

Integrated Workflow Intelligence

How our
communication
solutions can help you
meet today's Health-
care challenges

ascom

Ascom in Healthcare

You no doubt already know about the challenges facing Healthcare. You know about aging populations and budget constraints. You know about rising patient expectations. And you probably know how hard it's becoming to attract and retain top-class employees.

You might even know about Ascom.

For more than half a century we've been developing wireless communication solutions for the Healthcare sector. And it's an area to which we are constantly dedicating more and more resources and innovation.

This document tells you how our 'Integrated Workflow Intelligence' approach can help you and your colleagues solve some pressing problems. It also shows Ascom at work in real, demanding Healthcare environments –check out the case stories starting on page twelve.

Of course, this document can only scratch the surface of what's really possible with Ascom in Healthcare. Visit our website to learn more. Or get in touch with your nearest Ascom representative. We'd love to hear from you.

100,000

systems installed
worldwide

Present in

47

countries

1,200

employees
around the world

Vital statistics



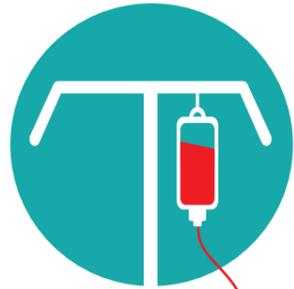
Total global expenditure for health in 2012 was US\$ 6.5 trillion.¹



46.8 million people worldwide are living with dementia in 2015. This figure is estimated to reach 131.5 million by 2050.²



Number of people over 60 years set to double by 2050.³



70%

The total number of new cancer cases is expected to rise by about 70% over the next two decades.⁴

\$1,038

Total global expenditure for health per capita was US\$ 1,038 in 2013.⁵



Worldwide, only about 14% of people who need palliative care currently receive it.⁶



Nurses spend less than one fifth of their time on direct patient care.⁷



Hazard #1

Alarm hazards are hospitals' number one technology health hazard.⁸

\$12bn



US hospitals waste \$12bn annually due to poor communication.⁹



“Up to 40% of nurses in developed countries “will leave health employment in the next decade”.”¹³

Healthcare under pressure

You don't have to be an expert to know that many national Healthcare systems are struggling. True, modern medical science and health services have achieved some astounding successes: Smallpox has been eradicated; the global infant mortality rate has been halved since 1990; the battle against Polio is being won (cases have decreased more than 99% since 1988).^{10,11,12} But Healthcare systems around the world face immense challenges:

- **Populations** worldwide are rapidly aging, straining already limited resources. And it's not restricted to the world's most developed nations. By 2050, “80% of older people will be living in low- and middle-income countries”.³
- **Dementia** is presenting Healthcare systems with unprecedented problems. The *World Alzheimer Report 2015* states that globally there were 9.9 million new cases of dementia in 2015 alone—one every three seconds.²
- **Human resources** are in desperately short supply, with the global shortage of health workers potentially reaching 12.9 million by 2035. Even the richest nations are threatened. Up to 40% of nurses in developed countries “will leave health employment in the next decade”.¹³
- **Patients and their families** are becoming empowered. The internet gives people the power to easily compare facilities, therapies and outcomes. This not only raises expectations for high-quality care, it lets patients learn about their conditions and treatments, and makes it possible for them to become more active members of

the care team. Such collaboration can be hugely beneficial—provided there are communication systems in place that facilitate information sharing.

- **A globalized economy** means disease outbreaks can spread like wildfire, overwhelming national health systems. The growth of global trade and travel means “a localized epidemic can transform into a pandemic rapidly, with little time to prepare a public health response”.¹⁴ Modern-age outbreaks can challenge even the most sophisticated international responses, as evidenced by the Ebola crisis in West Africa.

Is there a way forward?



Introducing Integrated Workflow Intelligence—how to get more from what you already have

We at Ascom have developed something that can make a profound contribution to more affordable and sustainable Healthcare systems. We call it 'Integrated Workflow Intelligence', an innovative yet practical way to bring Healthcare management closer to the people that really matter: your patients and frontline staff.

Integrated Workflow Intelligence refers to the totality of clinical and commercial benefits made possible by our solutions in Healthcare. These solutions are in turn the result of more than half a century's Healthcare experience and thousands of Healthcare installations.

To better understand the scope of Integrated Workflow Intelligence, it might help to examine each constituent element in more detail:

- **Integrated** – The word comes from the Latin Integrare, 'to make whole, to make complete'. And that's exactly what Ascom Healthcare solutions do: join together technologies, devices, processes, patients and staff into integrated and scalable care-delivery systems. Ascom solutions also usually integrate a hospital's legacy communications systems with innovative technologies and equipment—helping to extend the return on existing investments.

- **Workflow** – Fragmentation of workflows and multiple information sources are serious problems at most hospitals. They hamper productivity, reduce caregiver and patient satisfaction, and can negatively impact clinical outcomes. But minimizing these problems isn't easy. It requires smart alert-management and communications systems, and the company behind those systems must understand hospitals' operational realities—two requirements met by Ascom and our Healthcare solutions.

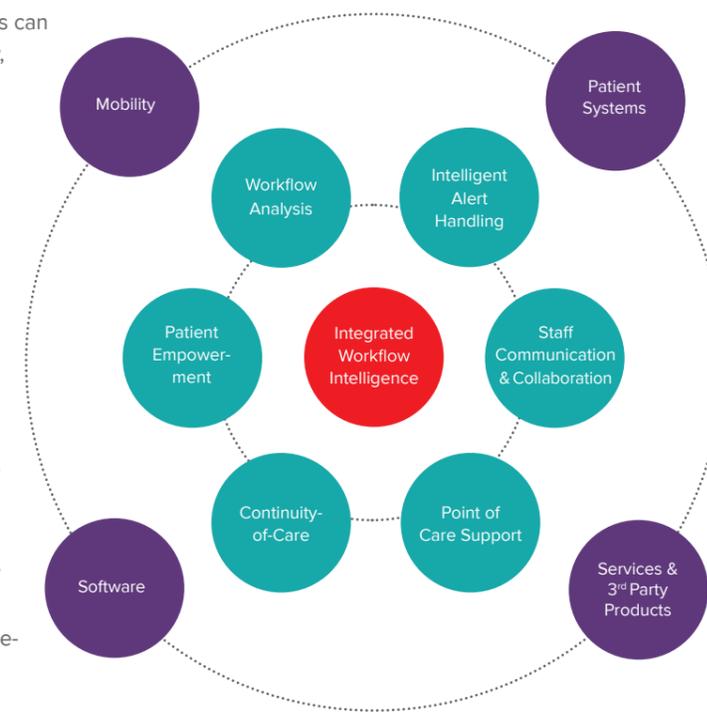
- **Intelligence** – Ascom solutions help hospitals achieve intelligent mission-critical communications, intelligent resource utilization, and intelligent data collection and analysis. Wireless communication systems should be intuitive and predictive tools. They should help frontline staff anticipate patient events—not merely react to them. And they should provide hospital administrators with the data needed to maximize staff and equipment productivity.

Healthcare focus areas

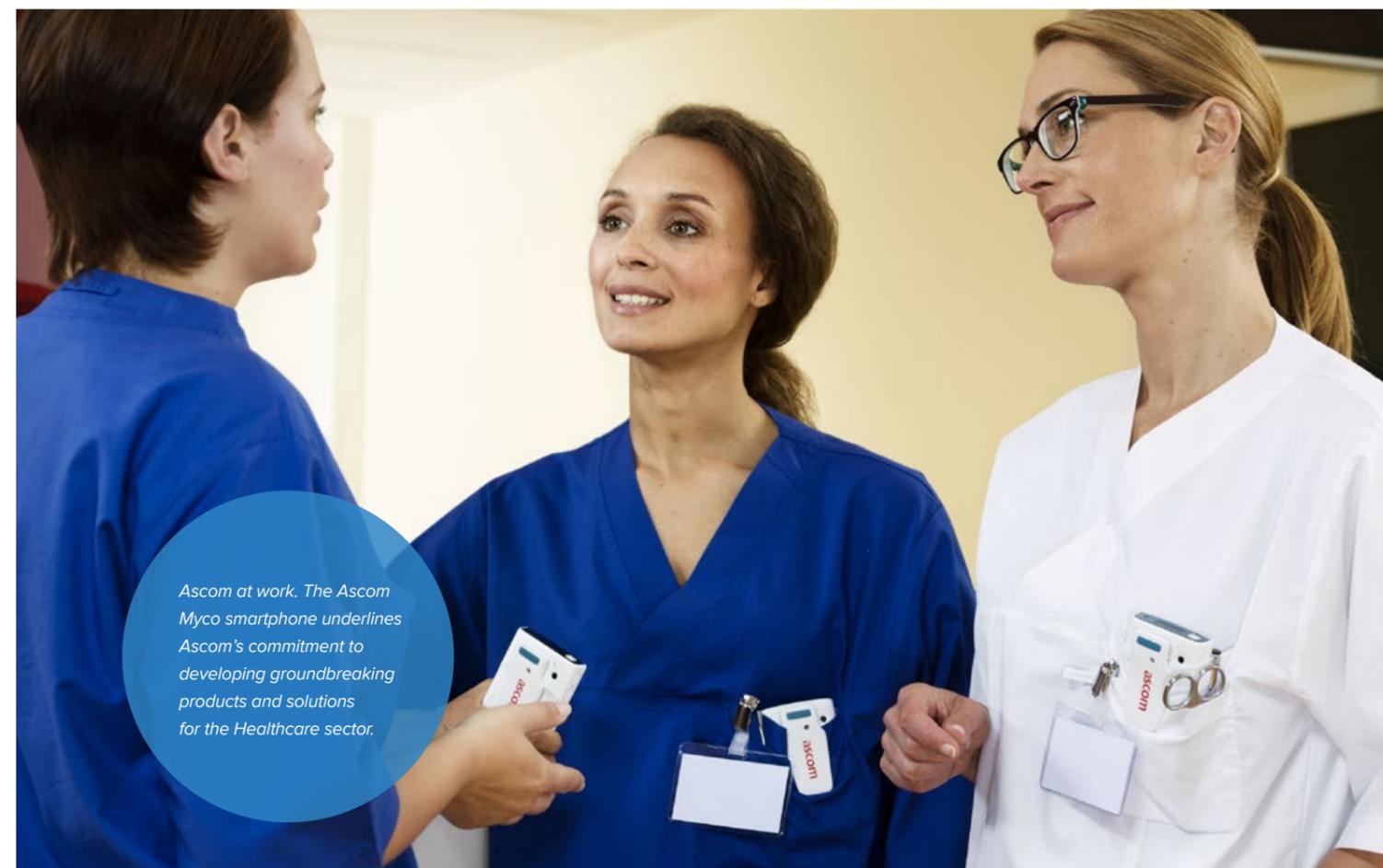
We have identified six areas where Ascom's solutions can have fast, measurable impact on costs, productivity, patient safety and staff job satisfaction:

- Intelligent Alert Handling
- Staff Communication and Collaboration
- Point-of-Care Support
- Continuity-of-Care
- Patient Empowerment
- Workflow Analysis

Ascom is uniquely positioned to provide solutions in each of this six areas. To start with, there is the range of Ascom hardware and software products.* This offering is divided into four areas: Mobility (infrastructure and mobile devices such as base stations and the Ascom Myco smartphone carried by frontline staff), Patient Systems (any of our various nurse call systems), Ascom Unite software (the middleware that ties everything together), Services and Third Party Products.



*All products are subject to availability. Not all products are available in all countries.



Ascom at work. The Ascom Myco smartphone underlines Ascom's commitment to developing groundbreaking products and solutions for the Healthcare sector.



Six Ascom solutions to six Healthcare challenges

Challenge 1

Alarm hazards and alarm fatigue

According to the respected and independent ECRI Institute, inadequate alarm configuration practices and policies constitute the leading health technology hazard for 2015.⁸ These failings pose two main problems: One, alerts do not reach the appropriate staff; Two, an excessive number of clinically insignificant alerts causes 'alarm fatigue', where staff do not notice alerts, or deliberately disconnect equipment in order to gain a respite from alarm notifications.

Solution – Ascom's smart alert-handling solutions. Such systems help minimize clinically insignificant alerts. Alarm notifications are filtered, going only to assigned caregivers in pre-assigned escalation chains.

Challenge 2

Staff communication and collaboration bottlenecks

Poor communication is one of the biggest problems facing hospitals today. Indeed, one study estimates it costs the US alone US\$ 12 billion annually.⁹ Ineffective communication can lead to a host of issues: improper diagnosis, delayed or improper treatment, patient insecurity and stress. And without proper communication, it is harder for care teams to share information and discuss treatment plans.

Solution – Wireless solutions that enable staff collaboration by providing role-based communication support, staff availability status and efficient means of collaborating on a patient's care.

Challenge 3

Inadequate face time

Nursing shortages and administrative workloads mean nurses have less and less time to devote to each patient.⁷ This lack of 'face-time' can impact clinical outcomes and patient satisfaction levels.

Solution – Ascom's point-of-care solutions do what they say: make it possible for caregivers to perform tasks and receive patient and clinical data while remaining with a patient at the point of care. Clinical data sources have traditionally been static. Ascom makes them as mobile as the people who use them.

Challenge 4

Discontinuous care

Patients stranded in wheelchairs, waiting for porters to wheel them to another ward or department; delays and misunderstandings at shift handovers; constant staff changes that make it difficult to create relationships between caregivers and patients. Discontinuous care can make a stay in hospital a frightening and disorienting experience—especially for the elderly and the mentally ill.

Solution – Ascom's continuity of care solutions help optimize patient pathways within and between departments. We provide hospitals with communication and workflow tools that integrate with service providers such as labs, radiology departments, porters, etc.

Challenge 5

Rising patient expectations and demands

Patients are becoming better informed about their conditions and treatments. They know more, and they expect more from their care providers. Many are also keen to play an active role in their care plans, and they want access to their medical records. These trends are placing higher demands on hospital communication systems. Moreover, Healthcare systems are becoming increasingly sensitive to patient needs, and more aware that patient mobility and personalized services can reduce lengths of stay.

Solution – Ascom patient empowerment solutions inform and reassure patients and their families. Our smart, context-rich nurse call systems enhance and personalize the communication flow between nurses and patients. These empower patients by giving them more control over their immediate environment, and more information about their carers and care plans.

Challenge 6

Inadequate management data

Information is power, and nowhere is it so powerful as in hospitals. The problem is how to collect, store and distribute huge amounts of data in ways that can yield valuable results.

Solution – Ascom data analysis solutions can help hospital managers and administrators improve workflows, enhance patient safety and reduce costs. They can, for example, help managers investigate accidents and incidents. And can help managers track and analyze key performance data in order to identify and address inefficiencies.





Photographer Riikka Myöhänen, KUH

Ascom at work

Announcing a quiet revolution in Neonatal Intensive Care

How an Ascom alert-handling solution is helping to provide 'family-centered' Neonatal Intensive Care—a fresh departure in Neonatal Intensive Care Unit practice that can contribute to improved clinical outcomes, better parental bonding, and reduced lengths of stay.

The outside of the new 'Kaari' complex at Kuopio University Hospital (KUH) is breathtaking. But it's what goes on inside the five-story, 32,000 square-meter building that's truly inspiring. For it's here, among the lakes and pine forests of central Finland, that a Neonatal Intensive Care Unit (NICU) is using a pioneering family-centered approach to radically improve care outcomes for newborns and infants. Put simply, the concept involves keeping child and parents together in 'family rooms'.

"The concept certainly involves some very impressive technology," says Senior Nurse Mila Hilden, gesturing to the NICU's array of monitors and incubators. "But what we're doing is actually pretty straightforward: providing an environment where babies and their parents can spend as much undisturbed time together as possible—and where the atmosphere approximates that of a loving, nurturing home."

Creating such an environment is hard work. But the benefits are worth it. "Having a baby and parents together in one room has tremendous therapeutic benefits," says Hilden. "Infection rates are lower than with conventional group spaces. Breastfeeding success rates are higher. The length of stay prior to transfer to a general ward or discharge is shorter. And it really helps parents bond with their babies."

Smooth re-calibration

The new NICU at KUH—complete with Ascom Myco smartphones and an Ascom Unite alarm notification solution—opened in May, 2015. The 18 family rooms quickly filled with patients and parents.

The NICU nurses initially asked that virtually all alerts go unfiltered to their Ascom Myco smartphones. "We're nurses," explains Hilden. "We naturally want to know as much as we can about each patient."

But having unfiltered alerts proved almost as bad as having nothing at all. "The Ascom team had warned us," says Hilden. "They said our nurses could be overwhelmed by a high frequency of clinically insignificant alerts. And they were right. Each on-duty nurse was soon receiving hundreds of alerts during a shift."

Another drawback of unfiltered alerts is the potential for 'alarm fatigue'. This occurs when staff are desensitized by exposure to too many clinically insignificant alerts. After a while, staff may just not notice alerts. There have even been cases where staff disable monitors and equipment in order to escape incessant disturbances.

Ascom technicians of course quickly calibrated the solution. Hilden points out it was actually a valuable experience. "It showed the solution could reliably communicate alerts based on wide parameters of physiological data. And it proved we could quickly customize the system."

Invaluable reassurance

"Peace of mind is a cornerstone of nursing," says Hilden. "A nurse can't perform properly if she or he is worrying that a patient somehow or somewhere has slipped through the system, and that alerts are going unanswered. Ascom's Unite Assign helps eliminate such worries. We know that each alert will escalate along an assigned chain of nurses. And we know the solution will automatically broadcast an alert to all nurses should it not be attended to within the appropriate time. Now, this might sound like a technical detail to most people. But as any nurse will tell you, such knowledge is invaluable—it helps us focus on delivering the best care we can."

Benefits for moms and obstetric nurses, too

The solution incorporates Ascom 'Unite Assign' staff-assignment and event-handling application. Unique features make it possible for new mothers who are themselves patients (because of postpartum hemorrhage, for instance) at the adjacent women's ward to actually remain at the NICU with their babies. These mothers' assigned obstetric nurses remain on duty at the women's ward, but receive alerts from the mothers. Mother and baby stay together, with each individual getting the specialized nursing care they need.

KUH NICU at a glance

- 2,500 births per year
- New state-of-the-art NICU opened in May 2015
- 18 family rooms in NICU
- 10-12 nurses on duty during typical shift

Benefits of the Ascom solution

- Parents bond earlier and easier with their babies
- Peace of mind for nurses—better job satisfaction
- Better utilization of existing resources
- Faster turnaround time—babies and families can go home earlier



Photographer Riikka Myöhänen, KUH

Mila Hilden (right), Senior Nurse at the new NICU at Kuopio University Hospital in Finland. A veteran in ICU medicine, Hilden was a project manager helping to select and evaluate the NICU's wireless communications and alert-handling solution.

The Ascom solution

- Ascom Myco purpose-built healthcare smartphones
- Unite Messaging suite including:
 - Unite Connectivity Manager for managing hospital users and devices
 - Ascom Cardiomax for patient monitor integration
 - Unite Assign for nurse assignments
- Ascom Innova Nursecall



Ascom at work

Home sweet (and wirelessly integrated, secure and efficient) home

Why Wesley Mission Brisbane, a major not-for-profit care and social support organization in the Australian state of Queensland, chose an Ascom nurse call solution for six of its aged care communities.

There aren't many organizations like Wesley Mission Brisbane (WMB). Founded in 1906 in a Methodist church in Brisbane, Australia's third-largest city, WMB operates 13 aged care homes, four child care centers, three retirement living villages, an emergency relief service, and three supported-accommodation communities.

"WMB is a very dynamic organization," says Feargal O'Farrell, Sales and Marketing Director, Ascom Integrated Wireless, Australia. "They're constantly seeking ways to make life as secure and dignified as possible for the residents of their aged care communities. WMB is also a very open, very inviting organization. So when we first discussed upgrading their nurse call system, WMB clearly communicated two key demands: the new nurse call solution must be a single, integrated entity; and it must be unobtrusive, and respect the fact that these communities are people's homes."

Annie Gibney, Director of Residential Aged Care at WMB, agrees. "We were very clear from the outset that we did not want something that intruded upon our residents' lives. So no loud alarm signals, or flashing lights or anything like that. Loud, intrusive nurse call systems not only disturb residents and staff, they evoke hospital-like atmospheres. That's obviously not what we want. After all, our mission is to provide supportive and comfortable homes."

Gibney also underlines the importance of having a single, integrated nurse call solution. "We said from the start that we needed one solution with a wide scope; a single solution that could of course provide traditional nurse call functions, but that could also support outdoor resident mobility and a whole range of other areas. Having a broad scope of functionalities in one solution was very important to us—and Ascom were able to provide it."

Partners not vendors

Marcelle Maxwell has that down-to-earth air most of us associate with senior nurses—a kind of calm authority that inspires loyalty among staff and confidence among residents. As Nurse Manager at 'Cooper House', a 58-resident WMB aged care community, she helped communicate staff and resident wants to Ascom throughout the project.

Since Cooper House deployed its Ascom nurse call solution, there has been what Maxwell describes as a "massive improvement" in staff response times to residents' calls for assistance. But it's not just the surge in efficiency and productivity that impresses her. "Ascom stood out right from the very start of the process that led to us deploying the new solution," says Maxwell. "We had quite a list of requirements for the Ascom team," she continues, "demands and wants based on extensive interviews with staff and residents. But they delivered everything we had asked for... and all in one solution, too."

Similar approval comes from Ross Bloomfield, IT Implementations Manager at WMB. Bloomfield's reactions to the project and to his experience of working with Ascom can be split in two. First, there is the technical aspect. "The Ascom solution," says Bloomfield, "gives us the assurance that the right procedures and workflows are in place to manage all alerts and events throughout our facilities."

There is also the team spirit and cooperation that characterized the project. "The Ascom team was exceptionally receptive and open to our ideas and input," comments Bloomfield. "And," he concludes, "the way the team built close relationships with residents was phenomenal. The project has been a very positive experience."

Wesley Mission Brisbane at a glance

- Not-for-profit organization with more than 50 locations in the Australian state of Queensland
- Operates 13 aged care homes, as well as numerous support services and care centers for people of all ages
- The organization has more than 2,400 employees, and is also supported by more than 1,000 volunteers

Benefits of the Ascom solution

- "Massive" improvement in staff response times
- One, integrated solution
- Assurance and peace of mind for staff, residents and families that correct procedures are being followed



MARCELLE MAXWELL



ANNIE GIBNEY

Ascom worked closely with Maxwell and Gibney and other WMB staff and residents to devise a single, integrated solution with a broad range of functions.



The Ascom solution

- 2,800 + call points
- 877 handsets
- 136 IP-DECT base stations
- 895 LF beacons
- 772 wireless pendants

Ascom has produced a short film exploring the solution and its positive impact at Wesley Mission Brisbane. Go to YouTube and search for: Wesley Mission Brisbane Case Study



Ascom

Local presence—global reach

Wherever you are, you're never too far from an Ascom solutions office, subsidiary or partner.



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