Hospital Readmissions in Europe

Using remote monitoring to contain costs

As a growing percentage of Europe's population turns 65 and older, a rising incidence of chronic disease is driving hospital admissions. Readmissions are also rising, adding to the already mounting cost of delivering care in expensive institutional environments. The phenomena will add to the pressure on health care systems as the percent of the population over the age of 65—the largest consumers of medical services—grows.

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>
> —HEALTH AT A GLANCE **2012**

In the European Union, the number of people aged 65 or over is expected to almost double over the next 50 years to 151 million by 2060 from 85 million in 2008. Among those seniors admitted to hospitals to care for complications of chronic or acute episodes of illness, most will be treated and discharged to recuperate at home. But some will face a growing problem, characterized in the European Commission and Organisation for Economic Co-operation and Development's latest overview of Europe's health, Health at a Glance Europe 2012, which expressed concerns about the risk of discharging patients prematurely. "Too short a length of stay could also have adverse effects on health outcomes, or reduce the comfort and recovery of the patient," the report said. "If this leads to a rising readmission rate, costs per episode of illness may fall little, or even rise."

The scope and cost of avoidable hospital readmissions is just beginning to be tracked in some European nations although it remains unaccounted for in most countries. Where data does exist, it is becoming clear that readmissions adds stress to national health budgets, nearly all of which are already under pressure due to austerity measures, growing demands for services, and the rising cost of health care.

"In a time when resources are scarce, in a time when people in many health care systems are not able to fund what is there over the next 20 years, it is inevitable that we need to start to think very carefully about how we utilize available resources," said John Oldham, a physician and National Clinical Lead Quality and Productivity in the U.K.'s Department of Health. "If we continue to do as we do now, no health care system in the industrialized world is sustainable."

To reduce the cost burden of avoidable readmissions, a number of European and country-specific programs are laying the groundwork for the large-scale delivery of telehealth services. The deployment of medical devices capable of monitoring and tracking patients' health will be critical to supporting efforts to keep people well and out of the hospitals. Finding ways to integrate the data from those devices into programs designed to allow health professions to intervene is parmount, before problems advance to the point where readmissions become necessary.

The United Kingdom has led the way among its European peers in tracking and seeking to address the problem. An average of 6.5 percent of patients were readmitted to hospitals within 30 days at a cost of about $2.4 billion (£1.6 billion) in 2011, according to Karen Taylor, Research Director for the Deloitte U.K. Centre for Health Solutions. Out of about about 14.2 million patients discharged from United Kingdom hospitals, more than 600,000 were readmitted for care.

Between 1999 and 2010, the U.K.'s National Health Service saw a 50 percent increase in readmissions, says Taylor. That led in 2010 to a new focus on readmissions, and the introduction by former U.K. Health Secretary Andrew Lansley of a penalty for hospitals needing to readmit patients within 30 days. Under the rules, hospitals in England are to be paid for initial treatment, but not paid again if a patient is brought back in within 30 days with a related problem.

Emergency Readmissions: England 2000-01 to 2010-11

Number readmissions
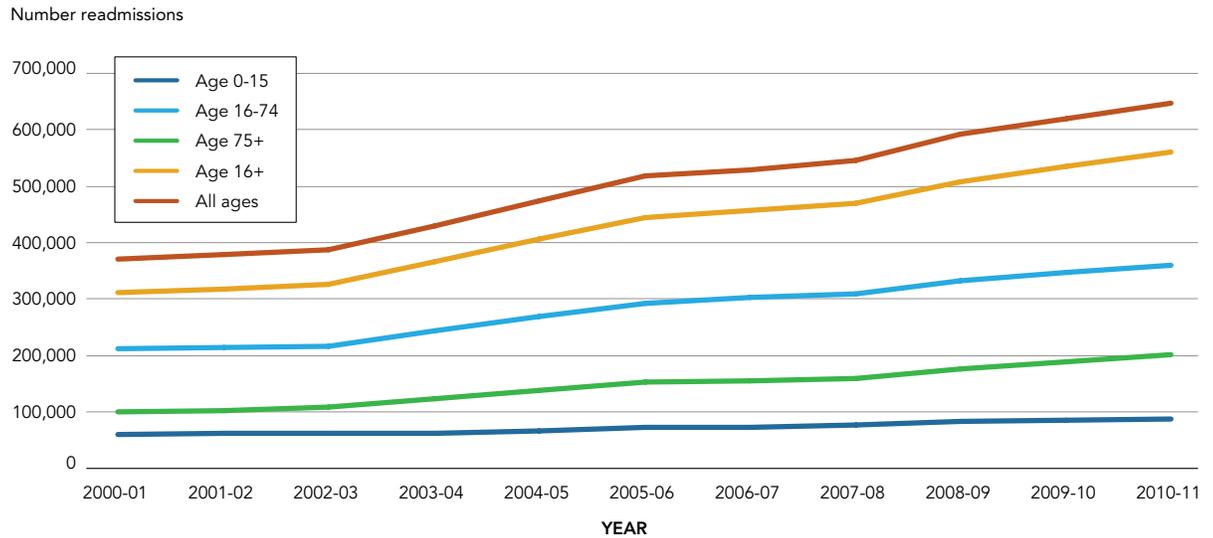
At the time, Lansley spoke of his desire to make headway against criticisms that some patients are discharged from hospitals too soon and without proper care plans in place. "Over the last 10 years, emergency readmissions have increased by 50 percent. Not primarily because patients were more frail, but because hospitals have been incentivised to push people out early – process targets creating risks for patients," Lansley said in a statement to The Guardian. "So we are going to ensure that hospitals are responsible for patients not just during their treatment, but also for the 30 days after they've been discharged. If a patient is readmitted within that time, the hospital will not receive any payment for the additional treatment – they will be focused on successful initial treatments."

Another estimate by the NHS Institute for Innovation and Improvement has suggested that between 3 percent and 11 percent of patients return to the hospital within 28 days of discharge due to complications arising as a consequence of their health at the time of admission, an operation, an infection during their hospital stay, joint issues, or slower-than-expected rehabilitation.

Solutions to tackle the readmissions problem and assist hospitals in the avoidance of penalties will take many forms.

One of the major efforts to meet the problem head-on is the 3millionlives initiative, a public-private partnership focused on expanding the use of telehealth in the United Kingdom. Launched in January 2012, it seeks to transform delivery of health care and social care services to people with chronic conditions by promoting widespread adoption of telehealth by the NHS with the goal of bringing 3 million people significant benefits evidenced in the U.K.'s Whole System Demonstrator trials (the largest randomized control trial of telecare and telehealth in the world).

The trials resulted in:
- A 15 percent reduction in emergency hospital visits
- A 20 percent reduction in emergency admissions
- A 14 percent reduction in elective admissions
- A 45 percent reduction in mortality rates

Denmark is another nation with a long track record where deploying sophisticated health information technologies, telecare, and home monitoring tools are also making a positive impact. An early program that deployed home monitoring devices for patients with chronic obstructive pulmonary disease reduced avoidable hospital readmissions significantly. Investments in core health information technologies, such as electronic medical records, together

with home monitoring technology contributed to reducing stays at one Danish hospital to 2.9 days, versus the European Union average of approximately 7 days, and lowered re-admission rates are in some cases down by more than 50 percent.

Though data is not as available in other countries, there is evidence that the same rise in hospital readmissions in the United Kingdom has been seen elsewhere as people are pushed out of hospitals to cut costs. The average length of stay in hospitals has decreased over the past decade in all European countries, falling from 8.2 days in 2000 to 6.9 days in 2010 on average in E.U. member states.

The average length of a hospital stay is, to some degree, regarded as an indicator of efficiency, notes the European Commission since a shorter stay may reduce the cost per discharge, and shift care from inpatient to less expensive post-acute settings. However, shorter stays tend to be more service intensive and more costly per day. Too short a length of stay could also have adverse effects on health outcomes, or reduce the comfort and recovery of the patient. If this leads to a rising readmission rate, costs per episode of illness may fall little, or even rise.

The reduction in average length of stay was particularly marked in Bulgaria, Croatia, the Former Yugoslav Republic of Macedonia and Switzerland. It also decreased in the Netherlands and the United Kingdom. Several factors explain this general decline, including the use of less invasive surgical procedures, changes in hospital payment methods, and the expansion of early discharge programs enabling patients to return to their home to receive follow-up care.

Hospital discharges are a measure of the number of people who were released after staying at least one night in the hospital. Together, with the average length of stay, they are important indicators of hospital activities. Hospital activities are affected by a number of factors, including the capacity of hospitals to treat patients, the ability of the primary care sector to prevent avoidable hospital admissions, and the availability of post-acute care settings to provide rehabilitative and long-term care services. In 2010, hospital discharge rates were the highest in Austria, Bulgaria, Germany, and Romania.

Hospital discharges per 1,000 population, 2000 and 2010 (or nearest year)

Per 1,000 population
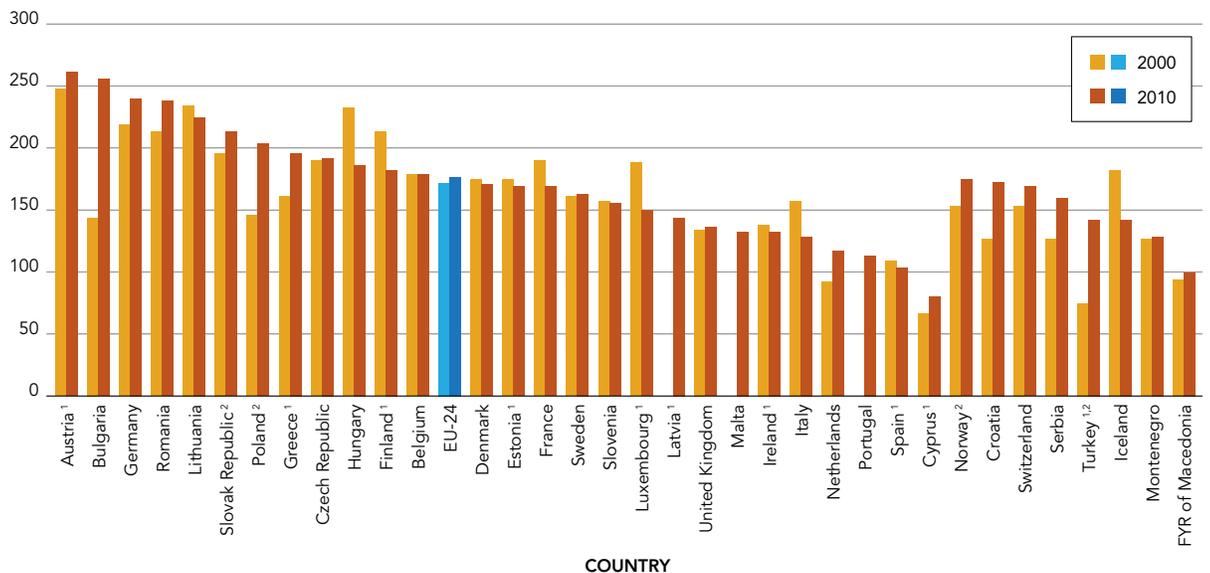
1. Excludes discharges of healthy babies born in hospital (between 3-7% of all discharges).   2. Includes same-day discharges.

They were the lowest in Cyprus, Portugal and Spain as well as in the Former Yugoslav Republic of Macedonia. In general, countries that have a greater number of hospital beds also tend to have higher discharge rates. For example, the number of hospital beds per capita in Austria and Germany is more than twice the number in Portugal and Spain, and discharge rates are also more than two times greater.

France, which is struggling with 20 years of deficits, is also dealing with the burden of unexpected readmissions. In a study of a thousand patients aged 75 and older admitted to medical wards through emergency departments in nine French hospitals, 14.2 percent of inpatients returned through unplanned readmissions within 30 days.

In all cases, plans that ensure patients are mobile within 24 hours of surgery, clear communication with patients, and close monitoring and support—especially in the two weeks following discharge—can reduce readmission. It is in this area that Qualcomm Life's 2net platform is expected to play a critical role.

In December 2011, Qualcomm Life launched its cloud-based 2net Platform, which is designed to connect disparate monitoring devices to information and communication technology systems to allow health care professionals to continuously monitor patients remotely. The award winning plug 'n' play technology removes the need for patients to gather and report data about their changing health status.
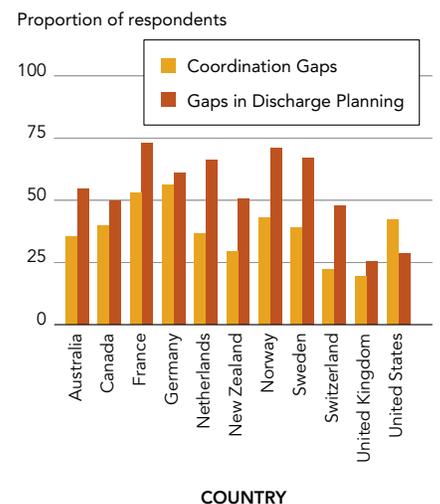
The 2net Platform supports secure socket layer (SSL) communication of data and is FDA listed as a Class I Medical Device Data System (MDDS) in the U.S., Class I MDD and CE registered in Europe, and Class I in Canada. As an MDDS, the 2net Platform is designed, developed and manufactured in accordance with a quality system compliant with ISO13485 standards, meaning it aligns with the quality requirements of U.S. and international regulatory agencies in the health care industry.

The Platform wirelessly connects to devices and apps via one of four gateways, including a wireless communications hub, a mobile app component, medical devices with embedded 2net cellular modules, and platform-to-platform integration using APIs, or application programming interfaces. Together the gateways enable the collection, provision, and cloud-based transfer of a broad array of biometric data. Through 2net, for instance, a blood glucose meter can automatically send test results to a secure database, allowing health care providers or even family members to view the information anytime.

To address the challenges presented by chronic disease in Europe, the coordination of complex care programs over long periods of time will be essential to prolonging life and enhancing its quality for patients, notes Ellen Nolte, Director, Health and Healthcare, RAND Europe. To that end, access to the right medicines and monitoring systems as well as promotion of active patient engagement will be necessary.

The need to deploy wireless monitoring technologies in Europe will be also be driven both by consumers of care and the never-ending quest by payers to keep health care costs in check. As the number of activity monitors, scales, and blood pressure meters sent home with patients rapidly grows, the collection of data from those devices in a reliable and secure manner will be important to improving the quality and efficiency of care.

Patients with chronic disease report deficiencies in care coordination

Proportion of respondents

Legend: Coordination Gaps; Gaps in Discharge Planning. Y-axis: 0, 25, 50, 75, 100. Countries: Australia, Canada, France, Germany, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom, United States.

COUNTRY

"In most service industries around the world, the way that they interact with people has changed dramatically due to the digital revolution. Health care is the last vestige almost where that hasn't taken place. But it will. It will not be long before the Facebook generation have long-term conditions," says U.K. Department of Health's Oldham. "Already, they are wanting to download apps about their diabetes, and heart failure, and chronic disease. [...] I can think of no other way to improve the capacity of a health care system than by embracing your users in the management of their own conditions."

But only five percent of all consumer medical devices have any wireless capability. Given the pervasiveness of wireless technology in the home, the fact that so many devices can't transmit any data represents a call to action for Qualcomm Life. One of the first health care providers to adopt 2net in Europe is The Hospital de Torrejón in Madrid, which has deployed mHealthAlert, a spin-off of Cystelcom. The mHealthAlert platform provides an inexpensive, "always on," telemonitoring service to elderly and chronic patients from their homes. It's main objective is to provide a service that raises standards of health care monitoring while reducing the cost of treatment, and provides an inexpensive service to help the elderly keep in touch with their family and friends to avoid loneliness and social exclusion. Additionally, the service is expected to improve wellness monitoring and reduce the cost of treatment, by integrating telemedicine devices that provide real-time medical alerts.

In its collaboration with the Hospital de Torrejón, mHealthAlert is employing devices featuring telemonitoring devices (blood pressure and pulse oximetry) leveraging Qualcomm Life's 2net Platform to help medical professionals to more effectively manage their patients. The technology is expected to help reduce hospital readmissions by more than 20 percent and the duration of hospital stays by more than 25 percent on average.

In a separate collaboration, Italy's Telbios is working with Qualcomm Life's 2net system to deploy a project developed for people suffering from chronic diseases such as diabetes, hypertension, pulmonary, and cardiac failure—people who can easily receive at home care tailored to their needs. The system relies on an integrated disease management service and a cutting-edge technological infrastructure developed by Telbios, the leading company in Italy in telemedicine services, with the help of Qualcomm Life.

The deployment of 2net in Europe is likely to expand rapidly as hospitals and regional government payers begin to recognize the need to reduce readmissions. Integrated care teams, which will be key to addressing readmissions, will be able to work in efficient collaboration only with the best and most up-to-date patient data at hand.

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About Qualcomm Life

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Qualcomm Life is defining and connecting the wireless health network to improve lives and advance the capabilities of medical devices. By focusing on device connectivity and data management, we empower medical device manufacturers and service providers to deliver wireless health quickly and easily to those who need it. Our mission is to mobilize health care.

The Burrill Report

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