient tracking system from pre-op to recovery. This software is customized with color coding so that on any PC (including the waiting area) someone can see at which stage a patient is in the surgical process. In the primary nursing station area (located between seven OR suites on each side) large LCD monitors face all directions with SmarTrack visualized prominently to all (J.M. Stermer, personal communication, February 29, 2008).

With the installation of the booms there are very limited cords/cables on the floors. This not only reduces the chances of someone tripping but also reduces the amount of bending and stooping for nurses. The booms move by hydraulics, requiring minimal pressure by the user. Every RN carries an ASCOM phone with a five-number extension, thus allowing instant communication to any other member of the team (J.M. Stermer, personal communication, February 29, 2008).

Because all of this innovation is relatively new at St. Joseph's Perioperative Department, there is not much data to report that demonstrates how this has impacted nursing retention. St. Joseph's uses the National Database of Nursing Quality Indicators. For 2006, their score was 56.13. In 2007, this score increased to 58.36, reflecting an improvement in quality as well as job satisfaction (J.M. Stermer, personal communication, February 29, 2008).

### **BidShift (Concerro)**

How was UPMC-Mercy in Pittsburgh able to remove all agency nurses in 10 months? BidShift, now Concerro, was the answer. Concerro is a Web-based tool that allows flexibility in choosing shifts. Mary Anne Foley, MSN, RN, CNO; Sister Caroline Denise Wright, Systems Coordinator; and Alana Reed, Nursing Manager, all were instrumental in implementing this program in May 2003. They targeted the intensive care unit and the medical unit first and by December they had all the units up and using the program. By February 2004 all agency nurses were gone. The only exceptions were agency nurses who became employees during that time, which many of them did. To this day, many of these same nurses are still working UPMC-Mercy (M.A. Foley, personal communication, February 4, 2008).

The staffing office maintains this function by posting needs by shift each week online. Anyone can bid for a shift. There are nurses who only bid on shifts, called Bid nurses. Because these nurses receive premium pay they do not receive benefits. All nurses including Bid nurses attend mandatory inservice education; all nurses are treated equally. The physicians are extremely happy about this program because they

do not approve of the use of agency personnel (M.A. Foley, personal communication, February 4, 2008).

As outcomes of this program, UPMC-Mercy's nursing staff satisfaction improved and turnover is 3.9%, well below national metrics. From May to December 2003, over \$2 million in agency costs were saved (M.A. Foley, personal communication, February 4, 2008).

### **Patient Safety Innovation Center**

Kaiser Permanente, Oakland, CA, is the nation's largest HMO, with eight million patients and 63 million square feet of space. Because Kaiser is constantly looking at different technologies that can affect and benefit patient safety, they opened a 35,000 square foot facility near the Oakland Airport called the Sidney R. Garfield Center for Health Care Innovation. Marilyn P. Chow, DNSc, RN, FAAN, CNO, cross regional patient care services, explains that they have created simulation environments for many of the facility clinical services. Some of these include the medical/surgical area, emergency room, OR suite, labor and delivery suite, and home care environment. Here technologies, processes, and new developments are tested to see how they impact workflows. Most importantly, as a cost benefit, new software or equipment can be tested before purchase (M.P. Chow, personal communication, March 4, 2008).

The front-line nurses are involved in the simulation labs — from Vocera™, a wireless mobile phone technology that allows instant communication between users, to computerized nursing documentation, to bar coding. The goal is to ensure that any new device and/or software integrates within the workflow.

Dr. Chow feels confident that their organization has saved millions of dollars by testing these improvements before purchase and implementation. More importantly, the nursing staff can rest assured that they have a voice in the purchase of any new technology (M.P. Chow, personal communication, March 4, 2008).

### **Summary**

Health care is undergoing transformations in clinical environments. More and more technologies are being adapted. Overall, have processes been put in place to accurately measure the impact that these new technologies have and will have on nursing retention? I wish I could say yes; however, it is apparent that this is an area that organizations should evaluate more closely. Nursing leaders and human resource administrators together can seek out systems to help benchmark and measure outcomes. Increasing retention by a mere 1% can save any organization a minimum of \$250,000. \$

