WHITE PAPER

The Mobile Professional in Healthcare:
Improving Care Team Collaboration and Performance
Through Unified Communication and Collaboration

Sponsored by: Microsoft

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IDC HEALTH INSIGHTS OPINION

Healthcare delivery and health management have always been communication intensive. But today's new payment models and growing case mix complexity require health professionals and teams to communicate and collaborate more quickly and seamlessly with colleagues within the enterprise. For the first time, care teams must perform as tightly knit multidisciplinary teams that collectively prioritize their efforts and resources on delivering better outcomes in less time and at a lower cost. Since these multidisciplinary acute and postacute care teams more often than not span multiple organizational boundaries, care professionals and teams also need to communicate and coordinate care beyond the enterprise walls, which requires both enterprise and federated unified communications and collaboration (UC&C) tools.

Enabling the demand for real-time communication and collaboration is the growing use of personally owned mobile devices by healthcare professionals who have become accustomed to easy-to-use communication and collaboration tools in their personal lives and see the potential value of using these tools with colleagues and care teams to improve the quality, cost, and experience of care. As healthcare professionals become increasingly connected via their lightweight mobile devices (e.g., smartphones, tablets, and convertibles), real-time communication and collaboration is feasible. This trend to bring your own device (BYOD) to work in healthcare creates additional challenges as healthcare professionals expect communication and collaboration to move seamlessly across fixed and mobile devices, whether personally or organizationally owned.

Key findings include:

- Electronic health records (EHRs), as they are architected today, lack true collaboration capabilities, resulting in clinician inefficiencies and dissatisfaction. According to a recent IDC Health Insights survey, the top 2 reasons for physician job dissatisfaction were related to being less productive – because more time was spent on documentation (85%) or because physicians were not able to see more patients (66%).

- Nearly half (49.1%) of dissatisfied or neutral physicians report that EHRs do not follow their workflows well, suggesting that healthcare organizations (HCOs) will need to invest in true UC&C and personal productivity tools to support effective clinician communication and collaboration.

- Fragmented communication and information handoffs between shift changes can result in suboptimal workflows, performance of redundant tests and, more importantly, patient safety issues. In fact, the Joint Commission Sentinel Event database reveals that poor communication is the root cause in nearly 70% of reported sentinel events, which it defines as unexpected events involving death or serious physical or psychological injury, or risk thereof, not related to the natural course of the patient's illness.

- On average, physicians use 2.7 devices above and beyond the multiuser workstations they repeatedly log in to and out of in the course of their workday. These devices range from laptops to smartphones and tablets to care for their patients, according to IDC Health Insights' *Clinical Mobility Buyer Behavior Study.* Thus communication and collaboration among clinicians and teams must move seamlessly between fixed and mobile devices and across computing platforms.

- Healthcare organizations are recognizing the economic and team collaboration advantages of cloud computing and are overcoming what were once deep-seated concerns that the cloud, especially the public cloud, was not secure enough for healthcare. Taking an incremental approach to the cloud, many healthcare organizations are now selectively migrating operational workloads to the cloud before moving mission-critical clinical applications. Collaborative applications are top candidates for this migration strategy; 21.4% of provider IT executives reported that they were currently delivering or planned to deliver collaborative applications via a cloud solution, according to IDC's *Global Technology and Industry Research Organization IT Survey.*

In This White Paper

This white paper is presented by IDC Health Insights and sponsored by Microsoft. The objectives were to:

- Gain insights into the healthcare industry, business, and IT challenges driving clinician adoption of enterprise unified communications and collaboration technologies.

- Highlight the benefits of leveraging cloud-based communication, collaboration, and social platforms to improve care team performance and the patient care experience.

- Describe high-impact healthcare use cases for UC&C, both within and beyond the enterprise walls.

SITUATION OVERVIEW

Enterprise UC&C Defined

Enterprise UC&C broadly defines a highly integrated communications environment within the enterprise that combines, or unifies, text, voice, video, and data communications in innovative ways to provide process and productivity improvement, along with opportunities to collaborate. It provides for real-time communications and collaboration based on the preferred method and location of the recipient and facilitates the incorporation of all information sources pertinent to the communication. The technologies to support UC&C can include email, telephony, voicemail, instant messaging (IM), video, SMS, team workspaces, real-time desktop and application sharing, social technology, and audio-, video-, and Web conferencing, which can be brought together in various combinations in real time and tightly coordinated. The benefits of UC&C are amplified in healthcare organizations in which professionals are highly mobile and communication between them is both critical and time sensitive.

The concept of presence is also a fundamental element of UC&C. Presence provides UC&C system users with real-time information about where the intended recipients of their communication are located and if they are available. If presence management is correlated to end-user profiles, then presence may also indicate which modality is best to reach the intended recipient. In effect, UC&C integrates (or "unifies") all the communication modalities that an individual might already be using and helps those systems work together in real time.

UC&C is moving beyond just combining voice communications and corporate email by including mobile services. Mobile UC&C merges voice and data utilizing smartphones and tablets. Increasingly, healthcare organizations are adding mobile services and communications-enabled applications — along with mobile access to content, such as patient data, diagnostic images, and video — to their UC&C deployments. Communication and presence-enabled line-of-business applications help streamline clinical workflow processes.

Federated UC&C Defined

Federated UC&C enables healthcare professionals and teams across organizational boundaries to use UC&C features such as presence, IM, and video to communicate securely in real time using various devices, even if their institutions have deployed different UC&C solutions. (Email and the public phone network are already federated; one simply needs the person's email ID or phone number to communicate with someone outside the organization.) Cross-organizational UC&C streamlines communications across entities within the medical trading area. In the United States, these entities might include those participating in an accountable care organization or patient-centered medical homes. In other regions of the world that have a more community focus on the delivery of care, these entities may include patient-centered medical neighborhoods.

PROVIDER PAIN POINTS DRIVING THE NEED FOR UC&C TOOLS

Fragmented Care and Communication Channels

With the shift from volume- to value-based payments, patients are now discharged "quicker and sicker" into a delivery ecosystem that was never designed to expertly manage and coordinate care beyond any single facility. And while incremental gains in EHR interoperability are making it easier for external stakeholders to share and access EHR data, the industry has shown little progress in the way of making electronic communications and collaboration sufficiently easier, secure, and seamless to bridge the critical points of communication and coordination failures — in part, because healthcare organizations do not invest in UC&C solutions as much as other industries do. By way of contrast, financial services, retail, and manufacturing firms spend two to almost four times what healthcare organizations spend on UC&C software. The mobility of clinicians within and beyond the enterprise presents additional challenges to the effective and timely communication and coordination of both acute and postacute care processes critical for patient safety and optimal, cost-effective health outcomes. Today, healthcare professionals use a number of different channels to communicate with each other. Many of them are distracting and take healthcare professionals away from direct patient care, such as in-person meetings, telephone calls, and faxing. Some are secure and others present vulnerabilities that could lead to violations of privacy and security policies.

Each channel has its own challenges:

- Voice calls and paging without the awareness of presence are particularly prone to disrupt the workflow of receiving health professionals. This needlessly delays responses and frustrates senders and recipients as frequent multiple missed calls and callbacks are required to reach the parties who need to communicate and/or confirm for the sender that the recipient received the message. Overhead paging can be disruptive to patients and is often inefficient as it assumes the paged party is in the building.

- Native mobile phone text messaging is fraught with potential security, documentation, and patient safety issues if used to communicate about patient care. Because native text messages are sent and stored as clear text to cell phones that may not be password protected or remotely erased in the event of reported loss or theft, personally identifiable health information may be visible to anyone who picks up or steals the device. To avoid violating privacy and security policies, some clinicians will try to communicate about a patient without divulging identifiers. This may lead to possible miscommunication between caregivers and the potential for patient safety issues such as misidentifying the patient being discussed and administering the wrong medication or dosage. Secure messaging within the UC&C solution reduces the need to acquire third-party secure text messaging solutions.

- Email can also be unsecure unless it is sent through secure channels such as a portal or encrypted, a step that can often be cumbersome because of third-party add-ons or a separate application or service, especially if the application is poorly designed or implemented. Its asynchronous nature also presents communication delays, since, for many busy clinicians, checking email throughout the day is not part of their regular workflow.

- Rogue and unauthorized use of cloud-based consumer document sharing and synchronizing sites by clinicians is common and places covered entities at risk for Health Insurance Portability and Accountability Act (HIPAA) privacy and security violations because proprietary files are stored outside the control (and most likely knowledge) of IT. Furthermore, consumer-grade services do not offer a business associate agreement (BAA). Document sharing and coauthoring for the purpose of collaboration among clinicians are typically limited and prone to version-control issues when clinicians provide their comments in a separately saved document.

- With an increased reliance on templating tools and the ability to cut and paste notes, clinician documentation can devolve from concise and logical notes to often longer, rambling notes that are hard for clinicians to parse through. So while EHRs make patient records more readily available than paper-based charts, it can be harder for clinicians to find the relevant patient information they are looking for within the EHR. Real-time synchronous communication among caregivers suffers as they must first take the time to wade through a sometimes unwieldy asynchronous communication channel that is the EHR. According to a recent RAND study sponsored by the American Medical Association, templated documentation is a real source of professional dissatisfaction felt by clinicians and a threat to clinical quality. Some physicians began to question the veracity of the entire health record because of the high volume of incorrect information introduced by using templates or macros to speed up the documentation process.

Fragmented communication and information handoffs between shift changes can result in suboptimal workflows, performance of redundant tests and, more importantly, patient safety issues. In fact, the Joint Commission Sentinel Event database reveals that poor communication is the root cause in nearly 70% of reported sentinel events, which it defines as unexpected events involving death or serious physical or psychological injury, or risk thereof, not related to the natural course of the patient's illness.

Complexities of IT, Consolidation, and Compliance

Healthcare IT by its very nature is complex. The IT portfolio is a heterogeneous combination of administrative, clinical, and operational applications running on different platforms and technologies as a result of best-of-breed technology-buying decisions and mergers and acquisitions (M&As) of other healthcare organizations. Even after rationalizing multiple EHRs to a single (or relatively few) "best of breed" vendor solution(s), the next M&A event adds to the complexity of the enterprise's IT portfolio. In some instances, it makes sense to reuse what the healthcare organization already has in place to leverage existing investments, and in other cases, rationalizing applications again is warranted.

Managing these siloed systems is expensive and requires IT resources with diverse skill sets to support the wide variety of technologies that can be in place. Developing interfaces between these systems is costly and time and resource intensive. Unfortunately, most healthcare organizations do not have the IT or financial resources they need to address these issues. The subsequent downward cost pressures are inhibiting innovation.
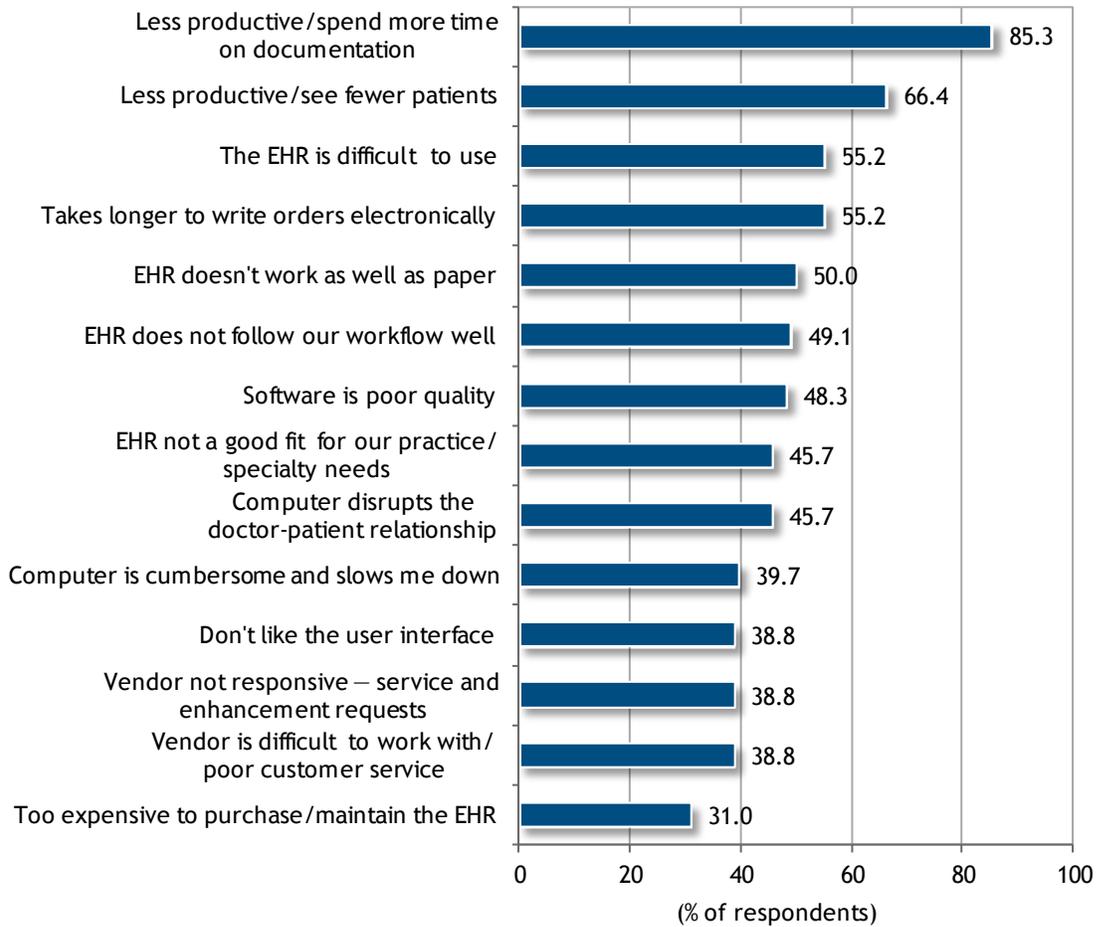
EHR Deployment and Clinical Workflow Inefficiencies

Healthcare organizations across the globe are similarly challenged to balance the widespread deployment of EHRs to meet the objectives of their healthcare organization and clinician usability. In the United States, the push to qualify for meaningful use certification (vendors) and incentive payments (providers) has accelerated the development and implementation cycles of electronic health records. Vendors and healthcare organizations alike are rushing to deploy their EHR solution to meet the next stage of meaningful use, often to the detriment of clinical workflows because EHRs do not natively support real-time UC&C-enabled workflows. So while EHR adoption has increased, workflow improvements are still rare, and EHR dissatisfaction is rampant (see Figure 1).

Figure 1

Reasons for EHR Dissatisfaction

Q. *What makes you dissatisfied with your EHR? Check all that apply.*

n =116

Base = dissatisfied and neutral EHR users

Source: IDC Health Insights' *EHR Satisfaction Survey,* 2013

Nearly half (49.1%) of dissatisfied or neutral physicians report that EHRs do not follow their workflows well, suggesting that healthcare organizations will need to invest in true UC&C and personal productivity tools to support effective clinician communication and collaboration.

Security, Privacy, and Compliance Concerns

The fear of not complying with privacy and security regulations is both a driver and an inhibitor. This is particularly true in the United States, where fines for violating HIPAA have become more stringent under the HIPAA omnibus ruling published in January 2013. The risks and liabilities associated with privacy breaches increase, and annual penalties for violations can total up to $1.5 million per provision, up from $25,000. Healthcare IT executives commonly report security as a major concern when evaluating cloud, especially public cloud, options. Nearly half (50.5%) of provider IT executives reported that customized service-level agreements (SLAs) or other security provisions for their industry would be required to move more of their infrastructure and applications to the cloud. In response to market demand, cloud vendors are increasingly willing to sign business associate agreements and service-level agreements to assuage these concerns.

BENEFITS AND COMPONENTS OF CLOUD-BASED UC&C

Benefits of Cloud-Based UC&C

Cloud-based solutions allow significant flexibility and cost savings derived from economies of scale over traditional approaches. A migration to the cloud enables the rapid deployment of healthcare IT and shifts the cost of IT from capital expenditure (capex) to operational expenditure (opex), thus providing budgeting flexibility since it becomes a line item in the IT budget rather than a capital expense that must be approved by the board. Accordingly, the cloud will be critical to support new, networked business models and modernize applications and architecture by providing a flexible, agile platform that supports near-term and future change. Cloud-based UC&C will play an important role in these new business models, which will require organizations to collaborate across the enterprise and with external stakeholders. The benefits of cloud-based UC&C are as follows:

- **Enables incremental migration by workload.** Healthcare organizations can selectively migrate workloads from on-premise to hybrid to an all-cloud deployment. Collaborative applications are top candidates for this migration strategy; 21.4% of provider IT executives reported that they were currently delivering or planned to deliver collaborative applications via a cloud solution, according to IDC's *Global Technology and Industry Research Organization IT Survey.*

- **Makes federated UC&C possible and more cost effective.** Consistent and connected communication and collaboration with external colleagues (and even patients, under certain circumstances) become possible wherever clinicians may be – in the hospital, the clinic, or their offices; at home on call; or somewhere in between. Clinicians can coauthor, share documents, and collaborate with colleagues from any device (PC, Mac, smartphone, or tablet) and any platform (Windows, iOS, or Android), making them more productive through timely and efficient collaboration.

- **Improves TCO through cost elimination.** Healthcare organizations can realize cost savings by moving from on-premise solutions to cloud-based solutions. These savings include reducing the costs associated with power and cooling, on-premise servers and server licenses, disk storage, and antispam and antivirus applications. Healthcare organizations can also take advantage of opportunity costs to redeploy IT resources from tactical, utility-type projects to more strategic initiatives. In addition, advanced software features such as eDiscovery and data loss prevention can help reduce legal and operational risks.

- **Frees up IT to focus on innovation.** Streamlining the provision and management of personal productivity tools and UC&C by moving these technologies to the cloud can help in diverting IT resources more appropriately to initiatives central to the core business of healthcare. Time that was spent on doing upgrades, installing service patches, and supporting the applications can be spent working on more strategic initiatives and focusing on innovation rather than maintenance.

12 USE CASES TO EXPLORE NOW

Healthcare organizations can use Office 365 to support a wide variety of operational and clinical workflows within, across, and beyond enterprise boundaries. Federation enables communication and collaboration with external parties. The ability to communicate with not only colleagues within the enterprise but other parties outside the enterprise is especially critical for complex care coordination, which requires multidisciplinary teams that cross organizational boundaries. Representative examples of workflows supported by Office 365 are provided in the sections that follow in two phases in order of what use cases would be easy to deploy first to get an "early win on the scoreboard," what can be accomplished next based on lessons learned and best practices gleaned from early initiatives, and then how the use of UC&C should be optimized beyond the boundaries of the enterprise.

Phase 1: Get an "Early Win on the Scoreboard"

Achieving success in a few well-chosen pilot projects will go a long way in ensuring buy-in from end users and building momentum for UC&C initiatives over the long term. Typical pilot projects include the following:

- **Care team collaboration.** Improved communication among team members and between care teams at hand-off points can help mitigate adverse medical events, achieve workflow and process improvements, improve staff utilization and productivity, and reduce patient length of stay and costs through efficiency gains. Care teams can create and share documentation about patients in common using a combination of SharePoint, OneNote, and SkyDrive. Healthcare teams use Lync to communicate through any channel — IM, voice, video, and online meetings — across any device. They can invite participants to join a voice conference or an on-demand multiparty videoconference from their contact care in the directory or from their "buddy list."

- **Remote worker integration.** Not all employees work within the "four walls" of the healthcare organization. Using Microsoft's Lync and Exchange, people working remotely can communicate easily with their colleagues using email, IM, and voice. With a click or tap, they can schedule a meeting to set up an audio- or videoconference call. Presence enables these communications to happen on demand with colleagues who are available for collaboration. Thus remote professionals are readily integrated into the on-premise environment.

- **Unstructured "notes to myself."** Because clinicians need to continually capture and keep track of large volumes of continuously changing data on each patient, most clinicians resort to handwritten, abbreviated notes and drawings on 3 x 5 note cards; folded pieces of paper; or notepads they carry with them at all times. While some of these notes will selectively be transcribed into the permanent medical record, most of them are appropriately omitted based on the level of contextual relevance. At the end of the shift, in the case of nursing, the notes are shredded or handed over to the next team for reference.

By running OneNote side by side with the full-function EHR on a pen-enabled tablet, clinicians can capture contextually relevant patient data on the same tablet they use for their EHR while mobile. Documentation is more natural and thorough because professionals can easily write notes while at bedside and use the input mode most convenient or natural to them – keyboard, touch, voice, pen, and drawings. And because handwritten and spoken notes can be converted to text, clinicians can selectively cut and paste notes from OneNote into the EHR, freeing them to spend more time caring for patients. Pen-to-text technology has come a long way over the past several years, which will improve adoption rates of this technology.

When care team notes are stored in SharePoint Online, it's possible for the entire care team to "see" what team members are recording about each patient in real time, which rarely happens today. This means that everyone on the team can be fully aware of what each team member is observing, can compare the observations of others with their own, accelerate patient flow, identify subtle trends or warnings earlier, and act on them earlier, potentially reducing the incidence of adverse events and hospital-acquired conditions.

- **Onsite and remote training and education.** Keeping employees abreast of new policies and procedures, whether they are administrative, clinical, or technical in nature, is time and resource intensive. Often, employees must travel considerable distance for in-person training classes, taking away valuable time from their work, patient care, or personal time. The high-definition multiparty videoconferencing feature provided by Lync, along with its archiving, on-demand replay, polling, and whiteboarding features, makes it possible to conduct training and education sessions online and remotely from any computer, saving staff time and money by avoiding travel.

- **Instant access to expertise.** In large healthcare organizations, especially those with multiple locations, it can be difficult to quickly identify who can respond to a given issue. Using the Skill Based Search feature of Lync or the IM an Expert download, users can identify people that possess certain expertise, even if they do not know them by name. For example, clinician areas of expertise could be recorded in the skills directory to help clinicians locate the appropriate specialist to request a consultation or refer a patient to. The skills directory could also be used to track languages spoken.

Phase 2: Leverage Best Practices and Lessons Learned from Early Projects

After the successful completion of the pilot phase, healthcare organizations should take stock of what they learned and apply these best practices to the next round of UC&C projects. Thus they will be able to build off of early success and deploy repeatable projects. Typical projects in this phase include:

- **On-call schedules.** Managing on-call schedules can be challenging as the lists and coverage times can be dynamic, with rapid changes to who is and is not available for a given specialty. Many, if not most, on-call physicians are not employees of the ED or hospital hosting the on-call schedule. Because the SharePoint-based on-call calendar and list are cloud based, it is easy to make updates available across the enterprise and with federation, so both employees and nonemployed clinicians can access and update the coverage schedule.

- **Clinical care guidelines and patient safety checklists.** Ensuring the consistent provision of high-quality patient care is essential to improving patient outcomes and safety and fundamental to Lean and Six Sigma process improvement. Using SharePoint, healthcare organizations can develop and share clinical care guidelines and patient safety checklists with clinical staff.

- **Raising patient satisfaction and HCAHPS scores.** In the United States, under the Patient Protection and Affordable Care Act of 2010, hospital reimbursements are influenced by patient satisfaction. Beginning with hospital discharges in October 2012, Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) performance have factored into the calculation of the incentive payments in the Hospital Value-based Purchasing Program. Improving patient satisfaction is a worldwide objective. A patient satisfaction scorecard can be created in SharePoint and stored in SkyDrive. Mobile devices that use keyboards, touchscreens, or stylus pens can be used to collect feedback daily about noise levels, room temperature, food, and interactions with staff, to name a few measures. Low scores will trigger alerts and suggest workflows to make corrections. The ability to monitor patient satisfaction while the patient is still hospitalized and make proactive improvements will help optimize reimbursement.

- **Discharge coordination and readmission prevention.** Careful discharge planning plays a critical role in coordinating care after the patient has been discharged, ensuring patient compliance with care treatment plans, and avoiding preventable readmissions. Additionally, efficient bed turnover helps avoid ER diversion and the subsequent loss in revenue when patients are sent to competing hospitals. Using SharePoint, care team nurses, social workers, discharge planners, care coordinators, and physicians can share documents and communications about patients they have in common. Unstructured notes can be captured online and shared in real time with care team members using OneNote. Presence identifies which of the patient's physicians are available to process the discharge paperwork, and communication via Lync's IM, voice, or video capabilities can be initiated with a click or tap, streamlining the discharge process considerably.

- **"Curbside" consultations.** Informal consultations, or "curbside" consults, are common practice between clinicians and are often used to seek advice from a specialist about appropriate diagnostic tests to perform or treatment plans or whether a more formal consultation is required. Clinicians can use the contact or skills directory and presence to identify available specialists and the fastest and best method to reach them. The curbside consult begins in Lync by posing a quick question via IM. If more information is required, the conversation can quickly move from IM to voice or video call with a single click or tap. If the specialist isn't immediately available for a curbside consultation or a formal consultation is deemed more appropriate, a mutually agreeable time can be quickly arranged via a short IM or call. Curbside or formal consultations can be scheduled in Outlook (or other calendaring systems) and later convened using Lync's voice-, video-, and/or Web conferencing capabilities, which enable clinicians to share views and control of EHR screen displays with each other in real time. Lync can also alert users when a colleague's status has gone from red (busy or not available) to green (available for consults).

- **Home health professionals.** With an increased focus on proactive transitional care management, reducing 30-day readmissions, and better chronic condition management, home healthcare services have become mission critical for healthcare delivery organizations. However, Medicare reimbursement rates for home care have been cut significantly, placing significant cost pressures on home health agencies and inhibiting investment in technologies to support professionals in the field. Microsoft's UC&C tools deployed in the cloud enables cost-effective communication and care collaboration. For example, a visiting nurse can use the back-facing camera on his tablet to take a photograph of a patient's surgical wound or capture a video that represents the patient's condition for immediate review and action by the attending or on-call physician. An on-demand videoconference can be initiated between the nurse, the patient's physician, and even family members using the federated capabilities of Microsoft Lync to coach the family on how to care for the patient and what to look out for in the way of potential complications.

- **Transitional care management.** Similar to discharge planning, transitional care management requires careful coordination and communication among care team members. Transitions can occur within units of the same facility to other care settings within or outside the enterprise (e.g., from the hospital to the rehabilitation hospital, which may or may not be owned by the integrated delivery system) or even to the patient's home. In some cases, the transition might need to occur urgently — if, for example, the patient's condition worsens, requiring either more specialized care in the hospital's intensive care unit or transfer from the community hospital to the tertiary hospital. Thus the federated capabilities of Lync, SharePoint, and OneNote are instrumental to coordinating transitional care management when it involves third parties.

- **Transportation queue management.** Delays in moving patients from one place to another — for diagnostic tests, procedures, or even to be discharged — can result in inefficient use of expensive resources, ER diversions because slow bed turnover, and low patient satisfaction scores, all of which in turn adversely impact revenue. Available transporters can be identified using presence and contacted via Lync's IM, secure text, or voice call capabilities.

Office 365: Enhanced Clinical Team Productivity, Communication, and Collaboration

The new Office 365, a cloud-based productivity application, works across any platform and device. Healthcare organizations can determine how they migrate to the cloud using Office 365. It might make sense for some users to continue to use on-premise services but to move mobile users to a hybrid or full cloud environment so that they can create, share, and access any document using their PC, Mac, smartphone, or tablet, no matter where they are. For example, a healthcare professional might create a document at work using her PC but then access it from her personal Android tablet when at home.

Office 365, a combination of UC&C and productivity applications, includes the following applications:

- **Exchange Online** enables users to share calendars and schedule meetings, regardless of the environment their mailboxes are in (e.g., on-premise, hybrid, or cloud) and the device they are using or the platform on which it runs (PC, Mac, Android, iOS, Windows). Enterprise features such as encryption information rights management, data loss prevention, in-place legal hold, and eDiscovery offer additional control over sensitive communications and ensure compliance with privacy and security policies.

- **Lync Online** provides high-definition multiparty videoconferencing in addition to instant messaging and voice over IP (VoIP) services and collaboration support. Collaboration is available through whiteboard documents where participants can share drawings and text, and make graphical annotations, and PowerPoint documents where participants can similarly edit and collaborate together on presentations. Presenters can use polling lists to organize polls, and participants can respond to the polls and see the results. Desktop and Windows application sharing enables colleagues to see and collaborate on a desktop screen or Windows application. Lync mobile clients are available on major smartphone platforms like iOS, Android, and Windows Phone, with the ability to support desktop or screen sharing on the mobile/smartphone client.

- **OneNote** is a pen-enabled digital notebook for capturing unstructured "notes to self," to-dos, meeting notes, and anything else professionals need to remember. Notes are automatically saved and synced in the cloud and can be accessed from any location in real time from any device or Web browser using OneNote, OneNote Mobile, or OneNote Web App through SkyDrive Pro.

- **SharePoint Online** stores documents and team communications, including email about a given project or function, in one place, which is referred to as SharePoint Team Sites. Through social networking in SharePoint, healthcare professionals can follow people, care teams, documents, and sites. Activity feeds keep team members apprised of what is going on. Site mailboxes are accessible between SharePoint and Outlook.

- **SkyDrive Pro** enables professionals within and across organizational boundaries to coauthor, review, and share documents in real time or asynchronously across devices. Users can work on shared documents such as clinical guidelines, checklists, reports, presentations, clinical and Lean/Six Sigma process improvement initiatives, or care plans in real time or in offline mode on their devices and then sync up again when reconnected to the SkyDrive. As part of the Office 365 service, SkyDrive Pro is an enterprise-grade product and offers regulatory compliance features that are covered by the BAA with Microsoft. In contrast, SkyDrive is the consumer version.

- **Mobile applications**. There are native iOS and Android mobile applications for Lync, OneNote, and SkyDrive Pro, thus giving users seamless productivity from most any device of their choice.

An important distinction of Office 365 over its competitors is that the healthcare organization owns and has full control over the data residing in Office 365. There is no advertising revenue model to access and use the service, so customers have complete control over who has access and how they can use the data. Office 365 is financially backed by a 99.9% SLA, another important consideration in light of steep fines for violations of privacy and security regulations.

FUTURE OUTLOOK

Challenges and Opportunities

The intense focus on EHR deployment by healthcare organizations across the globe presents a set of challenges for provider organizations looking to leverage their EHR investment and create a competitive advantage by providing quality care and improving clinician productivity by having better access to healthcare information. In the United States, the EHR vendors' focus on deploying the next version of their products to meet the requirements of Stage 2 and ultimately Stage 3 inhibits EHR product innovation. Many EHRs have not been migrated to more modern, nimble platforms, making them difficult to integrate with or extend by developing additional capabilities that could, among other things, enhance clinical workflow and improve care team collaboration. Worldwide, provider organizations that have invested heavily in their EHR systems are expecting a return on their investment but will likely be disappointed as most first-generation EHRs will fail.

IT complexity, industry consolidation, and the focus on deploying EHR systems have diverted attention and investment away from UC&C. The healthcare industry is behind other industries in adopting and leveraging UC&C to its full advantage. As highlighted previously, there are many benefits to deploying cloud-based UC&C alongside healthcare organizations' EHR systems.

Exploring Social Opportunities in Healthcare

The ability to harness social technology will increasingly play an important role in professional communication and collaboration with other professionals and consumers. According to IDC's *Global Technology and Industry Research Organization IT Survey,* 18%, or nearly one out of five, of healthcare respondents reported that they have integrated social software tools with their collaborative applications, including email and calendaring; another 18.1% said that they would do this within the next 24 months. Microsoft has made substantial investment in social collaboration:

- **Skype for telehealth communication.** In 2011, Microsoft acquired Skype, a freemium voice VoIP service with instant messaging capabilities. Voice- and videoconferencing calls are free between Skype members, while there is a modest fee for using Skype to call land lines or mobile phones, for text messaging, or to set up group video calls with up to 10 people. Given that Skype has crossed the 300-million-connected-user mark, possible use cases include consumer-to-clinician videoconference calls for follow-up questions and health coaching that are initiated by the consumer. Lync and Skype are federated products. Thus, Lync customers can have voice calls and send instant messages with Skype users across the globe.

- **Yammer for collaboration with colleagues.** Acquired in 2012 for $1.2 billion, Yammer is a private social networking site for business that fosters internal collaboration. Users can develop profiles of themselves to alert colleagues of their skills and expertise and what projects they are working on. Users can form groups around a project or an initiative, invite others to participate, post notes, share documents, and collaborate with members of that group. Yammer is being integrated into Office 365 in phases, starting with basic integration of the services, with fuller integration over time. Health professionals can use the communication and collaboration tools to support a variety of administrative, operational, and clinical workflows.

ESSENTIAL GUIDANCE

Other industries have addressed communication and collaboration challenges and have made the requisite investment in content, communication, collaboration, and social platforms. More than ever, HCOs need an agile, unified communications and collaboration infrastructure to empower clinicians and care teams to innovate together to uncover new ways to drive out the waste, waits, delays, missed handoffs, ineffective care, and operational inefficiencies to consistently deliver quality care to sicker patients. It is time for healthcare to make similar investments to leverage enterprise and federated UC&C and personal productivity tools to meet the demands of the new healthcare models in a postreform world. In addition:

- **Look to early adopters both inside and outside of the healthcare industry for lessons learned and best practices.** Early adopters of UC&C in healthcare are discovering, and deploying, innovative applications of UC&C that validate its benefits — applications that are likely to drive significant adoption in the short term. These include applications and mobile devices that combine voice, video, data, and text messaging to enable more efficient and more effective communications, improve staff productivity and care quality, and reduce cost.

- **Identify those communications processes that are highly inefficient.** These existing inefficient processes could be either asynchronous or synchronous communication methods. Asynchronous communications may include texting, paging, faxing, or communications within EHR systems such as documentation and messaging. Inefficient synchronous communications may include excessive or inefficient in-person meetings, disruptive communications, or those where first-attempt success rates are the lowest, where the time required to successfully complete the contact is greatest, and where the response delays are the longest and the consequences of those delays pose the greatest potential patient risks or represent significant avoidable costs or revenue opportunities.

- **Engage physician and nurse champions for clinical communication processes.** Identify clinical leaders who are well respected among their peers, not only for their clinical expertise but also for their thought leadership on matters where IT intersects with medicine. These clinical leaders will be instrumental in identifying clinical communication processes that would benefit from applying UC&C technologies and encouraging their peers to adopt new strategies to entrenched, but broken, processes.

- **Educate the user community about how UC&C can positively impact communications, collaboration, and innovation.** An informed user community will often use technology to solve its own challenges in ways that may surprise the "experts" but which can be very much effective. Identify case studies highlighting innovative UC&C applications at other provider organizations. Once the various UC&C components are in place, end-user teams can often devise their own communication processes and, through viral internal marketing of the solution, encourage other colleagues to adopt the solution for their own purposes.

- **Covered entities should consider business associates willing to sign a BAA.** Selecting a business associate who is willing to sign a BAA for just storing PHI (versus processing it, which requires a BAA) will help future proof a cover entity's cloud strategy. Covered entities should look for business associates that have proven programmatic competencies in security management and the technical expertise and financial resources to provide it. A business associate must be able to demonstrate that it can comply with not only the technical and physical safeguard requirements but also the administrative safeguard requirements of the HIPAA security rule. This is especially important given that nearly two-thirds of the breaches posted on the HHS Web site to date are related to loss and theft versus hacking or an IT incident. Standard security best practices should be well documented and audited for compliance. Other security standards to look for include ISO 27001 and, for members of the European Union (EU), compliance with the European Data Protection Directive.

PARTING THOUGHTS

The fast-paced, communication-intensive environment of healthcare, combined with a highly mobile clinical workforce, lends itself to using UC&C and personal productivity tools to collaborate with colleagues and care teams. Cloud-based UC&C enables a wealth of administrative, operational, and clinical workflows that can cross devices and platforms. Healthcare professionals can communicate with one another using their preferred channel and device, regardless of where they may be – in the hospital or ambulatory care setting, at home, or on the go. The effective of use of UC&C and personal productivity tools, such as those provided by Microsoft, will drive many process improvements in healthcare, most notably, improving patient safety and patient outcomes while reducing costs through productivity and efficiency gains.

ABOUT IDC HEALTH INSIGHTS

IDC Health Insights provides research-based advisory and consulting services that enable healthcare and life science executives to:

- Maximize the business value of their technology investments

- Minimize technology risk through accurate planning

- Benchmark themselves against industry peers

- Adopt industry best practices for business/technology alignment

- Make more informed technology decisions

- Drive technology-enabled business innovation

IDC Health Insights provides full coverage of the health industry value chain and closely follows the payer, provider, and life science segments. Its particular focus is on developing and employing strategies that leverage IT investments to maximize organizational performance. Staffed by senior analysts with significant technology experience in the healthcare industry, IDC Health Insights provides a portfolio of offerings that are relevant to both IT and business needs.

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