

Marshfield Clinic



One of the largest clinics in the United States turns to Fujitsu LifeBook T4000 and Stylistic ST5000 to launch its innovative EMR initiative.

Challenge:

Provide physicians, nurses, and medical assistants with real-time electronic access to critical patient information for improved and more accurate patient care.

Solution:

A physician-friendly, chartless electronic medical record (EMR) system using Marshfield Clinic's Cattails software suite and Fujitsu LifeBook® T4000 Series Tablet PCs and Stylistic® ST5000 Series for reliable, high-performance mobility.

Benefits:

Marshfield Clinic has realized a substantial return on investment. A time study conducted prior to rolling out the chartless program revealed that each record pull cost \$4.50—which has now been virtually eliminated. The healthcare organization has also been able to eliminate all chart rooms, and recently converted the largest chart room into a new clinical space for patient care. Most notably, Marshfield Clinic has seen a dramatic improvement in patient care, safety, and overall health.

“Our users are virtually tethered to their Fujitsu Tablet PCs, giving them real-time access to critical patient data wherever they are.”

- **Carl Christensen, Chief Information Officer at Marshfield Clinic**



Fujitsu Tablet PCs provide real-time access to patient information such as a genetic profile, medical history, and drug interactions.

Marshfield Clinic Deploys Fujitsu Tablet PCs for Real-time Access to Critical Patient Data

With nearly 780 physicians in 84 medical specialties at 45 locations across Wisconsin, Marshfield Clinic is one of the largest private, multi-specialty healthcare practices in the United States. In its quest to deliver superior patient care, Marshfield Clinic has become a leading developer and user of advanced health information systems. With a mission to ensure real-time access to information where and when needed for improved patient care, Marshfield Clinic's Information Systems group has developed a sophisticated network infrastructure based on its custom electronic medical record (EMR) system and Fujitsu Tablet PCs that supports patient care and research.

A Physician-Friendly Mobile Environment

Marshfield Clinic is one of the only large private healthcare practices in the United States to develop its own EMR software. “As a physician-driven organization, our doctors have played a leading role in developing the Cattails software suite—our clinical and data management application portfolio,” explains Carl Christensen, chief information officer at Marshfield Clinic. “As a result, we have built a very physician-friendly mobile EMR system using Fujitsu Tablet PCs to facilitate patient care.” In fact, Marshfield Clinic plans to sell the CattailsMD software suite, certified by CCHITSM, on Fujitsu Tablet PCs, to other healthcare providers.

The mobile environment—or chartless program as it is known internally—provides more than 2,600 users including physicians, nurses, and medical assistants with electronic access to patient information at the point of care. “Our users are virtually tethered to their Fujitsu Tablet PCs, giving them real-time access to critical patient data wherever they are,” notes Christensen. “But the rush to deploy EMR systems is really only the race to the starting line. With so much data now available, we can offer the decision support needed to help users make more informed clinical decisions and provide more accurate care.”

Leveraging their Fujitsu Tablet PCs, healthcare providers at Marshfield Clinic can now collect more detailed patient information and input data quickly into the system using their device. The data is then extracted, transformed, and loaded into a data warehouse that supports population-based decision support, research, and quality improvement. According to Christensen, the new mobile environment enables healthcare providers to deliver personalized care based on real-time access to information such as a patient's genetic profile or medical history, a list of drug interactions, or other critical data that was not previously as accessible.

With the new chartless program, Marshfield Clinic will maintain only electronic medical records moving forward. However, the clinic still has to deal with some paper forms that either come with the patient or are generated during

certain administrative processes. “Using the Fujitsu fi-5650 workgroup and Fujitsu fi-4340c flatbed scanners, we can quickly and cost-effectively scan existing paper into electronic records.”

Marshfield Clinic Partners with Fujitsu

Dedicated to technology innovation, Marshfield Clinic was the first healthcare organization to deploy an EMR solution back in 1985. Fifteen years later, the clinic was ready to fully deploy its chartless initiative, but chose to wait until they could find a mobile technology advanced enough to meet their needs. “Technology has come a long way in the last few years—now offering the power, reliability, and durability needed to make our chartless program work,” says Jeremy Meller, chief information officer of the clinical division at Marshfield Clinic. After lengthy consideration, Marshfield Clinic narrowed its choice to two vendors, ultimately selecting Fujitsu for its exceptional technology and its excellent service and support. “It was clear that Fujitsu would be a much stronger partner and we were right.”

Users Value Advanced Features

Marshfield Clinic standardized on the Fujitsu Stylistic ST5000 and LifeBook T4000 Series Tablet PCs for its chartless initiative because of their ease of use, fast processing power, exceptional 12.1" XGA display, and durability. With a sleek design and solid feel, the Stylistic ST5000 and LifeBook T4000 Series Tablet PCs easily stand up to the rigors of everyday use. “In a hectic environment like ours, durability was a key consideration,” says Mary Schalow, director of customer service and support for commercial IT at Marshfield Clinic. “Our healthcare providers simply can’t do their job without their device. Thankfully Fujitsu Tablet PCs have proved durable even if accidentally dropped.” As an extra layer of protection, Marshfield Clinic has initiated a swap program that provides new units as quickly as possible should a device be damaged.

The flexible form factor of the LifeBook T4000 Series Tablet PC is another valuable feature, because users can either handwrite notes or draw diagrams on the screen like a notepad or conduct business in a standard notebook mode. “The flexible keyboard is a huge benefit for our caregivers, who are heavy email users,” explains Schalow. The flexible form factor also makes docking and undocking at designated

stations a lot easier. According to Schalow, the integrated modular bay on the LifeBook T4000 Tablet PC is another key element. “The modular bay gives our users the flexibility of using an optical drive or storing an extra battery for extended battery life without increasing the device’s size and weight,” explains Schalow.

With a Fujitsu Stylistic ST5000 or LifeBook T4000 Series Tablet PC assigned to each user, the physicians and staff at Marshfield Clinic now have the flexibility to work wherever there is a high-speed wireless connection. To ensure offsite connectivity, Marshfield Clinic uses a virtual private network (VPN) designed specifically for wireless networks. In addition, Marshfield wanted a mobile device that incorporated the Atheros wireless network adapter for enhanced network connectivity. “Some vendors weren’t willing to build Atheros into their device, but Fujitsu was,” explains Meller. “With more than 1,200 outreach instances outside our own network, reliable and secure network connectivity was an important factor in our decision to partner with Fujitsu.”

User acceptance has also been high. “Initially, we were concerned that users would resist the new EMR system and mobile environment,” says Schalow. “But momentum built quickly and soon everyone wanted their device right away—a testament to the value of our initiative and Fujitsu Tablet PCs in particular.”

A Strong Partner Delivers Superior Support

Venturing into new territory with its chartless initiative, Marshfield Clinic needed a partner that would work closely with its IS team to address potential issues as they surfaced. In one instance, Fujitsu engineers were called in from California and Japan to help resolve a static issue caused when docking some of the Fujitsu Tablet PCs in certain buildings. “Because we live in a cold, dry climate for six months of the year, static can be an issue,” explains Schalow. Fujitsu sent in a team to investigate and instituted an effective anti-static solution that has since become part of its product offering. “Fujitsu cares about our patients as much as we do, forming the foundation for a truly excellent partnership.”

ROI in Savings and Health

Marshfield Clinic has enjoyed a substantial return on investment since deploying its mobile EMR system on Fujitsu



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Tablet PCs. A time study conducted prior to rolling out the chartless program revealed that each record pull cost \$4.50. "Since going chartless on a mobile environment, we have literally eliminated that cost," notes Christensen. The healthcare organization has also been able to eliminate all chart rooms and recently converted the largest chart room into a new clinical space for patient care.

Most notably, Marshfield Clinic has seen a dramatic improvement in patient care. Previously, medical assistants spent a lot of time managing each patient's paper trail. Now, they can spend time assessing each patient's electronic record to determine a more proactive course of healthcare.

"Of the demonstration sites involved, we received the largest financial incentive based on our performance," says Christensen. "The Fujitsu Tablet PCs were a key factor in our success."

"The payback is much higher because now staff can use its time more productively to improve the overall health of our patient population," says Christensen.

In fact, Marshfield Clinic is participating in a Centers for Medicare and Medicaid Services (CMS) sponsored pay-for-performance program, which provides a financial incentive to healthcare organizations that are implementing more proactive strategies to improve patient health. To achieve optimal results, Marshfield Clinic actually changed its roll-out strategy in preparation for this program, putting the devices in the hands of primary care physicians, especially those who deal with Medicare patients. "Of the demonstration sites involved, we received the largest financial incentive based on our performance," says Christensen. "The Fujitsu Tablet PCs were a key factor in our success."

The success of the EMR system and mobile environment can also be seen in the improved overall health status of patients and the reduced number of hospitalizations, both of which correlate directly to the time of the Fujitsu Tablet PC deployment. "We can also track a direct improvement in patient satisfaction to the deployment of the Fujitsu Tablet PCs. Patients like to see the screen to review their chart or have images explained."

A Mission-Critical Device

According to Christensen, the healthcare industry does not always consider devices such as notebooks and Tablet PCs mission-critical. "But in our environment, the mobile device is the enterprise—it's what makes or breaks our day-to-day patient care," concludes Christensen. "Thanks to the reliability, quality, and service excellence provided by Fujitsu, we can exceed patient needs now and in the future."