Case study

OSF HealthCare/Jump Trading Simulation & Education Center

Strengthening preventive care and operations efficiency with HP Workstations

Industry
Healthcare

Objective
Help improve outcomes and reduce costs through efficient operations, simulation training, and innovation

Approach
Leverage longstanding HP relationship to deploy powerful, durable, high-performance solutions to train staff, innovate solutions, and improve workflows

IT matters
- Leverage broad HP portfolio to exceed 99.6% uptime requirement
- Perform data-intensive simulations and analytics
- Integrate data and tools to streamline continuum of care

Business matters
- Meet cost, quality challenges of changing business model
- Innovate advances in healthcare delivery, clinician training, preventive care
- Leverage data to improve communication among patients and providers

"When the Jump Center innovates new ways to improve patient care, we know HP will have the technology—such as the powerful HP Z Workstation—to make it all work."

– Matthew Warrens, Executive Director of Operations, OSF HealthCare Systems / Jump Trading Simulation & Education Center

OSF HealthCare, based in Peoria, Ill., represents state of the art and futuristic healthcare. OSF provides acute care, nursing education, home care, and other healthcare-related services for nearly three million people in Illinois and Michigan. It also operates the Jump Trading Simulation & Education Center—an incubator on the campus of OSF Saint Francis Medical Center that drives innovation for improved healthcare outcomes. Jump projects include simulation training for healthcare professionals; population analytics to strengthen preventive care; and streamlined communication among patients and providers. Powering these, as well as the daily operation of the primary care system, are HP solutions ranging from HP Thin Clients to high-performance HP Z Workstations.

Click image to view video: Telemedicine Solutions for Emergency Care Providers

Durability. Reliability. Mobility. High performance. These requirements led OSF HealthCare to choose HP as its provider of thin clients, mobile devices, desktop PCs, and workstations—foundation technology for running an efficient, 16,000 plus-employee healthcare system. OSF HealthCare operates eleven hospitals, two colleges of nursing, a home-care service, and a variety of other healthcare-related enterprises, including Jump.

The organization started working with HP more than 15 years ago, and over time has expanded the relationship to benefit from the broad HP product portfolio and deep HP healthcare industry expertise. Homecare workers, for example, must have durable mobile devices with long battery life. All workers need the performance muscle to work seamlessly and securely with the Epic electronic medical records (EMR) system.

Recently, OSF HealthCare replaced approximately 20,000 non-HP devices with HP mobile, desktop, and workstation solutions. HP servers and storage support an end-to-end infrastructure of secure, reliable operations.

"The versatility of HP solutions is one of the main attractions for us. By opting for HP mobility solutions we can provide the high level of technical functionality that we need for our clinical staff, and the devices are also simple enough to use. They are light and mobile, yet have the power to handle live video feeds and images to our clinicians."

– Matthew Warrens, Executive Director of Operations, OSF HealthCare Systems / Jump Trading Simulation & Education Center

"HP durability and reliability meet our standard of 99.6% uptime, and often exceed it," says Michael Arends, client device services manager for OSF HealthCare. "Our benefits are twofold: fast patient care and a savings in technical staff time spent supporting the equipment." HP works with OSF HealthCare holistically, Arends adds, helping with finance and recycling as well as technology. The health system leases all its devices through HP Financial Services and matches its three-year refresh cycle to the HP three-year warranty.

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The need for efficiency and high quality is nothing new in healthcare. However, the industry business model is changing so radically that even the most advanced current systems cannot afford to stand still. With federal healthcare law transforming the cost basis of healthcare from a fee-for-service model to a pre-determined allotment for patient care, large healthcare providers like OSF HealthCare must find new ways to improve quality and reduce costs. That's where Jump enters the picture—and where the alliance with HP enables breakthrough advances in caregiving technology and processes.

"Nowadays, we're not competing only with the hospital across the street. We have to figure out what the new markets and services in healthcare will be—and develop strategies for competing with organizations coming in from outside the healthcare arena," says Matthew Warrens, executive director of Jump Trading. "Jump is our innovation engine."

Innovative simulation education

A collaboration between OSF HealthCare and University of Illinois College of Medicine at Peoria (UICOMP), Jump maintains three overlapping areas of focus: education, research, and innovation. The $50 million, world-class facility features seven distinct simulation areas: an ICU; an operating room and trauma lab; a patient care unit; a virtual reality lab; an anatomical skills lab; a regional transport center, complete with an ambulance and apartment-like setup for simulating rescues; and an innovation lab.

Click image to view video: HP Big Data Analysis for Population Health

In these hands-on simulation areas, Jump trains physicians, nurses, emergency-services personnel, and other first responders to provide high quality care at lower patient risk. Jump also conducts research to improve training methodologies. In one study, the center is comparing traditional didactic methods for training residents to insert central lines to simulation-based trainings in which the lines are inserted on mannequins. The goal is to maximize clinician competency while reducing patient infections and complications. In its innovation lab, Jump used a 3D printer to explain complex heart defects to students and surgical teams, enabling them to work on the model before treating live patients. Other projects include a HealthScholars SmartPump App to improve infusion pump training; simulated skin for wound-stitch training, and simulated cardiac resuscitation. "We're looking to take an already existing good healthcare system and help make it great," says Dr. John Vozenilek, Dr. John Vozenilek, Emergency Medicine Physician, Chief Medical Officer and VP of Simulation, Jump Trading Simulation & Education Center.

Predictive analytics to strengthen preventive care

Another key Jump mission, in addition to improving quality of care, is to enhance preventive care—to keep people healthier so they won't need as much critical care. To this end, Jump is developing applications for predictability analytics using population health modeling. Diabetes prevention was an early focus but the approach can extend to numerous disease states.

"It's using a lot of census and other data so you can drill down into geographic locations to look at population sizes, and then our locations and facilities in relation to the population size. You can slice and dice the data any way you want," Warrens says. "The application we wrote is interactive and some of the apps have animation. Users can walk up to the interactive display screens—we use large-format HP interactive signage displays—to select their desired views. It's high-powered graphics, so we use HP Z Workstations for processing power and speed. We demonstrate to our board members and make the business case to invest more in this research."

> "We chose HP Z Workstations to run our predictive analysis because of their power and sophisticated graphics."
>
> – Matthew Warrens, Executive Director of Operations, OSF HealthCare Systems / Jump Trading Simulation & Education Center

Jump plans to open additional collaborative workspaces bringing currently siloed groups together on its innovation platform powered by HP. "When we said, 'Oh, we need some large-data visualization technology—the interactive displays and the computing power to crunch the numbers'—we didn't do evaluations. We called HP and said, 'What would your solution be?' That's what you get from a committed, trusted vendor."

Customer at a glance

Application
Health system operations, electronic health records; simulation training; R&D

Hardware
- HP Z Workstations
- HP Desktop PCs
- HP Notebook PCs
- HP Mobile Thin Clients
- HP Display Monitors
- HP 47-inch LCD Interactive Digital Signage Display
- HP Servers
- HP Storage

HP services
- HP Financial Services

Patient communication in the continuum of care

Jump envisions leveraging data to streamline the continuum of care—creating a seamless communication flow from first responders all the way through hospital and administrative staff, each equipped with the optimal tools for their job. "I see technology transforming the continuum of care through the passing of key data from the paramedic, to the trauma team, to the nurse at the bedside that might be caring for that patient," Dr. Vozenilek says. "All of the HP technologies we use make data accessible to make good decisions about patient care."

> "HP shares our vision for a safer, higher quality, cost efficient healthcare system. All of the HP technologies we use support the continuum of care, because they make data accessible to make good decisions about patient care."
>
> – Dr. John Vozenilek, Emergency Medicine Physician, Chief Medical Officer and VP of Simulation, Jump Trading Simulation & Education Center

Jump also is developing ways to leverage technology to strengthen communication between patients and healthcare providers. "I never thought my mom would own a tablet and know how to use it; she's 70," Jump Executive Director Warrens says. "How likely is it that a person at home who's 70 will use a device? We conduct usability studies, human-factor engineering. How well does the technology work? How easy is it? The home monitoring market will be a big piece of keeping people healthy and out of the hospital in the future."

Leveraging HP relationship

When OSF HealthCare was envisioning Jump, it approached its chosen vendor HP for assistance. HP responded with best-practices expertise to improve workflows and with powerful, purpose-matched technologies that advance the organization's multiple purposes. "Why do we do R&D? To improve clinical outcomes. To lower costs," Warrens says. "HP is a powerful ally in this endeavor. We leverage our relationship with a vendor that understands our needs, and brings new technologies to test ideas and build the future."

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