



WHITE PAPER:

HOW MOBILE UNIFIED COMMUNICATIONS TRANSFORMS CLINICAL WORKFLOWS

Gregg Malkary, Founder & Managing Director, Spyglass Consulting Group
Lance Mehaffey, MHA, Industry Programs Manager - Healthcare, ShoreTel



TABLE OF CONTENTS

Introduction	3
Key Market Trends Support Mobile UC Adoption	3
Communication Challenges Facing Healthcare Providers	4
The Solution: Mobile Unified Communications	5
How Mobile UC Enhances Clinical Communications	5
How Mobile UC Supports Facility IT Stakeholders	6
Use Case Scenarios of Mobile Unified Communications	7
Best Practices to Consider Before Deploying Mobilized Unified Communications	9
Conclusion	10
About the Authors	10
References	11

98%
of physicians interviewed
OWN & REGULARLY USE SMARTPHONES
as their *primary device* to support communications.¹

INTRODUCTION

As healthcare providers continually identify opportunities for clinical system improvement within their health facilities, inefficient collaboration within multi-professional teams is a major challenge. The fact is, when clinicians lack real-time access to one another and important health-related information, it negatively impacts workflow.

This paper outlines how mobile unified communications (UC) helps improve care team collaboration, care coordination, and the overall patient experience by supporting end user workflow actions with secure, easy-to-use mobile collaboration tools. Examples are included within specific workflow scenarios across three distinct provider environments. Industry trends and the current communication challenges facing providers are also identified. This white paper concludes with some best practices to consider when implementing mobile unified communications.

KEY MARKET TRENDS SUPPORT MOBILE UC ADOPTION

Physicians are mobile professionals. According to the U.S. Bureau of Labor Statistics, more than 950,000 licensed physicians are responsible for the delivery of patient care services and referrals. They are constantly on the move as they travel between and among offices, clinics, exam rooms and affiliated hospitals. They work in high-stress, data-intensive environments that require constant access to medical data and continuous real-time communications with colleagues, nurses, care team members and patients.

More patients are seeking health services. The demand for healthcare, coupled with a growing elderly population, has increased physician workloads. Many patients often require complex medical care involving multiple medical specialties. Physicians are under increased pressure to communicate, coordinate and document patient care more effectively across a wider array of associates.

Many clinicians are adopting smart devices to support clinical workflows. A recent Spyglass Consulting Group report noted that 98 percent of physicians interviewed own and regularly use smartphones as their primary device to support communications, manage their personal and professional workflows, access news and information, and browse the Internet for medical-related information.¹

Providers have an imperative to evaluate next generation solutions. It's vital to evaluate next generation UC solutions to support collaborative team-based care and address regulatory requirements introduced by the Affordable Care Act. This includes 30-day re-admissions penalties, pay-for-performance incentives and new patient-centered care models. Mobile UC enables teams to coordinate patient care more efficiently and drive more direct contact between patients and their providers. These capabilities directly support provider alignment with several key Affordable Care Act objectives.

COMMUNICATION CHALLENGES FACING HEALTHCARE PROVIDERS



Providers have under-invested in communications infrastructure. Despite advancements in mobile technology and UC, providers have under-invested in technologies that can support today's clinical workflow demands (i.e., closed-loop bi-directional messaging). Spyglass Consulting Group research has found that today, nearly 34 percent of physicians are still using legacy alphanumeric pagers to support communications, especially those involved in emergent medical specialties such as emergency/trauma, critical care, surgery and radiology.¹

Many clinical workflow bottlenecks and delays stem from the use of legacy collaboration tools, like pagers. Pagers provide only one-directional push notifications and do not support the real-time, directional messaging capabilities required by dispersed care teams. According to a study conducted by the Ponemon Institute², clinicians waste more than 45 minutes each day due to the use of pagers and other outdated communication technologies that do not effectively connect them to others. The lack of efficient collaboration cost the U.S. healthcare industry more than \$5.1 billion annually.



Communication breakdowns can be costly. As a part of measuring patient satisfaction, the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey for discharged patients measures patient satisfaction with their communication with facility staff and their overall responsiveness. Beginning in 2017, a hospital can risk losing up to 2% of its Medicare reimbursement if it does not achieve required patient satisfaction levels.³ When measured against median U.S. hospital revenue, millions of dollars per hospital are at stake.^{4,5} With a growing amount of revenue at risk, hospital leaders are looking for strategies to improve the patient experience and boost their HCAHPS scores. Mobilized UC solutions enable dispersed clinicians to interact more efficiently amongst themselves and with patients.



Physicians experience difficulties connecting with team members. Spyglass Consulting Group found that the majority of physicians experience difficulties connecting with nurses and other care team members. Facility-managed contact directories and on-call schedules are often out of date and inaccessible from mobile devices. This makes it difficult for physicians to know whom to call, when to contact them, or the best way to reach them. Additionally, physicians are often reluctant to share personal cell phone numbers and other contact information with colleagues for fear of receiving unwanted communications.



Ineffective communications can result in patient harm. Even more serious than the financial impact of inefficient communication is the direct impact on patient care delivery. The Joint Commission recently identified ineffective communications as the third highest root cause of sentinel events.⁶ In addition, the 2017 Joint Commission National Patient Safety Goals identified improved effectiveness of communication among caregivers as its number two goal.⁷



Clinicians are using unsecured text messaging to support patient care. The Spyglass Consulting Group found that 98% of physicians use their smartphone's integrated SMS messaging to support administrative and patient care activities, which pose a potential for HIPAA violations and subsequent fines for both physicians and affiliated organizations. Many physicians are not always clear on what constitutes patient health information or may lack the appropriate security measures to secure any electronically distributed protected health information (ePHI).

THE SOLUTION: MOBILE UNIFIED COMMUNICATIONS

ShoreTel offers a UC solution that helps providers improve access between clinicians, reduces inefficient communications and supports care delivery workflows. The ShoreTel Connect business communications solution helps providers achieve these benefits by enabling their care teams to collaborate using a diverse set of tools including: voice, instant messaging, conferencing and video; across an equally diverse set of devices including: PCs, smartphones, tablets and wearable technology.

HOW MOBILE UC ENHANCES CLINICAL COMMUNICATIONS

Efficient Team Access

Having ShoreTel Connect on a smartphone enables nurses to update their availability status (how best to be reached) with easy, one-touch buttons. This makes it easier for a care team to know the optimal method for reaching one another - a direct call, an instant message or video chat. Real-time access awareness greatly reduces frustrating communication lag time and the resultant delays to various workflows.

Reduce Phone Tag

When direct calls are not an option, clinicians can collaborate using the ShoreTel Connect instant messaging feature. This reduces the lag time of phone tag and also enables multiple staff to collaborate simultaneously using secured, encrypted messaging compared to less secure, carrier-based SMS texting on their personal smartphone devices.

On-the-Fly Care Team Calls

With a single “join” button from within the ShoreTel Connect app, dispersed staff can participate with care planning or other team-based calls. By referencing the user’s calendar, the “today” screen of Connect will list upcoming events. When a scheduled team call is close to starting, the “join” button turns green and users simply press it to join the call. This seamless, anywhere access enables staff to reduce time off the floor and maintain their mobility.

Eliminate Multiple Contact Numbers

Staff can utilize a single contact number regardless of their physical location. When a call is placed to a nurse’s office number, it will ring her mobile Connect app simultaneously. With the utilization of a single access number, the nurse can eliminate the need to carry and utilize multiple devices. This, in turn, enables the nurse’s facility to dramatically reduce cellular and other paging service expenses.

Smart Device Flexibility

Staff can leverage a mobile ShoreTel Connect app from facility-provided or personally-owned mobile devices. This enables use of a single converged device for both business and personal communications, without the need to share a personal mobile number to receive business calls on a personal mobile device.

Clinical Application Integration

A clinician using the ShoreTel Connect app on any PC or Mac can initiate a call directly from within a clinical application, website or medical portal containing phone numbers. This simple step makes placing calls more efficient by enabling users to stay within an application or website, without switching devices. Click-to-call functionality is just one of the many capabilities of Connect.

HOW MOBILE UC SUPPORTS FACILITY IT STAKEHOLDERS

BYOD Management

Using ShoreTel Connect's browser-based administrative program, facility IT teams can access the easy-to-use, web-based tool to assign and manage user permissions and access to ShoreTel Connect mobility features. The mobile Connect app is available for iOS and Android-based devices and integrates seamlessly and securely with users' own personal smart devices. This enables IT to support diverse user device preferences while managing a single application client across all devices.

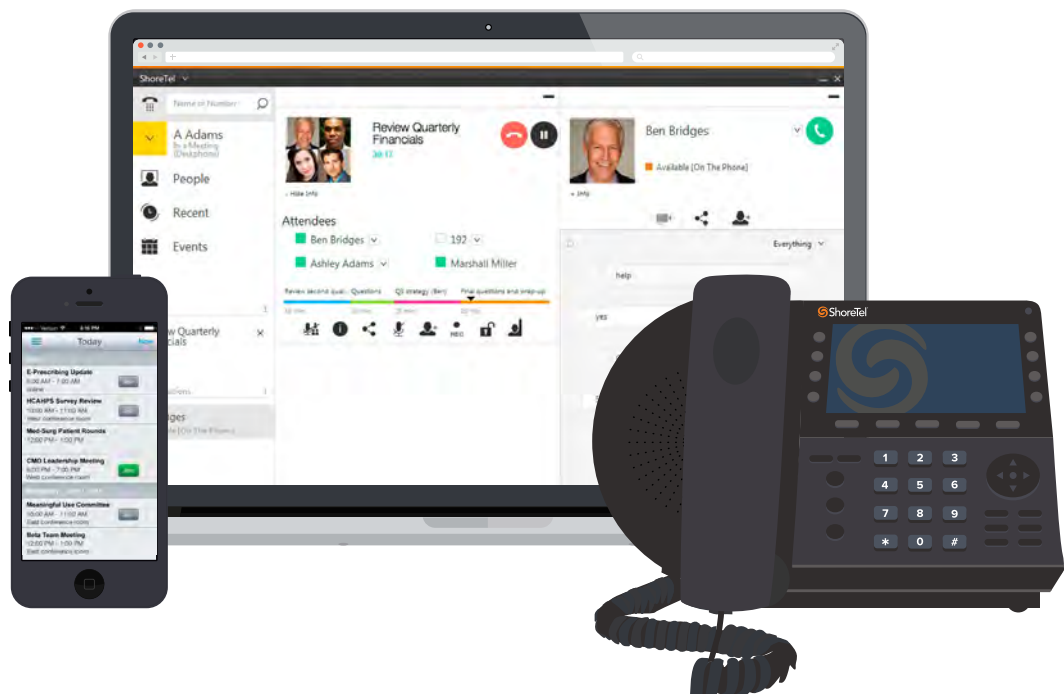
Deployment Flexibility

Facility IT teams will appreciate the deployment flexibility of ShoreTel Connect mobility. It can be deployed as a feature of either an owned, on-premises phone system (ShoreTel Connect ONSITE) or managed subscription service in the cloud (ShoreTel Connect CLOUD). ShoreTel Connect ONSITE systems are available as both solid-state hardware components as well as virtualized applications that can run in your data center.

Robust Security Features

With numerous security features, IT stakeholders can be assured that their ShoreTel Connect mobile voice and instant message communications are secured. Combining native strong device security, AES-256 encryption, user-level authentication, innovative digital certification and automatic initiation of application-layer SSL VPN (when users are outside of the facility firewall), ShoreTel Connect mobility ensures robust security features for security sensitive provider environments.

Additionally, adaptive location-aware policies and enterprise directory integration add to the solution's overall robust security, while maintaining system administration simplicity. The robust security features of ShoreTel Connect mobility directly support the overall HIPAA compliance efforts of covered entity (CE) organizations that are subject to HIPAA compliance audits.



USE CASE SCENARIOS OF MOBILE UNIFIED COMMUNICATIONS

The following three use case scenarios demonstrate the impact of ShoreTel Connect on clinical workflows and the numerous benefits that providers can realize when they enable clinicians with modern collaboration tools and capabilities.

USE CASE #1 | HOSPITAL PATIENT CARE COORDINATION

The Challenge:

To discuss and coordinate constantly changing patient care priorities, care teams scramble to access one another. They search outdated facility directories, ping the hospital operator for call transfers, rely on device and overhead paging, and take valuable time off the floor.

Step 1 | A nurse manager schedules and initiates a conference call-based meeting with just a few clicks within the ShoreTel Connect app on his office desktop computer.

Step 2 | A case manager receives a pop-up notification within the Connect app on her desktop computer. She is able to join the conference call by simply clicking the join button within the app.

Step 3 | An offsite attending physician joins the meeting from his smartphone loaded with a Connect app. He can access the “today” feature that lists his meetings and one-click access the conference with the “join” button that indicates the current meeting.

Step 4 | A nurse director uses an iOS tablet as her primary collaboration tool. She has the tablet charging on a ShoreTel Dock – which is also an all-in-one desktop phone with a dialing pad and handset. She joins the conference using the same, easy-to-use join feature and uses the speaker phone option of the ShoreTel Dock.

The Result:

Instead of spending unnecessary time coordinating a care team meeting or competing for limited meeting space, the team can accomplish meetings virtually and coordinate patient care more efficiently using the voice, IM and desktop sharing capabilities of ShoreTel Connect.



USE CASE #2 | MULTI-SITE CLINIC COLLABORATION

The Challenge:

Physicians and other clinic staff spend time across multiple locations - including community-based hospitals. Their ability to stay connected with their practices and other rotating staff is critical to maximizing patient treatment time.

Step 1 | During hospital rounds, a physician receives an incoming call notification on a Connect-enabled Apple® Watch and approves her patient's discharge.

Step 2 | She then instant messages the primary clinic nurse to update her about the discharging patient.

Step 3 | The clinic nurse accesses her smartphone to make a Connect-enabled call to the practice's scheduling coordinator.

Step 4 | The practice scheduling coordinator confirms the patient's post-discharge appointment with the nurse from a PC-based ShoreTel Connect app.

The Result:

Practice staff can rotate between locations and still utilize their practice-based VoIP system and their office number, rather than their personal mobile number. They can collaborate securely and efficiently while reducing expensive cellular services.

USE CASE #3 | EXTENDED CARE FACILITY TEAMS

The Challenge:

Extended care facilities utilize community-based professionals including licensed dietitians, physical /occupational therapists and local physicians to support their resident care programs. Without the ability to provide real-time updates regarding resident status, these professionals cannot optimize their time at a facility.

Step 1 | A rehabilitation nurse instant messages the facility's minimum data set (MDS) coordinator to get approval from the facility's medical director for additional PT treatments for several residents.

Step 2 | The MDS coordinator receives the IM and calls the medical director's office from her Connect desktop app.


Step 3 | The medical director's nurse receives the call on her smartphone loaded with ShoreTel Connect, and then instant messages the director on his smartphone, providing an efficient, closed-loop collaboration process for fulfilling requests from the facility.

Step 4 | The rehab nurse instant messages with the contracted physical therapist (who also received a mobile Connect app permissions from the facility) to confirm the upcoming therapy schedule.

The Result:

By utilizing ShoreTel Connect, facility and community-based professionals can collaborate more efficiently and avoid missed calls and delayed updates to resident care planning. The ability of community-based professionals to access facility staff through their use of ShoreTel Connect creates a teaming culture and goodwill between non-affiliated healthcare professionals.

BEST PRACTICES TO CONSIDER BEFORE DEPLOYING MOBILIZED UC

-  **Assess current workflows.** Examine all clinical and operational processes thoroughly. Identify where decision latency can be improved when staff have better communication. This step will also assist if a phased deployment is desired.
-  **Involve diverse departments in planning.** Involve clinical, informatics, IT and other ancillary department representatives to outline and agree upon an approach to implementing mobilized UC. Gather information about which roles and workflow processes in each department can be enhanced.
-  **Ensure your infrastructure can support mobilized UC.** Involve clinical, informatics, IT and other ancillary department representatives to outline and agree upon an approach to implementing mobilized UC. Gather information about which roles and workflow processes in each department can be enhanced.
-  **The mobile UC solution needs to be scalable.** Make certain that the mobile UC system's maximum number of users is well in excess of current personnel and can scale as facility expansions or provider acquisitions occur.
-  **Ensure interoperability with your current VoIP system.** Perhaps the facility's current VoIP system does not offer mobile UC options or the available solutions are limited. It is important to determine upfront if an alternative, third-party system will integrate to your facility's VoIP system.
-  **Consider overall system manageability.** It is essential that the management of the mobile UC system is easy and accessible via a web-based management system. Another critical element is the ease in which users can download and set up the mobility user app to their native devices. These steps should involve little-to-no assistance from facility IT staff.
-  **Native security features.** In addition to the various security protocols that facility IT will implement within the overall infrastructure, ensure the mobile UC solution enables key security features too. Examples of this would be voice call encryption, instant messaging encryption, and user access and authentication management, just to name a few. These types of security features directly support a HIPAA covered entity's overall compliance efforts.



CONCLUSION

Healthcare providers must address the challenges of inefficient collaboration within multi-professional teams. Existing communications tools (e.g., pagers) and processes are manual and inefficient. In turn, many clinicians bring their own smart devices to work to collaborate and exchange work-related data – which is not secure.

Provider organizations have an imperative to evaluate next generation unified communications solutions to support secure, efficient collaboration capabilities for their care teams. The ShoreTel Connect solution enables providers to establish a robust collaboration standard within their facilities.

ABOUT THE AUTHORS



Gregg Malkary

Founder & Managing Director, Spylgass Consulting Group

Gregg Malkary has over 20 years experience in the high technology industry working with Fortune 2000 companies to help them use information technology for competitive advantage. Gregg has domain expertise in mobile computing, wireless and broadband technologies with direct experience in the healthcare, government, manufacturing, communications and entertainment markets. Gregg is a frequent speaker at regional and national conferences focused on mobile computing, wireless technologies and healthcare related issues. Numerous industry publications have written about and quoted Gregg including *The Wall Street Journal*, *CIO*, *Business 2.0*, *MIT Technology Review*, *Network World* and *eWeek*.



Lance Mehaffey

Industry Programs Manager - Healthcare, ShoreTel

Lance Mehaffey has over 20 years experience in the healthcare and VoIP manufacturer industries. Lance has led healthcare vertical practices for the country's leading VoIP manufacturers. In his current role he is responsible for supporting the development and execution of healthcare go-to-market strategy within ShoreTel's Industry Programs Unit. Lance has also led operations as an administrator of healthcare facilities in Montana and Iowa, and held a leadership position with a national home healthcare services corporation, where he was responsible for the development and launch of skilled infusion and restorative therapy service business lines.

REFERENCES

- ¹ Spyglass Consulting Group report, Point of Care Communications for Physicians, 2014
- ² Ponemon Institute Report on the Economic Impact of Inefficient Communications in Healthcare, 2014
- ³ CMS.gov website – 2016
- ⁴ American Hospital Association. “Trendwatch Chartbook”, 2015 Edition
- ⁵ Beckers Hospital CFO, “35 Financial Benchmarks for Healthcare Executives”, July 1, 2015
- ⁶ Joint Commission Online, April 29, 2015
- ⁷ Joint Commission 2017 National Patient Safety Goals Presentation, November 22, 2016

FOR MORE INFORMATION

To find a ShoreTel representative, visit www.shoretel.com/findareseller

ABOUT SPYGLASS CONSULTING GROUP

Spyglass Consulting Group is a market intelligence and strategy firm focused on the nexus of information technology and healthcare. We deliver technology-related insights required for our healthcare-focused customers to make the right investment decisions related to mobile and wireless technologies.

SHORETEL. BRILLIANTLY SIMPLE BUSINESS COMMUNICATIONS.

ShoreTel® (NASDAQ: SHOR) provides businesses worldwide with communications solutions that make interactions simple. From business phone systems, unified communications and contact center solutions to a fully hosted voice and SMS development platform, ShoreTel delivers unmatched flexibility and ease for companies looking to increase productivity and drive innovation. ShoreTel offers solutions in the cloud, onsite or a hybrid of both, giving customers the freedom to choose the best fit for their business needs now and in the future. Headquartered in Sunnyvale, Calif., ShoreTel has offices and partners worldwide. For more information, visit shoretel.com.

World Headquarters
960 Stewart Drive
Sunnyvale, CA 94085
USA
shoretel.com

+1 (800) 425-9385 Toll Free
+1 (408) 331-3300 Tel
+1 (408) 331-3333 Fax

EMEA
Inspired
Easthampstead Road
Bracknell, RG12 1YQ
+44 (0) 1344 208800 Tel

APAC
8 Temasek Boulevard#41-03
Suntec Tower 3
Singapore 038988
+65 6517 0800 Tel

