



- 1 Improve physician experience
- 2 Accommodate physician preferences
- 3 Meet demands at point of care
- 4 Enable greater productivity
- 5 Enhance accuracy
- 6 Simplify device management
- 7 Make patients happy

Improving Physician Workflow with a Single Device: Seven Ways Microsoft Surface Pro 3 Is Revolutionizing Mobile Care

Frustration levels are rising as physicians are increasingly grappling to get everything they need out of their computer hardware and mobile tools. Because it's virtually impossible to turn to one single device for all requirements, physicians often end up juggling and struggling with many form factors – until now, at least.

It's easy to see why. The demand for physicians' technological capabilities at the point of care is relentlessly growing. In addition to complying with mandates for electronic medical record (EMR) keeping and information exchange for care coordination, physicians must meet today's consumer-oriented patient expectations for timely access to their information and better experiences during office visits.

To meet these demands, physicians are looking for mobile devices that offer security, data access speed and touch accuracy in small form factor screens, according to the 3rd Annual HIMSS Analytics Mobile Technology Survey released in February 2014.¹ The frustration, however, has become palatable as physicians are finding they are forced to employ a combination of tablets, smart phones, laptops and stationary workstations to

Produced in partnership with

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Rasu Shrestha, MD
Chief Information Officer
UPMC

satisfy their needs. In fact, according to a study from medical app developer Epocrates, 41 percent of physicians can be considered digital “omnivores”— due to the fact that they are forced to rely upon a combination of various devices.² The situation, unfortunately, is presenting a modern-day conundrum: Even though physicians want to gain all the benefits associated with mobile computing, using multiple devices is inefficient for them and costly for healthcare organizations. Unfortunately, many physicians are simply giving up on mobile computing altogether, as the value that the technology provides is negated by the workflow interruptions that go hand-in-hand with trying to use a number of different devices throughout the day.

The Ultimate on-the-go alternative

With the introduction of the Microsoft Surface Pro 3, physicians are finally getting what they have been so ardently looking for. This product has quickly shown to be a single-device solution that provides physicians with everything they need in one small form factor, essentially replacing desktops, laptops and traditional tablets.

“Much about achieving excellence in healthcare delivery is about efficiency and effectivity. From a device management and workflow perspective, the fact that our clinicians now do not have to juggle multiple devices with legacy workstations, clunky laptops and often disjointed experiences with separate tablets is huge,” said Rasu Shrestha, MD, chief innovation officer at UPMC. “It’s not just less of a headache to be able to combine the form and functionality from these disparate devices into one device, it is actually more efficient and effective in the everyday work that we do as clinicians.”

In designing Surface, Microsoft addressed the deficiencies of traditional tablets – smaller screens and difficult-to-navigate pens that make selecting small icons and filling out forms difficult. Surface’s precision-designed stylus and high-resolution screen allow physicians to interact with their EMRs on the tablet as easily as they do on their desktop workstations.

Perhaps most important, Surface Pro 3 is embedded with a complete Windows operating system and the ability to integrate full versions of legacy EMRs, thus simultaneously offering physicians both true mobility and access to comprehensive patient information at the point of care. Many other mobile devices, specifically those running on iOS or Android platforms, fall far short as they are only able to run mobile “light” versions of EMR applications, which provide limited functionality and don’t provide what physicians need throughout their day.

“Combining full EMRs with the tablet functionality and pen is a game changer, and the accuracy of the Surface stylus lets our mobile users work on applications that aren’t traditionally touch-friendly,” said Sean Updegrave, director of partner experience and innovation at Seattle Children’s, a pediatric hospital that uses an EMR from Cerner Corporation.



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Nick Patel, MD
Internal Medicine Director
Palmetto Health

With this superior design, the Microsoft Surface 3 is revolutionizing mobile care for today’s physician community in seven key ways:



1. Improving the physician experience: Physicians don’t want to struggle with technology. Until now, however, that’s exactly what they did. Physicians routinely wrestled with cumbersome computer workstations, juggled multiple devices in the patient exam room and continuously logged into and out of various applications as they moved from station to station.

“We had been using a wall system. It was rather bulky. It often put our backs to our patients and they don’t like that,” said William Robinson, MD, a former Palmetto Health physician. Palmetto Health, which uses an EMR from Cerner, is South Carolina’s largest non-profit healthcare resource.

Switching over to the Surface Pro 3 has improved the doctors’ mobile-computing experience at the health system. In addition to providing a form factor that encourages interaction with patients, doctors now can move about their facilities without worrying about all the stopping and starting associated with multiple log-ins. “When I walk in a room, I am ready to engage with the patient,” said Nick Patel, MD, internal medicine director at Palmetto Health.



2. Accommodating physician preferences: The Surface Pro 3 accommodates the different ways physicians work and their technology preferences. The Surface Pro 3 includes pen and touch options, handwriting recognition, a snap-on keyboard and USB connectivity for microphones and other input devices. “Because healthcare is so data-intensive, and because one of the barriers to adoption of electronic systems is the burden of data input, Surface offers every option a physician might need,” said Bill Crounse, MD, former hospital CIO and Microsoft senior director of worldwide health. “It’s a laptop and a tablet all in one, and its flexible functionality has been very well received by our users,” Updegrave added.

The ability to use a pen to enter notes, sign documents, select small menu items and annotate images is a big plus for doctors, according to Maida Chen, MD, director of the Pediatric Sleep Disorders Center at Seattle Children’s Hospital. “One of the really attractive features is the pen option. When we have very quickly evolving situations with patients, jotting down notes is still the way most clinicians go,” she said. “The fact that we can electronically [document care] with the ease of a pen that is incredibly responsive ... it is something that would revolutionize our practice here.”



3. Meeting demands at the point of care: Along with its accurate, flexible input options, Surface supports full-scale EMRs as well as the ability to run applications that enable EMR integration at the point of care.

UPMC, Pennsylvania’s top-ranked hospital and winner of Hospital & Health Network’s Innovator Award for 16 consecutive years, was one of the first providers to leverage these features.



"Our doctors using Surface have seen the greatest savings with one to 1.5 minutes per patient visit...it has the potential to provide one to three additional visits per doctor per day."

Brock Morris
Chief Information Officer
Pediatric Associates

To provide physicians with comprehensive patient records and enable point-of-care data entry, UPMC's Technology Development Center created Fluence, a Windows-based software platform that presents consolidated data from multiple legacy, full-scale EMRs. Initially, UPMC spent more than a year trying to develop the platform for the iPad, but then ultimately found that they needed to leverage Surface Pro 3's Windows operating system to achieve this much-sought-after EMR integration. UPMC leverages this feature to provide a consistent, touch-friendly user experience as its physicians access data from a Cerner EMR that is used in inpatient departments, an Epic EMR that is utilized in ambulatory facilities and a Varian EMR that operates in the oncology department.

"The Fluence platform seamlessly interacts with legacy EMRs, and this level of integration was something we sorely missed in our original development on iOS, piloted on the iPad," Dr. Shrestha said. "While the iPad did provide touch and data visualization, it was impossible to natively run legacy EMRs on the device and achieve any level of interoperability between the mobile and desktop applications. This experience is supreme on the Surface Pro 3."

With the ability to toggle between multiple legacy record systems and consolidate those multiple systems, UPMC's physicians can quickly review patient information before they enter the exam room. They can also immediately create content and place orders in any of their EMRs via their Surface Pro 3 as they collect new information from patients – without having to seek out a separate workstation.



4. Enabling greater productivity: By giving physicians the ability to access data at the point of care, Surface is helping them to become more efficient, thereby allowing them to see more patients per day. To quantify this productivity increase, Pediatric Associates, a physician-owned practice with more than 80 providers across eight locations in the greater Seattle area, conducted an extensive time-motion study of its physicians using Surface and other mobile devices to access its EMR from Greenway Health. For example, the study found that using the Surface reduced the time it takes to document blood pressure by 33 seconds and the time it takes to document body temperature by 13 seconds.

"Our doctors using Surface have seen the greatest savings with one to 1.5 minutes per patient visit," said Brock Morris, Pediatric Associates chief information officer. "With an average of 25 to 30 patients per physician per day and appointments scheduled in 10- and 20-minute blocks, it has the potential to provide one to three additional visits per doctor per day."

A reduced focus on information gathering also allows physicians more time for patient interaction, making each visit more productive. "I used to play more the role of a detective than a doctor, always having to dig for information before I could make a decision," said Dr. Shrestha. "The Surface Pro 3 and Fluence have really eliminated the detective work needed to dig through back-end systems and have allowed us to better interact with patients during visits."



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Edward Zabrek, MD

East Bay Perinatal Medical Assoc.
Founder, mHealth Advisors

Additionally, Surface’s dual functionality as a laptop and tablet saves physicians time on follow-up tasks that would otherwise require different devices with multiple log-ins. “Once our physicians are done with their rounds, they can dock the Surface and carry on with their work on the same device,” Dr. Shrestha said. “This is the epitome of productivity in the clinical-care setting.”



5. Enhancing accuracy: Improving physician productivity in turn allows for greater EMR accuracy. Indeed, physicians can more accurately document care if they do so during the patient visit or shortly thereafter. When a considerable amount of time elapses between the visit and documentation, accuracy is likely to suffer, according to Palmetto Health’s Dr. Patel. “With Surface I’m getting all my documentation done during patient visits instead of waiting until lunch or after hours,” he pointed out.

With the ability to question patients during the data-entry process – and even fill in gaps and correct old mistakes based on their input – Surface users can also create more complete data sets over time. “If I have 30 patients to see, and I’m recording everything at a workstation later on, there might be three or four questions I forget to ask each patient,” said Edward Zabrek, MD, an OB-GYN who accesses the EPIC EMR on Surface.

“With Surface, I can ask all of those questions in the first encounter and make sure I haven’t missed anything or gotten anything wrong,” said Dr. Zabrek, who is also the founder of mHealth Advisors, a consultancy for mobile device solutions in healthcare.

Ultimately, complete, accurate and up-to-date data sets enable physicians to draw more meaningful conclusions and improve the quality of care for individual patients and entire populations. “These capabilities finally allow us to practice the reality of value-based healthcare and evidence-based guidelines,” noted Dr. Shrestha.



6. Simplifying device management: Aside from its benefits for physicians, Surface offers simpler and more cost-effective device management compared to the iPad. “It’s been relatively little work to integrate this whole new device into our IT system,” Updegrove said. “I can use all the software for managing my desktop and server environment to also manage Surface.” Without the need to create separate group policies and security infrastructures for Windows-based and iOS-based devices, healthcare providers can spend far fewer resources on deployment and upkeep.

Surface also simplifies security for providers using cloud-based services – an increasingly necessary step in making software adoption manageable and affordable. “Using the cloud means you don’t need an army of IT people to keep your applications up and running,” Dr. Crounse said. “Still, you need a device such as the Surface Pro 3 that offers robust wireless connectivity that’s as fast and rich but also as private and secure as an on-premise service.” To that end, Microsoft has enabled IT administrators to leverage Windows’ cloud-syncing capabilities on Surface to provide the necessary speed and data security for physicians using third-party applications.



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Senior Director of
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7. Making patients happy: Because Surface enables face-to-face communication, physicians can add a more personal touch to their interactions with patients. “With a desktop workstation you’re interfering with that bonding experience,” said Dr. Zabrek. “The input of data into the Epic EMR on the Surface is unobtrusive, and you’re able to look patients in the eye.”

Patients also appreciate the longer interactions afforded by physicians’ ability to review their information just before their visits begin. “From a mobility standpoint, one of the biggest benefits is more time with patients,” Morris said. “We can save time and still give better service during each interaction.” Avoiding the lengthy log-in sequences often found on room-based workstations likewise reduces wait times and prevents patient visits from becoming back-logged.

Additionally, physicians have found that Surface Pro 3’s capability to run full versions of visualization tools enhances their ability to clearly explain diagnoses and treatments. “The mobility of Surface allows our physicians to show patients their health stories with visuals and graphs, and get them more involved in their own health,” Dr. Shrestha said. “That brings their stories to life and goes a long way in positively impacting the delivery of personalized care.”

The Right choice

With all of these advantages, it’s easy to see why healthcare organizations across the country are successfully deploying Microsoft’s Surface Pro 3 – and why they are happy with the results. The ability to leverage one singular device for all computing needs enables healthcare organizations to simultaneously save money, improve care and enhance patient satisfaction. In addition, Surface Pro 3 provides the sleek form factor and ease of use that physicians want, along with the ability to provide access to the complete gamut of fully functioning EMRs. Lastly, Surface Pro 3’s clinical-grade components and functionalities – Intel® Core™ processor, full version apps, sanitization, keyboard access, security, durability, integrated ports, electronic signature and progress note capture, ability to securely share device across multiple caregivers – provide the performance, reliability, security and productivity that set it apart from other tablets on the market. Of course, Surface Pro 3 has a positive effect on the most important interaction of all: between doctor and patient. And, that is how this one device is revolutionizing the entire healthcare computing experience.

¹ 3rd Annual HIMSS Analytics Mobile Technology Survey, Final Report, February 2014, p. 36.

² Epocrates. 2014 Mobile Trends Report, 2014, p. 3.



About Microsoft:

Microsoft Surface tablets provide today’s clinicians with instant and secure mobile access to patient health records through fully functional, clinical-grade devices – all to provide better care for patients. With continual scrutiny on escalating medical costs, healthcare providers have to balance business efficiencies with building patient relationships. Equipped with Surface, physicians and nurses now carry one device wherever they go. With Surface, healthcare providers focus less on their technology...and more on their patients.

For more information about Microsoft Surface, please visit: www.surface.com.