Reinventing Healthcare for the 21st Century:
Meeting Global Challenges with Innovations in Care Coordination

This report is based on the Intel Healthcare Innovation Summit 2012.
Both developed and emerging countries face three global megatrends that will have a crippling impact on their economies and societies if not addressed in the near future. The most significant trend is a rapidly aging world population. The proportion of the population over the age of 60 is projected to double from approximately 11 percent to 22 percent—from 605 million to 2 billion—between 2000 and 2050, according to the World Health Organization (WHO). This global aging is already affecting the other two trends—spiralizing healthcare costs and healthcare worker shortages.

An International Monetary Fund analysis released in 2012 attributes one-third of the cost increase in public health spending by advanced economies—3 percent of gross domestic product (GDP) over the next 20 years—to population aging. In 2010, total worldwide spending on healthcare was $6.5 trillion, or 10.4 percent of global GDP, with almost 75 percent being concentrated in North America ($2.9 trillion, or 44 percent of total worldwide spending) and Europe ($1.9 trillion, or 29 percent of total worldwide spending), according to WHO. The aging population is straining a shortage in trained health workers, estimated by WHO in 2006 to be 4.3 million globally, with the poorest countries being hardest hit.

**‘The Grand Challenge’ in Healthcare: Collaboration between Industry and Government**

At its 2012 Healthcare Innovation Summit, Intel convened several worldwide thought leaders to discuss opportunities to alleviate the impact of global aging, cost growth and workforce shortages.

“The grand challenge, it seems to me, is to accelerate some of the promising developments,” said U.S. Senator Ron Wyden of Oregon. He said the private sector can help answer questions about whether health IT-enabled solutions pay off in the long run. Just as care coordination among providers and patients is key to improving outcomes in populations with chronic conditions, collaboration between industry and government—between the drivers of innovation and the drivers of broad policy changes—is a powerful way to transform the healthcare system. Leaders can look to innovations around the world as a starting point for developing their national strategy.

**Innovation in the Unites States: A Mix of Government and Industry Solutions**

The U.S. Department of Veterans Affairs (VA) piloted a program that provides at-home care for 50,000 veterans who have multiple co-morbidities and are too sick to be in nursing homes. The Veteran-Directed Home and Community Based Services Program (VD-HCBS) has proven to reduce hospital stays by 62 percent, nursing home days by 88 percent and cost by 24 percent. “They get really high-quality care in the home at about half the cost of institutional care,” Wyden said. VD-HCBS engages and empowers veterans by allowing them to prioritize their own care needs and select their own care providers instead of receiving nursing home care from the VA directly.

Patient engagement and empowerment is one of the cornerstones of innovative care coordination models. The Independence at Home Act, which Wyden co-authored and helped to get incorporated into the Affordable Care Act (ACA), includes demonstration projects that enable a group of Medicare beneficiaries to have their chronic conditions managed individually and at home with the help of home care and remote monitoring. Additionally, Wyden’s home state of Oregon has advanced a new approach to accountable care organizations (ACOs), a payment and care delivery model that aligns provider reimbursements with quality metrics and reduced total cost of care for an assigned patient population. Oregon’s program will integrate physical, mental and dental health for low-income patients who are eligible for both Medicare and Medicaid.

The ACA provisions that allow ACOs to receive a portion of “shared savings” when they successfully and cost-effectively manage a patient population recognize that economics is a “very powerful tool to change behavior,” according to Charles Kennedy, MD, CEO of Aetna’s Accountable Care Solutions. “The payment innovations are designed to reward physicians and hospitals for being efficient and effective,” he said. Being efficient or effective hasn’t been rewarded in traditional “fee-for-service” healthcare.

“The notion of accountable care—you’ve got a population of people you're accountable for—requires different thinking,” he said. Physicians need to practice preventive care and work to prevent complications from chronic conditions. Patients also must adjust their behavior and lifestyles. One way to drive patient transformation is to empower them, Kennedy offered. Patients need to get actionable, user-friendly data, which will empower them to manage their chronic diseases at home, he said.

In the private sector, Aetna collaborated with hospitals and health systems to address high hospitalization and readmission rates of Medicare patients. Aetna designed and funded a program that embedded nurses into physician practices, with the goal of coordinating care—making sure all stakeholders shared a common understanding of what was happening with the patient. “The results were tremendous,” Kennedy said. Reductions were seen in hospitalizations (50 percent), readmissions (45 percent) and total cost of care (16 to 30 percent, depending upon the case). Compared to the cost of a Medicare enrollee...
— between $900 and $1,000 per member per month, the pro-
gram lowered the cost to the high $600s for best in class and
in the $700s on average. On the quality side, chronic diseases
were managed, patients were proactively cared for and clini-
cians practiced evidence-based medicine. “It’s a very high-val-
ue, high ROI activity,” he said. The program relied mostly on
human resources, but Aetna was able to leverage technology to
be able to scale the intellectual property it amassed through its
work with physicians, medical groups and hospitals.

While leveraging technology is key to scale these innovative
programs, Wyden said health IT vendors must make the tech-
nologies interoperable so information sharing is seamless and
workfl ow is optimized. Eric Dishman, General Manager of Intel’s
Health Strategy and Solutions Group, agreed. “It’s fair to say if
we want to have coordinated people doing the care, we’d bet-
ter have coordinated technologies that talk to one another,”
he said.

Harnessing Today’s Technology

Michael Bainbridge, MD, Adjunct Professor of Clinical Informat-
ics at the University of British Columbia, Canada, and Clinical
Architect and Director of ASE Consulting Pty., Ltd., noted that
change is needed in the way in which the software and health-
care industries work together. In order to more effectively
provide support or appropriate care for the patient, emerging
technologies – applications and devices – need to be able to
plug easily into an interoperable infrastructure.

Through his work on various national initiatives, Bainbridge sees
many common challenges. “It’s all about making the systems cli-
nician and consumer friendly,” he said, citing a key example. As
the National E-Health Transition Authority’s (NEHTA) program
lead for clinical implementation of Australia’s national e-health
services, Bainbridge and his colleagues collaborated on such
things as deployment of user-centric design, which enabled
clinical safety to be built during the design process of e-health
systems and will help drive clinician adoption and engagement.
Bainbridge is looking to private industry to make IT system in-
terfaces user-friendly so clinicians can focus on and interact
more easily with their patients while getting maximum infor-
mation from the consultation. Bainbridge, who also worked
with the National Health Service (NHS), which comprises three
of the four publicly funded health systems in the United King-
dom, stressed that today’s health IT standards and technology
are sufficient to help solve healthcare’s mega-challenges, but a
great deal of willpower and work is necessary to successfully
implement.

Innovative Solutions Around the World

There are many “pockets of good practice” around the world, ac-
cording to Jane Barratt, PhD, Secretary General for the Inter-
national Federation on Ageing. Denmark passed legislation in
the 1960s that stopped the building of new nursing homes and
paved the way for integrated systems for home- and communi-
ty-based services. “Care has been in the community for well on
40 years,” she said. Australia also has a robust home-care envi-
ronment, which has helped decrease the number of new high-
band care facilities being built because of declining utilization.
The Australian government subsidizes home and community
care providers to support independent living for people with
disabilities and elderly citizens.

In Hong Kong, instead of dispersing more funds to care for de-
dependent citizens, the government is adding incentives if the
patients’ functionality improves, which is critical, according to
Barratt. Industry leaders should be identifying and supporting
necessary enabling technologies to ensure a person’s maximum
functionality so they can live productively within the com-
munity, she said. “There is good evidence in meta-analysis that
enabling an older person to stay at home is a cost saving,” she
said. Global aging, therefore, should be approached as both an
opportunity for business and for improving the quality of life,
rather than just a challenge or a burden, according to Barratt.

In India, homeless and abused young girls are being trained as
bedside assistants across the country. Not only does this pro-
gram remove them from harm’s way and provide them with an
income and a future, it also alleviates the healthcare worker
shortage and enables patients to remain in their homes and in
their communities. “These are very simple mechanisms, but I do
believe they have got applicability globally,” Barratt said.

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Charles Kennedy, MD
CEO, Accountable Care Solutions
Aetna

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Eric Dishman
Intel Fellow and General Manager
of Health Strategy & Solutions
Innovation in Care Coordination Demands Collaboration

Gordon Graylish, Vice President and General Manager of Intel’s Enterprise Solutions, said he anticipates that the healthcare industry will benefit from technological advances – decreasing cost of data management and learning from better data analytics tools. However, encouraging collaboration and driving culture change are just as important if countries are to succeed in building 21st century healthcare systems. Dishman, who has spent the last decade studying health policy and healthcare reform in more than 20 countries, asked Wyden why programs like the VA’s VD-HCBS aren’t the default care paradigm. Despite evidence that such programs work, policymakers view any new initiative as another big government program that consumes taxpayer dollars, according to Wyden. “You all in the private sector can play a key role in helping us frame our response,” Wyden said. “Our message is: we can’t afford not to. We can’t afford to pass on this opportunity to give older people more of what they want at a lesser price to the taxpayer.”

Barratt expanded Wyden’s call for collaboration between government and the private sector to include academia, non-governmental organizations (NGOs) and civil society toward improving the quality of life of older people and getting cost-effective, coordinated care programs to scale. Barratt pointed out that NGOs should be “on the side of partnership saying that older people have the right to choose to live in their homes with the necessary enabling technologies to keep up to date with the functionalities that they have because of chronic conditions.” Barratt stressed the importance of getting the right people and agencies around the table to be the thought leaders in action: it is up to them to come together and boldly embrace the biggest business opportunity in our lifetime.

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Secretary General
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Michael Bainbridge, MD
Adjunct Professor of Clinical Informatics, University of British Columbia, Canada
Clinical Architect and Director, ASE Consulting Pty., Ltd.

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