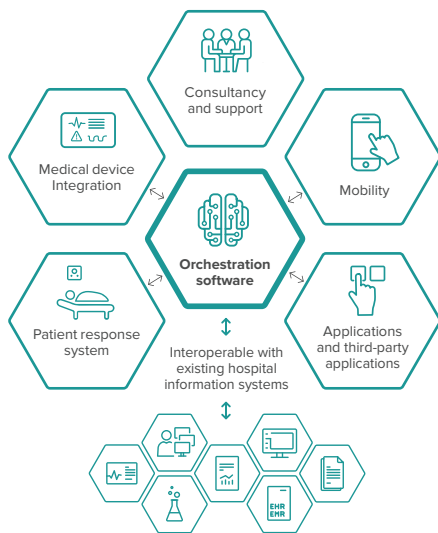


Truly integrated communication and coordination across healthcare organizations. Eternal pipedream or sustainable reality?

IT siloes that can't communicate with one another... fractured workflows... colleagues left waiting for key information. Non-integrated communication systems and technologies are a costly burden on strained healthcare resources. But a bold initiative called the Ascom Healthcare Platform is showing a way forward. It combines products, services and insights into how modern healthcare really works. And unlike so many healthcare IT programs it's not just a plan or an aspiration, but a solution that's already hard at work in hospitals worldwide.



The Ascom Healthcare Platform: Delivering actionable clinical digital information that flows efficiently across medical systems, medical devices, care teams and points of care.

Puay Chuan Lee faced a problem. As Deputy Director of Strategic Projects at Singapore's new 1,000-bed Sengkang General Hospital, she had to help figure out how nursing staff could respond efficiently to nurse call alerts. She wasn't alone of course; she had a great team of healthcare professionals around her. Still, the challenge posed a dilemma. The new hospital was committed to simplifying communications and workflows by focusing on ways of sharing information that put patients and staff first.

On the other hand, responding in person to every nurse call alert would leave little time for other tasks. Yet if staff did not respond promptly, patient satisfaction—even the quality of care—could be compromised. An advanced nurse call system was the obvious answer. But that posed yet more challenges. Could it integrate smoothly with other clinical systems and devices? Could it integrate with a mobile telephony system to let staff receive and manage alerts and messages while on the go? Could it be quickly scaled up and adapted to meet changing needs?

The situation at Sengkang Hospital is shared by healthcare facilities worldwide, and for broadly similar reasons. The trend towards single-room hospital layouts, for example, is generating new workloads for already busy frontline staff. Healthcare systems worldwide continue to struggle with a shortage of nurses. And relentless technological change leads to the proliferation of different standards, devices and IT systems that often don't integrate with each other. This in turn contributes to fragmented data and disjointed workflows. Add the different factors together, and the systems and products designed to facilitate smoother communications are seen as barriers to communication. Well-meaning managers respond by introducing yet more technology, which merely serves to exacerbate problems. Meanwhile, in hospital wards around the world, clinicians and support staff resort to scribbling notes on paper, walking to and from patients and stationary PC monitors, and postponing their responses to alerts.

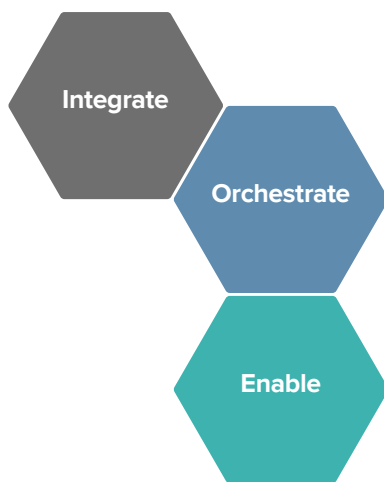
“Ascom Unite software brings integration simplicity to an already complex mesh of healthcare IT systems.”

Puay Chuan Lee
Deputy Director of Strategic Projects,
Sengkang General Hospital, Singapore

The cost of all this non-integrated communications is staggering. An exhaustive literature review found that “communication inefficiencies in the hospital setting for physicians are estimated to generate a waste of \$800 million annually in the US”.¹ Just as alarming is the impact on staff morale, health and performance—and of course on care quality and patient satisfaction. To take just one example, ‘alarm fatigue’ is often identified as a serious threat to patient safety and staff well-being.² Caused by prolonged exposure to non-clinically significant alarm notifications, alarm fatigue can lead clinicians to ignore or de-prioritize significant alerts.

A major contributing factor to alarm fatigue is the lack of integrated and filtered communications solutions. Instead of alarm notifications going directly to specific caregivers’ mobile devices, alerts are broadcast for everyone in a ward or department to hear. The detrimental impact on patient recovery and well-being is also widely documented. One review of relevant studies found that “the cacophony of alarms has been shown to delay patient recovery, increase length of stay, influence patient satisfaction negatively as reflected in patient surveys and contribute to patient distress, sleep disturbances, delirium, increased blood pressure and heart rate, and weakened immune system”.³

Fragmented communications and workflows can cause delays and bottlenecks right across the care continuum. Patient admission, transfer and discharge can be delayed because porters don’t receive timely instructions. Clinicians can be kept waiting for lab and radiology results. Updating clinical data to Electronic Health Records (EHRs) is laborious—and manually entering data is prone to human error. Staff use valuable time walking to patient rooms when they receive nurse call alerts, instead of first talking to patients to ascertain the seriousness of the request. Such issues are not exclusive to hospitals. Long term elderly care and assisted living facilities face similar challenges: seamless communication and coordination is hampered—or made impossible—by information siloes and fragmented communication.



Ascom Healthcare Platform.
An integrated solution for seamless,
directed and responsive alert notification.

Integrate, Orchestrate, Enable: three pillars of the Ascom Healthcare Platform

The Ascom Healthcare Platform (AHP) addresses the issues outlined above by enabling the creation of end-to-end communication and coordination solutions. To actually develop such solutions, the AHP uses a three-step approach: Integrate, Orchestrate, Enable. The first step, Integrate, refers to the unlocking of digital data from different sources, devices and systems and the merging of that data into manageable flows. For example, by gathering data from a patient’s EMR, various medical devices and nurse call systems—then collating all that data and presenting it on a single patient-specific dashboard.

The second step, Orchestrate, refers to the ‘traffic control’ of data. Powered primarily by Ascom software, this is the phase where data is funneled, filtered and categorized. Alerts and messages, for example, are escalated and routed to pre-selected alternatives should the initial recipient be unable to respond appropriately. The third step, Enable, refers to the empowerment of mobile staff—it is the phase where mobile clinicians can view, manage, share and augment context-rich clinical data while on the go or at the bedside. A nurse using an Ascom Myco smartphone to calculate a medical score and to upload the results to an EMR from a patient’s bedside is an example of the ‘Enable’ phase at work.

The combination of Ascom hardware and software “has made our patients visible to nurses, no matter where the latter are in the building.”

Nathalie Forrest
CEO, Chase Farm Hospital, London

“Something like the AHP sounds straightforward,” says Carl-Johan Helgesson, VP of Ascom’s Global Mobility Product Line. “It is after all reasonable to expect that when a patient presses a nurse call button, a message describing the nature of the request goes directly and discreetly to a designated caregiver’s mobile device—and that the caregiver can respond on the go via that device, either by speaking with the patient, or if busy, by forwarding the request to a colleague.” Such a flow of information, however, requires the smooth interoperability of multiple elements. “And Ascom,” adds Helgesson, “is unique in offering all those essential elements in a single portfolio. We are alone in having everything from the nurse call software to the bedside hardware to the alert management solution to the actual mobile handset or phone carried by the clinician.”

But the Ascom Healthcare Platform includes more than software, hardware and handsets. Clinical and IT consulting, end-user training and various support programs are key elements in the portfolio. For Martin Johansson, Director of Professional Services at Ascom, these intangible elements are as important as the software, handsets and workflow stations they support. “It’s obvious that high-end and sophisticated IT systems require high-end and sophisticated support. What is sometimes overlooked is the fact that people—the users—need support; ongoing support that evolves to help them meet their needs and challenges.”

Importance of clinicians’ input

An example of such an evolving need is the growing importance of communications designed specifically for elderly patients. “Rapidly ageing populations and the complex, chronic conditions they present is a real challenge,” says Johansson. “However, digital tools and wireless connectivity—things such as remote video monitoring, wander management, speech-enabled nurse call—can make a huge difference. Frontline mobile staff members can harness these tools to gain valuable time, provided they receive appropriate training and post-implementation back-up.”

Another example of an evolving healthcare need is the growing influence of end-users, particularly of clinicians, on the selection and configuration of communication solutions. “Until fairly recently,” says Johansson, “clinicians pretty much had to use whatever they were given. Thankfully that is now changing. Indeed, clinicians’ input is increasingly the bedrock for clinical communication solutions. That’s why we have made Clinical Consulting—where our on-staff nurses collaborate with clinicians to pinpoint problems and devise solutions—such a prominent part of Ascom Professional Services.”

The Ascom Healthcare Platform in action: Sengkang Hospital, Singapore

The theory behind the Ascom Healthcare Platform sounds persuasive. But how does it work in the real world? For Adam Jaffe, head of Ascom marketing in Asia, the case of the Sengkang Hospital campus in Singapore (1,000 beds in two connected facilities) is instructive. “Here we had so many of the challenges that hospitals contend with, such as manpower constraints and numerous alert, clinical data and IT systems. At the same time, Sengkang Hospital wanted to streamline communications. How could managers achieve the latter while faced with the former?” For example, when it came to selecting a nurse call system, the hospital’s designers were faced with a perplexing array of individual components and sub-systems. Opting for different systems for patient alerts, nurse call, workflow stations, EMR integration and so on posed serious technical, interoperability and administrative problems. “As for ongoing support and maintenance,” adds Jaffe, “multiple vendors and systems means multiple contracts—hardly a foundation for simplicity.”



Sengkang Hospital, Singapore

By turning to Ascom, however, Sengkang Hospital was able to select various interoperable elements from the Ascom Healthcare Platform—software, services, hardware, handsets—and integrate them into cohesive solutions. For instance, the two facilities that make up Sengkang Hospital are both equipped with Ascom Telligence, a solution that goes beyond traditional nurse call systems. Conventional nurse call systems are reactive and time-consuming. A patient triggers an alert to summon a member of staff, who then walks to the patient to see what he or she requires. It's a slow, clumsy method that can contribute to staff frustration, patient dissatisfaction, and inefficient workflows.

Ascom Telligence, in contrast, is a 'Patient Response System' that can send alerts and requests directly to individual nurses' handsets and/or nursing stations. Nurses and nursing aides can speak to patients before walking to them, and can receive specific requests—for water, pain medication, an extra blanket, etc.—directly to their handsets. For Puay Chuan Lee, having such seamless information flows is helping the hospital achieve “greater workflow coordination and staff productivity, particularly in these current times of manpower constraints.” The engine behind these information flows is the Ascom Unite software suite. As Lee puts it, having Ascom Unite brings “integration simplicity to an already complex mesh of health-care IT systems.” For example, Ascom Unite integrates with the hospital's Real Time Location System to make available additional productivity-boosting functions as dementia patient alerts and food delivery messaging.



Chase Farm Hospital, London

The Ascom Healthcare Platform in action: Chase Farm Hospital, London

Described as 'the first paperless hospital' in the UK's National Health Service (NHS), Chase Farm Hospital bristles with innovative designs and technologies. But new ways of providing care bring new challenges. For instance, like many new-build facilities, Chase Farm surgical patients are accommodated in single-patient rooms. This of course helps minimize the risk of hospital-acquired infections, and contributes to an environment more conducive to patient comfort and healing. The shift to single-patient rooms is a key feature of many new-build facilities worldwide. And there is compelling evidence that calm and quiet environments aid recovery, particularly for neonates, long-term patients, and elderly people.⁴

One flipside of single-patient rooms, however, is that they remove patients from the direct line of sight of nurses. This in itself may not sound like a major challenge. But when combined with high service expectations from patients and their families, staffing constraints, and the complexity of conditions among an ageing population, it can add significantly to nurses' walking times to individual rooms in order to assess patient alerts and requests.

The Ascom communication and coordination solution deployed at Chase Farm ensures patients remain in the 'digital sight' of caregivers. In the words of Chase Farm CEO Natalie Forrest, the combination of Ascom hardware and software “has made our patients visible to nurses, no matter where the latter are in the building.” Detailed, context-rich and up-to-date patient data and status are always available to nurses on their Ascom smartphones. Alarm notifications and nurse call requests go discreetly and directly to assigned nurses' handsets. And clinicians can easily coordinate with their colleagues as they move around the facility.

The range of software, smartphones, handsets and services in the Ascom Healthcare Platform enabled Ascom to devise and implement highly customized solutions for Chase Farm. As senior nurse Fiona Morcom, responsible for leading transformation at Chase Farm's surgical department, explains. The new system is "completely configurable", resulting in a level of connectivity she describes as "invaluable." A critical component in Chase Farm's customized communications solution is the Ascom Myco smartphone. An enterprise-grade Android™ handset, the Ascom Myco integrates with other elements of the Ascom Healthcare Platform to connect with nurse call and alarm systems, and equipment, devices, IT systems and of course colleagues—letting mobile clinicians access, manage and share data throughout the hospital.*

"The Ascom Myco is a mobile phone," says Morcom. "But it is also a platform for so many other things." For Matt Sykes, Theater Transformation Lead at Chase Farm, such versatility has resulted in the Ascom Myco becoming an indispensable part of his daily routine. "I use it," says Sykes, "to call and send messages to people, to call a porter to come to a bay. I even use it to carry out my infection control audits." Sykes' endorsement is shared by nurse Nef Duncan, who highlights a benefit sought after by just about every healthcare professional: "The Ascom Myco saves us a lot of time every day, even with care for our patients."

Learn more at [ascom.com/marketing-campaigns/en-us/healthcare-platform](https://www.ascom.com/marketing-campaigns/en-us/healthcare-platform)

References

1. W. Buylaert, S. Degroote, G. Hallaert, E. Mortier, R. Peleman, S. Van Daele, D. Vandijck, R. Verhaeghe, P. Vermeir, D. Vogelaers (2015) Communication in healthcare: a narrative review of the literature and practical recommendations [online] available from <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4758389/>> [19 November 2019]
2. ECRI Institute (2014) Top 10 Health Technology Hazards for 2015 [online] available from <www.ecri.org/2015hazards> [19 November 2019]
3. T.A. Bach, Lars-Martin Berglund, Eva Turk (2018) Managing alarm systems for quality and safety in the hospital setting [online] available from <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6069923/>> [19 November 2019]
4. Wolfgang Babisch, Mathias Basner, Mark Brink, Charlotte Clark, Adrian Davis, Sabine Janssen, Stephen Stansfeld (2014) Auditory and non-auditory effects of noise on health, Lancet, 2014 April 12; 383(9925): 1325-1332. [online] available from <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3988259/>> [10 December 2019]

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