

## Features healthcare professionals need.

The Microsoft® Surface™ Pro 3 powered by Intel® offered more features for everyday healthcare tasks than the Apple® iPad Air™.



View multiple apps simultaneously



Print documents\*



Create tasks with speech-to-text\*



Pin tasks to start screen for easy-access notifications



Organize workflow with multiple dashboards\*

\*in Allscripts Wand™ for TouchWorks® app

\*in VitalHub® Chart

Every day, technology improves productivity in professional fields around the world—and healthcare is no exception. As doctors, nurses, and other healthcare professionals integrate technology into their daily tasks, they learn which features help them most. Increasingly, their discoveries suggest that touch-enabled devices and the apps that run on them—which can provide new levels of freedom and flexibility—are more effective than traditional laptops. Because these touch devices vary considerably and professionals want a device on which they can standardize, it is important to select the right one. The Intel processor-powered Microsoft Surface Pro 3 offers a great deal in the way of features, functionality, and versatility.

At Principled Technologies, we researched the wants and needs of healthcare professionals considering new touchscreen devices. We conducted interviews with a group of physicians, nurses, and other healthcare professionals to learn about how they use technology in their workflow. Then we compared the capabilities of an Intel processor-powered Microsoft Surface Pro 3 and an ARM®-based Apple iPad Air to see which device could offer more to these workers and their colleagues.

In our hands-on testing, we found that the Surface Pro 3 offered more features for healthcare professionals than the iPad Air, including multitasking, printing capability, and built-in support for speech-to-text dictation. The Surface Pro 3 also provided greater functionality in many of the apps we tested—including Allscripts Wand for TouchWorks and VitalHub Chart. If you're integrating touch-enabled devices into your medical practice, the Intel processor-powered Surface Pro 3 can offer a better experience.

## MORE FEATURES FOR HEALTHCARE PROFESSIONALS WITH TABLETS POWERED BY INTEL

Healthcare professionals perform a wide variety of tasks in a typical day. A full-featured device that can make the most of software tools helps healthcare workers do their jobs in tasks such as making a clinical visit, doing rounds, or giving a presentation. It can also be a valuable tool for communicating with patients.

We set out to determine how healthcare professionals currently use touch-enabled devices, and how they would like to use them in the future. We interviewed professionals representing the following groups:

- Primary care providers working in a private practice
- Registered nurses working in a hospital
- Orthopedic surgeons operating in a private practice
- Cardiologists operating in a hospital
- Pharmaceutical sales representatives

We found that these individuals needed their devices to do a great deal, including providing easy and intuitive access to electronic health records (EHR); data entry; multitasking capability for switching between patient charts and faxed documents; and printer connectivity for printing lab results, charts, and forms. In addition to these basic needs, the professionals we interviewed also talked about the capabilities their ideal device would offer: voice-to-text technology for dictating notes and tasks, support for external monitors so they could make presentations from a touch-enabled device, and workflow customization and optimization options.



Based on our interviews, we determined that one of the most important things a healthcare worker needs in a device is versatility. With this in mind, we compared the following two devices and noted features that the healthcare workers might use in their daily workflow:

- **Surface Pro 3**, powered by an Intel Core™ i5 processor, running Microsoft Windows® 8.1, with Type Cover
- **Apple iPad Air**, powered by an ARM-based Apple A7 processor, running iOS 8.0.2, with Logitech® Ultrathin Keyboard Cover

Both systems have user interfaces designed for touch, similar display sizes, and detachable keyboards. For detailed information on the tablets, see [Appendix A](#). For more on how we compared features, see [Appendix B](#).

## GENERAL FEATURES

The two devices we examined, the Surface Pro 3 and the iPad Air, differ in both hardware and resource capacity. For example, the Intel Core i5 processor-powered Surface Pro 3 features a USB 3.0 port, which can benefit healthcare professionals when they need to transfer files from a USB drive quickly. The iPad Air lacks a USB port. The Surface Pro 3 also included the Surface Pen, a stylus that enables users to navigate the OS and information-dense apps more easily. The iPad Air included no such feature. Figure 1 presents the general hardware features of the two systems.

	Microsoft Surface Pro 3	Apple iPad Air
Rear camera (MP)	5.0	5.0
Front camera (MP)	5.0	1.2
Display size (inches)	12	9.7
Resolution	2160 × 1440	2048 × 1536
Pen input	✓	✗
USB 3.0 port	✓	✗
microSD™	✓	✗
Battery capacity (Wh)	42.2	32.4
RAM (GB)	4	1
Docking station port	✓	✗
Support for multiple external displays	✓	✗
Integrated stand	✓	✗

Figure 1: The tested tablets and their hardware features.



## WHAT WE FOUND

Healthcare professionals want technology that can simplify their daily routines, potentially freeing time for communication and interaction with patients. When we interviewed professionals from across the industry and asked them how they currently use technology in their workplace, we found that they want a device that runs feature-rich versions of necessary apps, such as Allscripts Wand, and common productivity software, such as Microsoft Word and PowerPoint®.

## Electronic health records: Allscripts Wand

Allscripts Wand for Windows and Allscripts Wand for TouchWorks are electronic health records systems available for both the Windows and iOS platforms, respectively. The applications are designed for physicians and nurses using touch-enabled devices in a hospital or clinic setting.

While the general functionality of the apps was similar across the Windows and iOS platforms, we noticed significant features missing from the Apple iPad Air. For instance, only the Surface Pro 3 supported document printing within Allscripts Wand. That means that if you wanted to print lab results with the iPad Air, you would have to rely on a workstation or another printing-capable computer. While both platforms allow the user to create and assign tasks, only the Surface Pro 3 enabled us to use speech-to-text input to do so. Figure 2 lists the Allscripts Wand features that we found to be useful to healthcare professionals based on our interviews, and how the Surface Pro 3 and iPad Air compared in their support of those features.

Allscripts Wand		
	Microsoft Surface Pro 3	Apple iPad Air
Document printing	✓	✗
Pin tasks to start screen	✓	✗
Display graphs of patient vitals	✓	✓
Windows semantic zoom <sup>1</sup>	✓	✗
Create and assign tasks	✓	✓
Speech-to-text input for task creation and assignment	✓	✗
Dictation for patient documents and notes	✓	✗

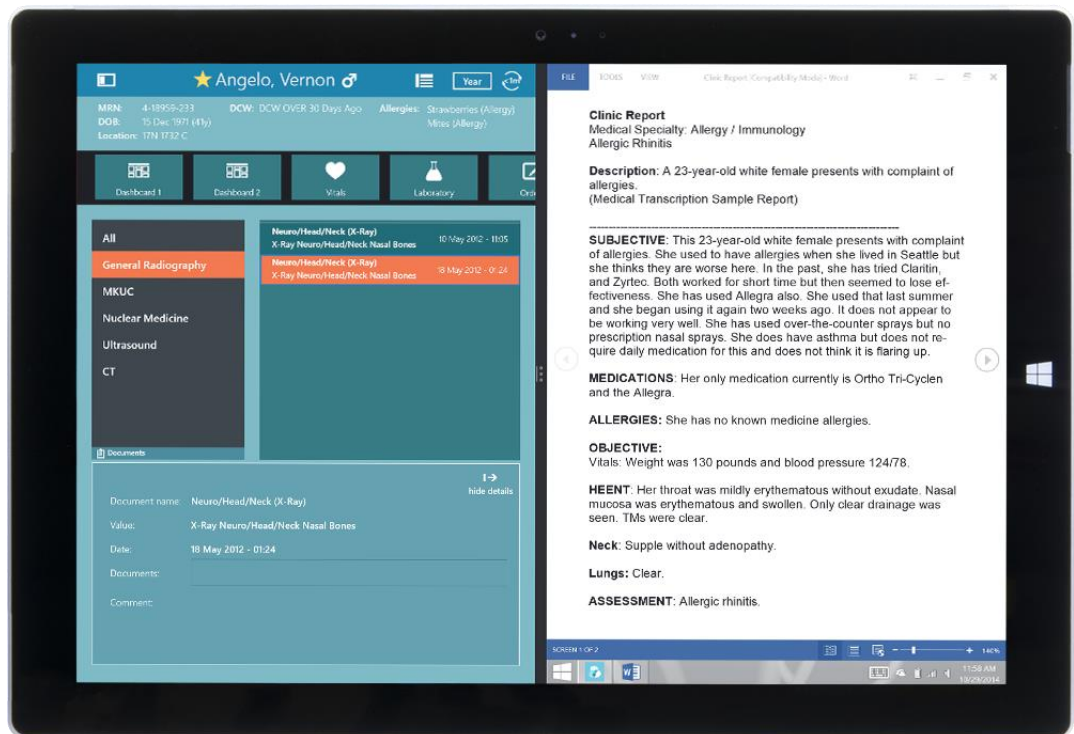
**Figure 2: Feature capability comparison between the Microsoft Surface Pro 3 and Apple iPad Air using Allscripts Wand for Windows and Allscripts Wand for TouchWorks.**

<sup>1</sup> [msdn.microsoft.com/en-us/library/windows/apps/dn468034.aspx](https://msdn.microsoft.com/en-us/library/windows/apps/dn468034.aspx)

## Electronic health records: VitalHub Chart

Similar to Allscripts Wand, VitalHub Chart is another electronic health records system that we looked at in order to compare the capabilities of the Surface Pro 3 and iPad Air. The app provides a database for storing, updating, and reviewing patient vital statistics.



When running VitalHub Chart, we found the Surface Pro 3 to be more full-featured than the iPad Air. For instance, the application divides patient information into different categories and displays them on a customizable dashboard. While the version on the iPad Air allowed customizing patient dashboards, we could not save and display different dashboard presets as we could with the Surface Pro 3. When it comes to multitasking, the Surface Pro 3 clearly had the advantage, as we could display the VitalHub Chart application alongside PDF and Word documents. If you wanted to read a document for a patient while viewing their chart with the iPad Air, you would have to switch back and forth between the full-screen app and the document. Figure 3 illustrates how the Surface Pro 3 and the Windows 8 user interface enabled us to view more than one thing at a time.



**Figure 3: An example of how the Surface Pro 3 displayed apps side by side, which allows users to view desktop applications and documents alongside touch-optimized Windows Store apps. The iPad Air could only show one app at a time.**

With the Windows Charms bar, which appears when you swipe from the right edge of the screen, we could search from anywhere in the VitalHub Chart app. With the iPad Air, we found that if we wanted to search for a patient from a certain screen, we had to first return to the app's home screen to find the search bar. With the Surface Pro 3, we could search for patients from any screen within the app, making the workflow easier and less time-consuming.

Figure 4 lists the VitalHub Chart features that we found to be useful to healthcare professionals based on our interviews, and how the Surface Pro 3 and iPad Air compared in their support of those features.

VitalHub Chart		
	Microsoft Surface Pro 3	Apple iPad Air
Customize and edit dashboards	✓	✓
Support for multiple dashboards	✓	✗
View VitalHub and another app at the same time (multitasking)	✓	✗
Search for patients from anywhere in the VitalHub Chart app	✓	✗
View lab history as a timeline	✓	✓
List patients from anywhere in the VitalHub Chart app	✓	✗



**Figure 4: Feature capability comparison between the Microsoft Surface Pro 3 and Apple iPad Air in VitalHub Chart.**

## Productivity: Office 365 applications

We also looked at how a healthcare professional's experience might differ when using Microsoft Office 365™ productivity applications on the Surface Pro 3 and iPad Air. In our interviews with healthcare professionals, we found that while physicians and

nurses are seeing more and more of their workflow integrated into their EHRs, they still rely on Microsoft Office applications, including Word, PowerPoint, and Excel®, to write summary reports, give presentations, and collect administrative data.

Although the Office apps for iOS have gained functionality, we still found crucial features missing on the iPad Air. Healthcare professionals must be able to encrypt and decrypt documents to protect patient privacy, but we found that we could not password-protect Office documents in the Office for iPad apps on the iPad Air. When it comes to hosting presentations and multi-tasking, the Surface Pro 3 had a clear advantage with its Mini DisplayPort, which enabled projectors, TVs, and monitors to plug directly into the device. The Surface Pro 3 also supported multiple external monitors with DisplayPort daisy-chaining.<sup>2</sup> Figure 5 shows how the Surface Pro 3 and iPad Air compared in their support of features in Office 365 productivity applications.

Office 365 productivity applications	 Microsoft Surface Pro 3	 Apple iPad Air
Save Word and PowerPoint presentations locally as PDF files	✓	✗
View multiple Office apps and documents simultaneously	✓	✗
Encrypt Office documents with a password	✓	✗
Support for custom fonts in Word	✓	✗
Mini DisplayPort for connecting to an external projector or monitor	✓	✗
Connect multiple monitors or TVs	✓	✗

**Figure 5: Feature capability comparison between the Microsoft Surface Pro 3 and Apple iPad Air in Microsoft Office 365 productivity applications.**

<sup>2</sup> [www.microsoft.com/surface/en-us/support/music-photos-and-video/connect-surface-pro-to-a-tv-display-or-projector#Daisy-chain](http://www.microsoft.com/surface/en-us/support/music-photos-and-video/connect-surface-pro-to-a-tv-display-or-projector#Daisy-chain)

## SURFACE PRO 3 OPTIONS AND ACCESSORIES

For users who want to boost productivity, peripherals can be extremely useful. Based on our interviews, we identified two accessories for the Surface Pro 3 that could enable healthcare professionals to work and communicate more effectively.

- **Surface Pro 3 Docking Station.** This device offers additional connections for HD monitors, wired networks, external keyboards, printers, and built-in charging. Healthcare workers can plug into what they need.
- **Socket Mobile 7XiRx.** A Bluetooth®-enabled, cordless hand scanner for scanning medications and patient identification bracelets, this device features an antimicrobial coating for use in hygiene-sensitive environments such as clinics, hospitals, and research facilities.

To learn more about the Surface Pro 3 Docking Station, see [www.microsoft.com/surface/en-us/accessories/pro3-docking-station](http://www.microsoft.com/surface/en-us/accessories/pro3-docking-station). To learn more about the Socket Mobile 7XiRx, see [www1.socketmobile.com/products/bluetooth-scanners/how-to-buy/details.aspx?sku=CX2864-1336](http://www1.socketmobile.com/products/bluetooth-scanners/how-to-buy/details.aspx?sku=CX2864-1336).

## AT THE END OF THE DAY

As touch-enabled technology makes its way into the medical and healthcare sector, it's important to choose the right device for your needs. In our interviews with physicians, nurses, and sales representatives, versatility emerged as the top priority; healthcare professionals are looking for a device that can help them perform all of the varied tasks that arise as they go about their daily work. Some touch-enabled devices offer important features—in terms of both hardware and software—that others lack. We found the Intel processor-powered Surface Pro 3 offered better feature support than the iPad Air, making it a better and more versatile choice for healthcare professionals.



## APPENDIX A – SYSTEM CONFIGURATION INFORMATION

Figure 6 provides detailed configuration information for the test systems.

System	Microsoft Surface Pro 3	Apple iPad Air
Processor	Intel Core i5-4300U	Apple A7
Processor (GHz)	1.9	1.3
Processor cores	2	2
Memory	4GB DDR3 RAM	1GB DDR3 RAM
Storage	128GB SSD	64GB SSD
Battery capacity	42.2 Wh	32.4 Wh
Display	12" (2160 × 1440)	9.7" (2048 × 1536)
Wireless	802.11 a/ac/b/g/n	802.11 a/b/g/n
Bluetooth	Bluetooth 4.0	Bluetooth 4.0
USB ports	1 × USB 3.0	None
System weight	1.76 lbs.	1.05 lbs.
Front camera	5.0MP	1.2MP
Rear camera	5.0MP	5.0MP
OS	Microsoft Windows 8.1	Apple iOS 8.0.2

Figure 6: Detailed configuration information for the two tablets.

## APPENDIX B – ABOUT OUR FEATURE COMPARISONS

We evaluated each device's feature capabilities by using the test applications (Allscripts Wand for TouchWorks, VitalHub Chart, and the Office 365 suite) and determining the most important features. We checked to see which features each device supported. For example, for determining printing support in Allscripts Wand for TouchWorks, we determined that the Windows platform was capable of printing documents while the iOS application had no option for printing.

## ABOUT PRINCIPLED TECHNOLOGIES



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We provide industry-leading technology assessment and fact-based marketing services. We bring to every assignment extensive experience with and expertise in all aspects of technology testing and analysis, from researching new technologies, to developing new methodologies, to testing with existing and new tools.

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We provide customized services that focus on our clients' individual requirements. Whether the technology involves hardware, software, Web sites, or services, we offer the experience, expertise, and tools to help our clients assess how it will fare against its competition, its performance, its market readiness, and its quality and reliability.

Our founders, Mark L. Van Name and Bill Catchings, have worked together in technology assessment for over 20 years. As journalists, they published over a thousand articles on a wide array of technology subjects. They created and led the Ziff-Davis Benchmark Operation, which developed such industry-standard benchmarks as Ziff Davis Media's Winstone and WebBench. They founded and led eTesting Labs, and after the acquisition of that company by Lionbridge Technologies were the head and CTO of VeriTest.

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