TABLET-ENABLED WORKFLOWS

Enhancing Mobile Workflows with Intel-Based Tablets and an Eye on Windows* 8

Lancaster County’s Office of Behavioral Health and Developmental Services improves quality and efficiency of care and generates USD 1 million in revenue

From developmentally delayed toddlers to elderly adults with a mental illness, county services are often the safety net of last resort for the nation’s most vulnerable individuals. In Pennsylvania’s Lancaster County, the Office of Behavioral Health and Developmental Services (BH/DS) is using a unified information system and tablet-enabled mobile workflows to provide those individuals with higher-quality services faster, more efficiently, and at lower cost.

Pursuing technology innovation despite prolonged budget cuts, BH/DS has achieved an 18-month return on investment (ROI) while enabling participating agencies to better fulfill their mission. Individuals receive more coordinated care, and BH/DS has eliminated its wait list for case management, helping ensure that critical services are available when they’re needed. The solution has also helped BH/DS reduce administrative costs to just 8 percent of revenues, achieve a 99 percent success rate on claims reimbursement, and generate USD 1 million in additional case management revenue.

“We’re serving folks who have complex needs,” says Jen Koppel, deputy director of administration for BH/DS. “With the unified information management system, we’re able to treat our folks holistically and provide quality services in a much better, more organized way. We’re better able to make sure no one is falling through the cracks of systems. Someone who’s homeless and has drug and alcohol issues and a mental health diagnosis—we can do a much better job for them when we can share information. We have also gained tremendous efficiencies with the tablets and having our case managers be more mobile and out in the community with the consumers. Because of the technology investments we’ve made, we’ve been able to continue to maintain services to the residents of Lancaster County despite all the budget cuts we’ve taken over the years.”

BH/DS employees access their unified information system through mobile workflows that take advantage of ASUS Eee B121* convertible slate tablets based on the Intel® Core™ i5 processor with Windows* 7. The solution also uses Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI) with Microsoft Windows BitLocker Drive Encryption* to help protect sensitive data and comply with the Health Insurance Portability and Accountability Act (HIPAA) while minimizing encryption’s traditional performance impact. Building on their successful deployment, BH/DS leaders are planning an upgrade to Windows 8. They say the move should increase productivity—and delight employees—even more.

“With Windows and Intel-based devices, we can run all our enterprise applications, and we don’t have to rewrite any of our software. We have the performance to run things like our VoIP phone system. Our management and security measures are in place with group policies and Microsoft Active Directory*, so we don’t have to purchase additional third-party management tools and compliance checks—and get underwhelming hardware.”

Rick Mutzel, Director, Data Integrated Services, Office of Behavioral Health and Developmental Services, Lancaster County, Pa.
Located in southeastern Pennsylvania, Lancaster County covers 984 square miles and has a population of over 520,000, including more than 30,000 Amish. Its economy is a blend of farming, manufacturing, and tourism, and unemployment is below the state average.

Supported by a Board of Commissioners that encouraged out-of-the-box innovation, BH/DS created the Lancaster Unified Information System* (LUIS*) as a foundation for improving services to county citizens with mental illness and intellectual disabilities as well as services to children from birth to three years old with developmental disabilities. LUIS also supports the county’s Children and Youth Agency (CYA), with plans to incorporate homeless management and other county departments into the system.

While the county’s IT department provides networking and other infrastructure, BH/DS is responsible for its end-user solutions and information systems. In 2007, BH/DS leaders wanted to implement a unified solution for clinical, fiscal, and provider management. When they didn’t find an off-the-shelf solution that met their needs, they did a two-year process-efficiency study and worked with a third-party medical software company to develop a solution.

“Whenever we implement something, it’s generally to save taxpayer money, increase efficiency, or increase quality of service to the consumers,” says Rick Mutzel, director of data integrated services for BH/DS. With LUIS and mobile devices for employees, the county does all three. LUIS offers a single, secure electronic health record (EHR) and case management platform, providing comprehensive information and a single workflow for documenting plans, managing contracts, generating invoices, handling claims, and other tasks.

Full-Function Tablets Make Financial Sense

LUIS was an important first step toward greater automation and efficiency. Equally critical was the decision to modernize workflows and provide employees with full-function tablets so they can access LUIS when and where they need to. Many BH/DS employees spend much of their day in the community, and field employees were the first to get tablets—but BH/DS soon realized that the devices could improve productivity and satisfaction and reduce costs for nearly all its employees.

“Our initial approach was that anybody who could generate revenue in the field would get a tablet, but as we added the ability to do electronic signatures and document processing, we quickly expanded to include their supervisors, and it spread from there,” says Mutzel. “At this point, the only people who don’t have a tablet are a handful of strictly clerical and fiscal staff, and they use laptops.”

For everyone else, a tablet replaces the desktop workstation, giving employees the convenience of a single, portable device and touch-enabled applications.

At a Glance

Project
• Create a next-generation information system and redesign workflows.

Accomplishments
• Unified information system and tablets have helped BH/DS cut administrative costs to just 8 percent of budget, achieve 99 percent reimbursement rates, reduce energy consumption, and eliminate the waiting list for mental health services.

Lessons Learned
• Improve manageability and avoid having to support multiple devices per employee. Instead, give each employee a full-function mobile platform that supports all aspects of the workflow, whether in the office or out in the field.
• Ensure that tablets and other mobile devices can meet the enterprise’s security, performance, and management requirements, and use hardware-enhanced security to increase encryption performance.
• Evaluate Windows 8 for the Modern UI*, particularly for mobile devices and touch-enabled applications.
Intel technologies help BH/DS touch lives and stretch taxpayer dollars

“Our big push with the tablets was to be as electronic as possible,” Mutzel says. “With the tablets, hot spots, and the office virtual private network (VPN), our front-line case managers have a full work environment in the field just as they do while they’re in the office. They have all the tools to be totally mobile and electronic, and to decrease the time until service delivery, we avoid having two units. It is much more cost-effective to buy one tablet and use it as the full in-office and out-of-office machine.”

Intel-Based Tablets for Compatibility and Security

BH/DS considered other mobile architectures before choosing Intel-based tablets with Windows as the best way to improve end-user productivity while securing and managing the environment.

“With Windows and Intel-based devices, we can run all our enterprise applications, and we don’t have to rewrite any of our software,” Mutzel says. “We have the performance to run things like our voice over IP (VoIP) phone system. Our management and security measures are in place with group policies and Microsoft Active Directory*, so we don’t have to purchase additional third-party management tools and compliance checks—and get underwhelming hardware.”

Intel-based tablets give the county extensive flexibility to add Windows-compatible accessories and peripherals. BH/DS configures its tablets with solid-state drives, Bluetooth detachable keyboards, and Wacom Digitizers for document capture and e-signature capabilities.

Since BH/DS employees work with privacy-protected health information, security is a top priority. BH/DS uses Intel® security technologies in the ASUS slate tablets to support technology and procedural strategies aimed at ensuring compliance with HIPAA requirements, as well as with other federal, state, and local regulations. Many Intel Core i5 processors include Intel AES-NI to accelerate data encryption on the client.

“The ASUS model has the Trusted Platform Module (TPM), which was important for us,” says Mutzel. “We use Windows BitLocker to encrypt the whole hard drive and have key fobs with the encryption key on it. If a device is lost, stolen, or misplaced, we’re compliant under federal security law, knowing that all the information on that unit is encrypted. We also enforce the policy over the network, so that any removable media that might be inserted into the system will be marked as read-only unless it is BitLocker-encrypted on their network. We store our encryption keys in Active Directory, which also helps from a management standpoint.”

ASUS has published the Windows 8 drivers for the B121, and Mutzel says, “We’ve had a wonderful experience loading Windows 8 onto the devices.” His compatibility testing has identified just one software problem, with a commercial package whose vendor is issuing a fix. He plans to deploy Windows 8 on the current tablets while keeping an eye on next-generation devices. “With the volume of new devices coming to market, we’re always looking for anything that can increase efficiency or fill a gap,” he comments. “As new devices come out, we always look at how they can increase productivity.”

Next: Windows 8 Migration for Touch-Enabled Efficiencies

BH/DS leaders are evaluating Windows 8 on Intel Core i5 processor-based tablets and expect to begin deploying it to mobile users within the next six months. “The usability of Windows 8 on the tablet environment is far superior to Windows 7,” says Mutzel. “Hands down, it is much easier to interact with the computer. The touch interface and on-screen keyboard are much, much improved. We feel that the efficiency increase in the touch interface warrants the migration.”

Mobile Productivity

To support the mobile workflows, BH/DS’s technical team developed custom software that lets employees enter information into the EHR and review case information in real time on their tablets while they’re out in the field. The team also created a program that warehouses the agency’s forms and can pre-populate fields such as name, address, diagnosis, and dates of services. Employees can also collect electronic signatures and upload completed forms to the electronic record.

“There are so many heartwarming stories to the work we do, such as getting folks out of the state hospital and back into the community, or helping folks who are struggling to support a loved one who has intellectual disabilities. The biggest successes are the children who never go into the system because we’ve done early intervention.”

Jen Koppel, Deputy Director, Administration, Office of Behavioral Health and Developmental Services, Lancaster County, Pa.
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With the tablets providing mobile access to LUIS and other office resources, BH/DS is moving toward paperless operations and automated workflows. New health records are fully electronic, and an electronic management system automates claims processing. Case management records are increasingly automated. As a result, BH/DS has dramatically streamlined its workflows, increased efficiencies, and improved services.

“Case managers can complete documents, referrals, and case notes while they’re with the consumer in their natural support settings instead of having to have consumers come to the office,” Mutzel says. “They can schedule more appointments during the day since they no longer need to come to the office between meetings to complete work or file papers, so they’re also reducing travel expenses. In addition, they’re eliminating the overhead for paper scanning, filing, and conversions on the back end. This allows for what was typically done by three or four different staff in the office to be completed entirely electronically and automatically.”

There’s also a green impact since fewer miles on the road mean lower carbon emissions.

ROI in 18 Months
BH/DS’s technology investments and workflow optimization have helped reduce administrative costs to just 8 percent of the total budget and produced a 99 percent rate of reimbursement for claims. “Eight percent on administrative costs and 99 percent claims reimbursement—those figures are both just unheard of, and they really are a result of the technology—of automating so many of our manual processes,” says Koppel.

The technology-supported changes have also helped BH/DS increase productivity, eliminate duplicate effort, and increase case management revenues by an unanticipated USD 1 million. “We don’t bill for travel time, only for services that are provided directly to the consumer,” Koppel explains. “So the fact that we are able to draw in more funds for this service means that we are spending more time directly serving our consumers, which we’re able to do because we’re so much more efficient.”

The productivity improvements contributed to an 18-month ROI for the tablets. “The return on investment for switching to tablets and being able to be more productive in the field was just a year and a half,” Mutzel states. “We’ve already recouped the expenditures for the hardware for the transition to the tablets just by productivity increases. We’ve also recouped the majority of what it cost us to build the software.”

Helping Individuals, Families, and the Community
While the efficiency improvements and savings are impressive, the ultimate impact of BH/DS’s technology investments stems from delivering high-quality care to vulnerable individuals and families. With unified information, case workers can provide more coordinated services to individuals and families with complex needs. Through process efficiencies, they can deliver those services with fewer delays and less hassle to citizens and employees alike.

Comprehensive case management capabilities also support long-term, prevention-focused initiatives aimed at reducing hospitalizations and ending homelessness within the county. By enabling mentally ill people to become self-supporting or avoid homelessness, BH/DS not only can make a huge impact on those individuals’ lives, but also improve the overall quality of life and business climate within the county.

“There are so many heartwarming stories to the work we do, such as getting folks out of the state hospital and back into the community, or helping folks who are struggling to support a loved one who has intellectual disabilities,” says Koppel. “The biggest successes are the children who never go into the system because we’ve done early intervention—they’re able to recoup the losses they’ve had from their developmental delays, and by the time they get to school, they’re functioning within an average range.”

BH/DS has achieved its outstanding results despite budgets that have been reduced year after year. “A lot of people think tight budgets mean you can’t innovate,” says Koppel. “Our philosophy is that times when you’re having budget problems can be the best time to start talking about integrated data solutions, because that’s what’s going to save you money in the long run.”

The efficiencies that organizations such as BH/DS are achieving can also increase taxpayer confidence. “Few people like paying taxes because it can be hard to see the value,” says Gary Interdonato, an enterprise technologist at Intel who lives in Lancaster County. “When I learned that some of my tax dollars were being used to invest in technology, I had a much different perspective. The ways BH/DS is using technology that will ultimately enrich the lives of those with mental illness and intellectual and developmental disabilities—as a resident and taxpayer, I’m impressed with it, I’m appreciative of it, and I don’t mind paying for it.”