

# *Bending the Cost Curve*

## Emerging International Best Practices

15–16 November, 2011  
Singapore

**Proceedings Report**

*The views and opinions expressed in this document are those of the roundtable participants and not necessarily of the speakers. All comments were made off-the-record.*

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# ***Introduction***

On 15 November, 2011, PwC, in conjunction with sponsoring organisations – Duke-NUS Graduate Medical School Singapore, McGill University and The Nuffield Trust – convened the third in a series of four symposia called *Bending the Cost Curve: Emerging International Best Practices*. The symposia are being held on four continents in 2011 and 2012. The objective is to bring together the world's leading healthcare experts to explore the common challenges of containing healthcare costs, improving access and quality, and disseminating emerging best practices among global healthcare leaders.

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# The story so far

Our inaugural symposium was held in February 2011 in Washington, DC, with a keynote speech by Kathleen Sebelius, Secretary of the US Department of Health and Human Services. In June 2011 the stage then moved to Amsterdam, the Netherlands, where the proceedings were introduced by The Right Honourable Alan Milburn, former Secretary of State for Health with the British Labour Party. For the November 2011 event in Singapore the audience was addressed by Mr. Gan Kim Yong, Minister for Health, Singapore.

The format of each symposium has been a full-day roundtable discussion where five innovative case studies were presented that successfully met the challenge of cutting costs or increasing access. Cases were intentionally chosen from outside the host countries in an effort to expose roundtable participants to new models and spark a candid debate.

## **Across the first two symposia a number of important themes emerged from the case studies and subsequent discussions:**

- Leadership: The clinical transformation necessary to meet twenty first century demands can be achieved through strong, agile and intelligent leadership to navigate the complex political and economic environments
- Integrated care: Integrated delivery systems can bring greater value to stakeholders, but such transformation requires significant change management to modify practices and re-orient incentives
- Public-private partnerships (PPPs): New types of PPPs are now being designed to fund clinical services in addition to infrastructure and facility maintenance. However, in many countries this requires a leap of faith that is not yet politically viable
- New business models for primary and chronic care: New, technology-dependent business models are needed to tackle chronic illness management and primary care; these models should extend beyond the medical profession
- Re-thinking healthcare competition: Price competition alone won't bend the cost curve without reimbursement and payment reform
- Measurement: As healthcare delivery 'industrialises', measurement should not simply be based upon quotas but on outcomes and prevention, and health systems will need a better balance between empirical, population-based studies and more precise, personalised models
- Data analytics: As healthcare delivery follows other industries into the digital age, it must manage and filter an overwhelming volume of data, in the process improving the 'signal-to-noise' ratio. This doesn't just apply to clinicians and institutions, but to patients and their families accustomed to having information at their fingertips, who expect real-time responses

**In the third symposium in Singapore, further themes surfaced:**

**PPPs cannot work in isolation**

Examples in Valencia and Lesotho show that patients will be attracted in droves to shiny new facilities, which can quickly lead to over-demand, stretching resources and threatening the cost model. Strengthening and integrating the wider healthcare system will help balance primary, secondary and tertiary care and filter less serious cases away from hospitals. Ideally the private provider will need to be responsible for the entire local network (including primary triage) to bring further efficiencies.

**Embracing change as the new normal**

The case studies showed the value of continually questioning the business model and if necessary, tearing it up and starting anew. This drive for improvement tends to come from the very top, although it can be institutionalised to some degree through appropriate payment and incentive schemes.

**Geriatric care has to move out of the hospital**

Caring for the elderly in the community requires a higher level of integration, not just with primary medical care but with social services, as the rate of hospitalisation is closely linked to the quality of social care. Better training for nurses and the emergence of a new breed of non-professional carer (“a cross between a mother and a nurse”) can help provide the kind of specialised geriatric care currently in short supply.

**Telehealth is becoming ubiquitous**

Whether for contact centre triage, remote monitoring of chronic diseases or full ‘hospital at home’ services, technology is empowering a major shift in healthcare provision, moving care away from large hospitals to smaller, local settings, with a greater emphasis upon prevention and health education. And hospital networks can also benefit by adopting a shared service approach to pathology and other services, delivering analysis in real-time.

**Excessive regulation can dampen innovation**

As a wider range of players enter the healthcare sector, including information technology (IT), telecommunications, electronic and media companies, governments must find a way to apply common standards of advice, data quality, storage and retrieval, in order to provide appropriate services and to gather and share information. Data entered by patients should be segregated but still be accessible as it can contribute to wider learning. Regulation should reflect these changes and not restrict progress.

**Extending the concept of engagement**

Ultimately, engagement is about individuals taking greater responsibility for their health and seeing themselves as part of the overall healthcare system. It’s not enough to simply ask people what they think; they should be more actively involved in the process, whether it’s sitting on influential panels, volunteering locally, or having some say in the way their personal spend is directed. Healthcare providers need to treat patient feedback as part of a continuous improvement loop and openly show patients how they’re responding.

**Governments need to support research**

Successful bioclusters are dependent upon significant research funding to push forward programs and attract talent. However for a relatively modest outlay the wider economic regeneration benefits are potentially huge.

*The following case studies were chosen as leading practices with the potential for application in other markets and geographies. Each summary gives some useful background, details about the case itself and issues that may arise in their wider utilisation.*

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# Session 1

## Integrating Healthcare

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### Case Study

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The Queen 'Mamohato Memorial Hospital PPP,  
Lesotho

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### Case Introduction

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Lady Neelam Sekhri Feachem, CEO, Healthcare  
Redesign Group

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### Speaker

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Dr. Karen Prins, Operations Director, Queen  
'Mamohato Memorial Hospital in Maseru, Lesotho

### Background

**Public-private partnerships (PPPs) are not just about managing costs; they're also about improving quality and making healthcare more accessible to the mass of the population.**

With 80% or more of a hospital's operating budget dedicated to delivery of care, there is an enormous opportunity to influence both costs and outcomes by applying private sector innovation and management to clinical services. Although this represents a big step forward from traditional 'build-and-maintain' PPPs, it still doesn't go far enough.

To really get the most out of partnerships, the new health system must bundle its primary, secondary and tertiary care into an integrated network. Such an approach has achieved remarkable results in Valencia, Spain, where a private consortium provides a full range of services from prevention through to tertiary care, achieving cost savings of around 25%, with the hospital consistently ranked amongst the top three in the country in terms of quality and access.

Another critical requirement is to link payments with internationally recognised quality and performance standards, validated by independent bodies. This has a particularly important impact in developing countries, where public hospitals do not always meet such levels of care.

Models of integrated care are as appropriate to emerging markets as they are to wealthier nations and can help transform healthcare provision for the wider population.

***Case study: The Queen ‘Mamohato Memorial Hospital PPP, Lesotho***

**In this groundbreaking PPP, a private provider has not just built a new hospital but is also delivering clinical services.**

Lesotho is one of the world’s poorest countries with an annual per-capita healthcare spend of around US\$40. Like many African nations, it is burdened with excessive HIV rates as well as very high maternal mortality, pushing total health spend to 11% of GDP. The crumbling, 100-year-old Queen Elizabeth II facility – the country’s only referral hospital – was symbolic of the low standards and urgently needed replacing.

In 2008 Tšepong Ltd, a consortium led by the South African healthcare group Netcare, was awarded a contract to build a new, state-of-the-art hospital as part of an integrated model involving maintenance, provision of clinical services, recruitment of health professionals and provision of medical equipment and pharmaceuticals. In addition to the hospital, the consortium is refurbishing, re-equipping and operating three primary healthcare clinics in the area, which can handle less severe cases to free up hospital capacity.

Full patient risk has been transferred to the new provider, who has been contracted to treat patients at the hospital and clinics regardless of the type of condition. And with the government paying a fixed, annual, inflation-linked payment for all services, there is reliability of payment. Performance standards are also safeguarded through a series of reward and penalty clauses related to both clinical and non-clinical indicators, overseen by an experienced independent monitor, jointly appointed by the government and the consortium.

The 425-bed hospital came in on time and on budget, and since opening in October 2011 it is already achieving impressive operational efficiencies, handling 25% more patients than its predecessor.

Early clinical results are also very encouraging. In the new natal intensive care unit (Lesotho’s first ever such facility) newly-born infants that would almost certainly have died previously are now surviving. Another benefit has been the influx of highly qualified medical staff, attracted by the excellent work environment and new technology.

The hospital’s success has shown the applicability of integrated PPPs into even the poorest countries, introducing more efficient processes and raising standards of healthcare.

***Discussion: how to implement this model on a wider basis***

**Strengthening the overall healthcare system**

As the Valencia example demonstrated, a single, privately funded facility cannot work in isolation. In a deprived country like Lesotho, patients will naturally flock to any new central hospital due to the low clinical standards elsewhere, putting intense strain on the resources and pushing up costs. By taking over three local primary healthcare clinics, the consortium was at least able to filter less critical cases from the main hospital; but one hospital and three clinics do not make a system. The only way to effectively manage demand is to improve the overall healthcare system, so the government must have realistic expectations about what one private provider can bring.

### **Managing the budget**

Where the contract between the government and the provider stipulates a maximum number of patients, then excess demand will push up public healthcare costs. Depending upon the nature of the contract, this can lead to over-treatment (where the provider is paid per patient) or under-treatment (where there is a fixed annual charge for the entire facility). While these issues should be contractually stated, there should also be ongoing dialogue into how to manage demand, as it's not in the government's interest for the provider to fail due to excess costs.

### **Defining outcomes clearly**

Assessing and pricing risk is very challenging and, as one participant noted: "The public sector is accustomed to 'command and control' and is often not that good at commissioning, where it has to specify both costs and outcomes." In Lesotho the contract includes both construction and clinical objectives, with two bodies (one of whom is independent) monitoring performance, and penalty clauses payable in the case of service failures. The private provider should view the relationship as a partnership, where it progressively disinvests over the period of the contract to a low level of stakeholding, which encourages close involvement from the government. Having such a strong relationship also introduces flexibility to amend some contractual processes – as happened in Lesotho.

### **Winning public permission**

Despite improvements in efficiency and quality of delivery, there are still ideological concerns over the profits that private providers can make from PPPs, and even calls to contractually specify profitability and/or return on investment. According to one participant: "You won't get the politicians to be courageous unless they feel that they have public permission, which comes not just from efficiency but from clinical success." This permission must be earned by emphasising these clinical benefits, and continually taking out costs by increasing productivity and improving outcomes, bringing value to the entire community. Providers want to make a difference in healthcare delivery but also to generate a reasonable return, an outlook summed up by another participant: "I don't think people should fantasise about why the private sector would get involved in something like this. It's because they believe that there's money to be made."

### **Attracting and retaining clinicians**

Human resources are a major challenge and can impact the provider's ability to comply with the contract. The Lesotho case shows that, despite relatively low salaries, doctors are drawn in by new technology, improved working conditions and a sense of excitement in making a difference.

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# *Session 2*

## Building a New Healthcare Economy

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### **Case Study**

University of Pittsburgh Medical Center (UPMC), US

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### **Case Introduction**

Dr. Richard Levin, Senior Scholar in Residence, Association for Academic Health Centers; Professor of Medicine, McGill University

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### **Speaker**

Dr. Steven D. Shapiro, Senior Vice President and Chief Medical and Scientific Officer, UPMC

### **Background**

**By thinking beyond traditional concepts of healthcare, it's possible to create an entire economy based around clinical service delivery, teaching and research.**

A famous Harvard Business School professor once said it's almost impossible to redirect an established country or region to embrace a disruptive technology. However, the remarkable success of a biocluster in the city of Pittsburgh has proved otherwise, thanks to the foresight and hard work of a couple of brilliant, ambitious, business-oriented leaders.

A biocluster is a group of academic medical centres, hospitals, research facilities and supporting structures concentrated in a single location, which share local resources and focus on training, applied and clinical research connected to the bio industry sector. Through building relationships and partnerships, and cooperating in complementary projects, the cluster can make a vital contribution to the new biology of the twenty first century, with government playing an important role by helping fund research.

Although they are largely not-for-profit entities, successful bioclusters embody leading-edge private sector management principles, commercialising knowledge and creating new jobs that ultimately benefit – and in the case of Pittsburgh regenerate – the whole local economy.

### **Case study: University of Pittsburgh Medical Center (UPMC), US**

**Thanks to the meteoric rise of UPMC, Pittsburgh has been transformed into a new centre of the bio technology industry, creating thousands of new jobs.**

As the foremost producer in the world's largest steel-producing nation, Pittsburgh was the engine behind the incredible growth of the US in the first half of the twentieth century. Yet by the 1970s the steel industry had collapsed, leaving a devastated and depressed city, with sky-high unemployment and a mass migration of inhabitants.

Beginning with a humble psychiatric hospital in the mid-1970s, UPMC steadily unified local academic hospitals and acquired fragmented community hospitals, to build a critical mass that delivers better healthcare. The group now has over 20 hospitals and employs nearly 3,000 physicians among its 5,000 affiliated doctors. It also has a viable insurance arm with over 1.5 million members. All this has helped the University of Pittsburgh attract half a billion dollars a year in NIH (National Institute for Health) funding for research, putting it among the top half dozen recipients in the whole of the US. While government support is an essential ingredient, such investment in economic regeneration has so far reaped handsome rewards.

This phenomenal achievement has been based on a firm vision, inspirational leadership and a highly business-like approach, with resources continually reinvested in research and a strong focus on commercialising technology. UPMC has numerous partnerships with organisations as diverse as General Electric (GE), Alcatel-Lucent and IBM and has also gone global with hospitals in Ireland and Italy, including an emerging biocluster in Sicily based around research and surgery for liver transplants.

With over five million unique patient records and vast quantities of research data, information is a vital ingredient so UPMC is developing a central data warehouse to unleash the power of analytics.

Having invested over US\$1.4 billion in the past five years alone, UPMC was rated by *Information Week* as the fifth most innovative IT company and the first in healthcare in the US. The impact on the city of Pittsburgh has been nothing short of spectacular. UPMC is now the region's largest employer with 54,000 people, and, directly and indirectly, supports one-fifth of the region's jobs. UPMC also supports the local community by investing \$100 million to educate city children through college and, as tenants, also feeds into the local economy. Annual UPMC revenues are set to exceed US\$10 billion – the only time a US academic medical centre has ever hit this figure.

Pittsburgh has a revitalised economy built on education and medicine, attracting large numbers of young, highly educated people to a city voted the most livable in the country.

### **Discussion: how to implement this model on a wider basis**

#### **Accelerating the development of a biocluster**

UPMC has taken 35 years to reach its current level of success, whereas the emerging nations in particular are looking to replicate such success within a much shorter timeframe. A participant noted that: "One advantage of the BRICs and other larger countries is the critical mass of large populations and educational facilities, which can feed a substantial talent pool into R&D." If the government can provide appropriate support, then the cluster can partner with private industry to discover and commercialise intellectual property, to jump-start the process.

### **Maintaining momentum**

UPMC rarely reflects upon its achievements and retains a clear focus on continuous improvement through what it calls ‘disruptive innovation’ – an ethos that permeates the entire organisation. Much of this flows from the leadership, which demonstrates entrepreneurial spirit, clear values and objectives and perseverance. Such a sense of purpose stems in part from a desire to not just make money but also serve the community by improving healthcare, in the process creating a social enterprise model that embodies hard-edged business practices. Leadership can be sustainable by changing behavior. For example, any patient seeking an appointment with UPMC will be seen within three days, which keeps the operation very customer service-oriented. And as another participant noted: “Bioclusters tend to be self-contained, largely non-profit organisations, with no shareholders, enabling them to make decisions more rapidly to adapt to changing market conditions.”

### **Meeting the funding challenge**

The Pittsburgh model is reliant on a steady flow of government grants to the tune of several hundred million dollars per year. Joint-ventures and other commercial initiatives are an alternative source of revenue that can be reinvested into research and development (R&D) and indeed are essential to fund more cutting-edge research, as state support tends to be limited to traditional forms of science. However, these revenue streams are not sufficient to replace grants, so it’s important to be part of a vigorous lobbying process to press home the benefits of research.

### **Investing in education**

Several countries in South East Asia and other regions have a severe shortage of doctors, yet private medical education is not always well-coordinated with the needs of hospitals. The UPMC model enables the commercialisation of clinical activities to generate income for the research and teaching in the university.

### **Harnessing the power of analytics**

In developing effective care pathways that reduce variation in care, it’s essential to gain sufficient evidence, which requires a robust analytical process. And with the potential decline in ‘blockbuster’ drugs academics can help the move to more personalised medicine by finding patient phenotypes, and linking them to genotypes to find useful pathways for new drugs. That’s why central data warehouses are so important, to assist research, learn about the best models of care and spread best practices.

### **Spreading disruptive innovation**

Bioclusters should not just be focused on the latest technological and clinical breakthroughs; there are many opportunities to innovate in care delivery to bring down costs by integrating services and making better use of IT. This is particularly valuable in economies where healthcare spend is likely to be squeezed.

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# Session 3

## Caring For Ageing Populations

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### Case Study

The Medicare Innovations Collaborative (MedIC), US

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### Case Introduction

Dr. K. Ranga Rama Krishnan, Dean and Professor,  
Duke-NUS Graduate Medical School Singapore

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### Speaker

Dr. Bruce Leff, Professor of Medicine, Division of  
Geriatric Medicine, Johns Hopkins University School  
of Medicine

### Background

**In order to manage chronic disease amongst the elderly, healthcare systems need to move away from traditional styles of hospital-based treatment to more cost-effective models of care that acknowledge the importance of managing patients with chronic illness in the acute care setting.**

The age profile in most societies is heading upwards as people live longer and have fewer children. An increasing majority of healthcare spend in most developed countries is absorbed by the treatment of chronically-ill patients. Even in emerging nations the traditional diseases of tuberculosis (TB) and malaria will be superseded by chronic conditions such as diabetes, Chronic Obstructive Pulmonary Disease (COPD) and Alzheimer's.

All of this puts immense pressure on already overburdened health services, where the favoured treatment regime tends to be hospital-based, which is expensive, takes up scarce bed space and often leads to poor outcomes with subsequent readmissions. In many South East Asian countries the decline in family size is depriving the elderly of a vital support network, so the responsibility for care inevitably falls on the health services.

Healthcare systems around the world are urgently trying to address this challenge by trying out new approaches to care, with some promising results. In adapting and integrating these fresh ideas more widely, health providers must overcome natural inertia and structural barriers, in particular the fee-for-service model that pushes patients towards costly secondary care. Technical assistance materials and support have proved beneficial in helping other clinical networks to adopt new initiatives.

### **Case study**

**A US demonstration project showed how health systems can rapidly introduce a number of new approaches to the care of the elderly, to optimise scarce hospital resources, improve patient outcomes and reduce costs.**

Over the last 20 years, a number of evidence-based models of geriatric healthcare delivery have been developed, but their dissemination and implementation on a widespread basis have been quite limited. The Medicare Innovations Collaborative (MedIC), a project sponsored by The Atlantic Philanthropies, has worked to encourage the wider take-up of innovative models of geriatric care. Six different US healthcare systems were given the opportunity to trial a variety of proven approaches to improve both efficiency and quality, with the objective of: keeping some patients out of hospital altogether; moving those that required treatment through the hospital safely and efficiently; and transitioning patients back to their home smoothly and effectively. The six chosen models were:

- 1 Nurses Improving Care for HealthSystem Elders (NICHE - [www.nicheprogram.org](http://www.nicheprogram.org)): training hospital nurses to improve the quality of care delivered to older adults
- 2 Care transitions: providing assessment, self-management skills and hospital discharge planning to minimise readmissions
- 3 The Hospital Elder Life Program (HELP - [www.hospitalelderlifeprogram.org](http://www.hospitalelderlifeprogram.org)): using volunteers to help prevent delirium among older patients
- 4 Hospital-based palliative care consultation: to make the hospital environment kinder and gentler and reduce admission to nursing homes ([www.capc.org](http://www.capc.org))
- 5 Acute Care for Elder (ACE) Unit: a hospital unit dedicated to providing interdisciplinary team-based care for older adults at risk of hospital complications
- 6 Hospital at Home®: offering acute hospital-level care in a patient's home to avoid admissions ([www.hospitalathome.org](http://www.hospitalathome.org))

The participating sites – which did not receive any direct financial funding – included not-for-profit networks, managed care, university-based and independent institutions. They had the option to choose any or all of the available models and were provided with strong technical support via meetings, calls and training sessions, technical assistance such as business planning, and access to the experts who developed these models for additional consultation.

Encouragingly, all the participants adopted and implemented at least one new model within six to eight months, with some choosing multiple programs. NICHE was selected (or expanded, where already in use) in all cases, being seen as a foundation from which other programs could be built. Given the growing incentive to prevent readmissions, it was no real surprise that care transitions was also chosen by the majority of participants. However, 'Hospital-at-Home' was not taken up at all, which reflects the current reimbursement system that incentivises the use of hospitals over community care.

In most cases the models were adapted to suit the particular needs of the different health system, but, importantly, there was a trend towards integration of multiple approaches, which suggest that a 'portfolio' of complementary models can bring real benefits. The technical assistance was highly valued and seen as a critical element in speeding up implementation.

Results exceeded expectations, bringing a number of visible benefits such as a breakdown of barriers between care and provider types, improved care cultures and reduced costs. Although at an early stage, the MedIC trial shows the potential for integrating various elements of the care community to make more efficient use of hospitals. However, the 'fee-for-service' culture remains a formidable barrier from moving to more community-based care.

### **Discussion: how to implement this model on a wider basis**

#### **Expanding the definition of ‘carers’**

The sheer volume of geriatric patients makes it logistically impossible for physicians to see everyone, something compounded by the lack of trainee doctors choosing to become geriatricians. Responsibility for care should therefore be extended to nurses and even non-professionals. One of the trial participants – Carolina Health Systems – has managed to roll out models without the support of a single geriatrician, using nurses and other support staff. And resources are not being used efficiently, as one participant stated: “We’re using very expensive nursing services to do basic things like put a pill in someone’s mouth or an eye drop in their eye.” In response, another attendee recognised the need for a new breed of geriatric carer who would be “a cross between a mother and a nurse.” Nursing associations are known to be very protective of their exclusive rights to treat patients, so there must be a willingness of healthcare professionals in general to relax the restrictions on who can carry out basic activities.

#### **Keeping patients out of hospital**

Hospital admissions for chronic conditions are extremely costly and often lead to further infections, so the emphasis should shift to home-based care, involving house calls. ‘Hospital-at-Home’ takes this concept a step further to enable oxygen, intravenous medicines, blood tests, X-rays and ultrasounds to be administered in the patient’s home. Getting physicians to attend homes is problematic, so telemedicine could be applied in many cases. There is also a growing body of evidence supporting home-based rehabilitation for hip fractures, knee replacements or strokes.

#### **Aligning incentives with outcomes**

By creating teams with responsibility for total care of the elderly, and incentivising these teams appropriately, it’s possible to achieve a greater level of care in the community and reduce the use of specialist physicians. This requires a radical integration of the various parts of the care network and an overhaul of the reimbursement system. A participant noted a successful regional example from the US at Presbyterian Health Systems in Albuquerque, New Mexico: “They own a health plan and hospitals and have adopted a ‘Hospital-at-Home’ approach, which, because they are an integrated system, they can link to their palliative care program and heart failure clinics...so it is all wonderfully integrated.” Such models need to be developed on a broader scale, with another participant referring to changes to the universal medical insurance tariffs in Japan: “Doctors and nurses making home visits are both paid through national insurance, which is helping to reduce hospital stays.”

#### **Rethinking end-of-life care**

One attendee cited the work of an Australian body called ‘Respecting Patients’ Choices,’ which aims to help people die with greater dignity at home. She commented: “Currently around three-quarters spend their last days and hours in hospital, which uses up vast intensive care and other resources and doesn’t reflect the desire of the vast majority who would rather be in their own homes.” Advance care planning could help such a shift.

#### **Bringing together health and social care**

As one participant commented: “The rate of hospitalisation for elderly people is closely linked to the quality of social care.” Increasing the level of care in the community is not just about transferring medical services to the home setting, and many governments and health systems are seeking greater integration of medical and social care providers.

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# Session 4

## Mobile Health

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### Case Study

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Apollo Hospitals Group, India

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### Case Introduction

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Dr. Sarah Muttitt, Chief Information Officer, Ministry, of Health Holdings, Singapore

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### Speaker

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Ms. Sangita Reddy, Executive Director, Operations, Apollo Hospitals Group

### Background

Telehealth has the potential to offer much-needed healthcare to millions of people living in remote regions in developing countries.

Mobile phone ownership is rocketing even amongst the poorer sections of society, with networks expanding rapidly across Asia Pacific and thousands of health apps available. And with clinicians starting to embrace the concept of mobile health, the question is no longer “should we use the new technology?” but rather “how do we implement it”? One of the biggest challenges facing healthcare systems is balancing the speed of innovation with appropriate regulation to maintain clinical safety and quality assurance.

As providers assess the business case for telehealth, they must factor in a wider range of partners including electronics, IT, media and telecommunications companies. This convergence of technologies is sprouting some exciting and creative ways to address the healthcare needs of large sections of emerging countries’ populations, giving the rural poor access to the same kind of services that the urban dweller has long taken for granted — at an affordable cost.

### **Case study**

**Trials in India suggest that remote triage advice and health monitoring via mobile phones can bring healthcare within reach of millions of poorer rural dwellers.**

As one of the leading Indian healthcare providers, Apollo Hospitals is aware that its private hospitals only serve a tiny proportion of India's huge 1.2 billion population. However, with half of the subcontinent's citizens owning a mobile phone, the opportunity for developing mobile health (m-health) is considerable, opening healthcare to an estimated 700 million who currently have no access to physicians.

Apollo's first steps into m-health involve triaged health information and advice via contact centres staffed by paramedics, physiotherapists, nurses, doctors and health advisers, using an IT platform with a structured query database to give appropriate health information. This service is offered via partnerships with leading telecommunications companies, and boasts an impressive track record:

- over 700,000 calls handled by the triage service since it launched.
- country-wide coverage, reaching a potential audience of 70 million, 24 hours a day and 7 days per week.
- both 2G calls and 3G video consultations provided.

For the next stage, Apollo is trialling remote analytics through a range of devices monitoring symptoms such as blood glucose count, heart rate, blood pressure and peak flow, all carried out from a patient's own home, creating a 'mobile health system' that also includes lifestyle, diet and educational support. For example, with their diabetes management program called SUGAR, diabetics may upload their blood sugar count to the clinician through SMS and mobile applications, with an SMS text delivered back to the patient explaining the readings and advising whether further action is required. Further support comes from the contact centre staffed by medical professionals, and customers also have access to customised personal health records. Early signs are very encouraging, with the diabetes monitoring in particular raising compliance to an appropriate diet and exercise regime, with plans for further expansion.

In many ways telehealth complements wider healthcare trends, with a move away from large hospitals to smaller, local settings, and a greater emphasis upon prevention and health education. However, it cannot succeed without a stronger infrastructure, including mobile clinics to carry out primary care and access to urban hospitals for more serious cases.

Over time the network will become more integrated to link health providers, payers and mobile phone suppliers, with new phone customers asked to enter health records at point of purchase as a standard procedure, and a button on the phone to access the telehealth provider at a single touch. And by partnering with health insurance companies, Apollo hopes to make m-health less costly to extend coverage.

Healthcare is the world's most information-intensive sector, so m-health involves a natural convergence between providers of health, IT and telecommunications. In India, the 'Health Highway' is emerging as a national industry platform with common standards for electronic medical records, enabling exchange of health information between different providers. This could ultimately free the hospitals from managing the health information systems via an on-demand pay-per-use model.

### **Discussion: how to implement this model on a wider basis**

#### **Achieving critical mass**

Like any new service, m-health will take time to grow, and Apollo is experimenting with various marketing initiatives such as a month's free access to mobile customers in selected regions. Expanding into the corporate market offers some potential, giving employees medical services as well as additional support such as psychiatric counseling. Partnering with micro-insurance companies could also help increase demand by making the service more affordable. In the longer term, m-health could expand internationally, with centres serving customers all over the world, and providing monitoring and health advice to individuals and particularly to care homes for the elderly.

### **Making m-health profitable**

Early attempts at m-health in India have yet to return a profit for health providers, due to the high fixed investment costs of setting up and running call centres, along with advertising expenses. A participant suggested that: “Advertising is the fastest growing area in the mobile industry and could be used to subsidise services and make them available to those unable to afford m-health.” Given the overall benefits m-health brings to a society – and the potential it has to relieve overburdened government health resources – then it may be prudent to integrate it into a wider state-funded capitation system.

### **Providing real-time support to hospitals**

Hospital groups can boost efficiency by accessing certain activities from a form of ‘shared service’ medical centre either in-house or outsourced, including X-rays, CT or MRI scan pictures. Apollo has enjoyed considerable success offering cancer smear tests for women from a mobile van, the results of which are transmitted to a central hospital, which responds with a full report in less than two hours. A participant commented that: “it’s also possible for a remote pathologist to gather data from a surgical theatre during operations and provide real-time feedback to the surgeons.”

### **Meeting legal and regulatory requirements**

There are clearly some risks involved with the level of advice offered through m-health, given that the patient does not present in person. Apollo’s doctors are not permitted to comment on certain conditions and there are significant disclaimers. All the various providers need to work together with the health authorities to agree to a suitable protocol to avoid restricting what is a valuable service. One attendee mentioned that: “Patient- and device-entered data will inevitably be less reliable than that performed by professionals, so the IT system should have a way to segregate this information. But it’s important not to dampen innovation through excessive regulation, so some of the more basic services such as calorie counters should be treated with a lighter touch.” Ultimately all reliable information needs to be shared and interoperable, so common standards for data quality, storage and retrieval are essential.

### **Changing patients’ behavior through compliance programs**

Telehealth is an excellent way to motivate patients with chronic conditions to make lifestyle changes. As mentioned, diabetes patients have shown improvements in critical measurements as the testing is so convenient and reinforces any improvements instantly, which encourages further behavioral change. These programs need not be restricted to rural populations. It can be equally successful in an urban environment.

### **Relieving the burden on the health system**

As one participant noted: “Telehealth is not just applicable to dispersed populations. It has the potential to link up nursing homes and private residences to hospitals and specialist clinics, to shift people out of the acute care sector, thus avoiding costly A&E (accident and emergency) visits and hospital stays.”

### **Keeping up with technology**

With such a rapid pace of IT change, users and healthcare professionals are demanding ever more sophisticated applications and functionality, of which m-health is a prime example. Larger hospitals and other institutions must find a way to build sufficiently flexible legacy systems to avoid falling behind, so they need to carefully consider how and when to invest in new infrastructure. In emerging economies, where funds are limited, the new ‘distributed’ environment is helping the smaller clinics, hospitals and nursing homes to build IT systems at much lower cost. However, such development needs to be collaborative, so that all the different healthcare systems can benefit from any advances. As one participant commented: “The knowledge is coming from the same place, and if we can work towards that collectively, I think we would have changed the way the world looks at healthcare.”

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# Session 5

## Consumer-led Health Reform

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### Case Study

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The Citizens Reference Panel of Ontario, Canada

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### Case Introduction

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Ms. Barbara Pitts, National Healthcare Leader,  
Associate Partner, PwC Canada

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### Speaker

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Mr. Peter MacLeod, Principal, MASS LBP

### Background

**Conversations between the government and the public need to be informed by learning.**

According to André Picard, a well-known Canadian health commentator: “The adult conversation we need to have about health care has not occurred, in large part, because politicians, policy-makers, experts and pundits have largely cast aside the public.”<sup>2</sup>

All too often public debates about healthcare are characterised by mistrust. Many citizens appear to lack confidence in public institutions and politicians, while public authorities are skeptical about the capacity of the public to play a constructive role, as they believe people to be ill-informed, and over-concerned with the ideological pros and cons of public versus private delivery.

Yet as governments around the world struggle to get to grips with rising costs in the face of severe deficits, there is more need than ever to find solutions that meet the needs of citizens. Nowhere is this more so than in Canada, where the sustainability of its publicly funded healthcare system – possibly the most highly cherished public institution – is under threat, with calls growing for major reforms.

By regarding the public as a resource rather than a risk, a mature dialogue can give legitimacy to difficult policy choices, increasing trust and confidence in political bodies and improving the quality of decision-making.

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<sup>2</sup> “Finally, a health-care paper that makes sense”, André Picard, *The Globe and Mail*, 22 June, 2011.

### **Case study**

**“Finally, a healthcare paper that makes sense.”  
How true public engagement can deliver  
practical, effective ways to improve healthcare  
and make better use of scarce resources.**

The Citizens’ Reference Panel on Ontario Health Services was a joint initiative between PwC Canada and MASS LBP, a respected Toronto-based firm specialising in public engagement. Over three full weekends, renowned experts and citizens together held thoughtful, informed discussions about the state of healthcare in the region and came up with recommendations on how to sustain and improve the system.

A six-member volunteer Advisory Board included respected former health administrators, a former assistant deputy minister, health researchers and clinicians, who helped put together a curriculum that would be seen as fair and balanced. The citizens who took part were selected by a civic lottery to achieve a balance of age, gender and geography that reflected the wider Ontario population.

Panellists received no financial incentives to participate although PwC paid for their travel and accommodation.

In the first phase the panel learned more about Ontario’s health system with the help of 20 of the province’s most respected health leaders, after which they debated the most pressing issues and looked at different potential health scenarios.

Members felt strongly that the existing Canadian healthcare system was sustainable and that greater efficiency rather than more money was the way forward, with a general acceptance of a continued mix of private and public funding and delivery. Discussions focused on issues such as primary care, accountability, incentives, information sharing, e-health, privacy and the future of community care.

Some of the key recommendations included: a need to get serious about preventative health; addressing the growing challenge of obesity and diabetes, as part of a general lack of fitness; shifting the funding model for physician pay towards outcomes rather than treatment; accelerating the adoption of family health teams to bring in more paraprofessionals; and finally, integrating the system more effectively to join up service providers and institutions.

To quote André Picard again: “All in all, a sensible, do-able package, and proof that the public knows full well what needs to be done to improve and sustain (the system). What is still lacking is action, and leadership.” What such panels tell us is not that governments ask too much of the public; it’s that to date they’ve been asking far too little.

### **Discussion: how to implement this model on a wider basis**

#### **Extending the concept of engagement**

In the words of one participant: “This is great – but it doesn’t go far enough. We shouldn’t just ask the public what they think about the system; we should get them actively engaged in the process of running it.” In the UK, for example, 1.2 million people around the country chose to become members of community hospitals, having a say in how they are run, with a significant proportion working as volunteers. An even more radical approach for state-funded systems is to hand some budgetary control over to individual patients, so they have some say in the type of treatment they receive, which could be particularly useful for chronic conditions. Ultimately, engagement is about individuals taking responsibility for their health and feeling part of the overall healthcare system.

### **Demonstrating a willingness to respond to the public's ideas**

Governments and other authorities must visibly show that they are listening and acting on recommendations. In Ontario, senior members of the Provincial Parliament, including deputy ministers, asked for a presentation of the findings and included some of the ideas in cabinet submissions and policy memos, which should influence health policy to a degree. And customer feedback has to become part of a continuous improvement loop, rather than a static annual satisfaction survey, so that the system continually responds to what patients are saying.

### **Building engagement into the everyday process of government**

Governments are constantly looking to different internal and external experts to supplement their own decision-making process. The public should be seen as just another source of potential information and ideas, as one participant observed: "I see this as being no different than any of the other kinds of expertise that government might reach out to when making tough choices." Citizens' engagement groups such as the Ontario Panel remind all leaders that they have to earn legitimacy, which applies not just to politicians but to hospital CEOs, the clinical directors of medicine and others in positions of authority and influence.

### **Making recommendations actionable**

One of the successes of the Citizens Reference Panel was its practical suggestions, borne out of a real understanding of the issues. As a participant noted: "The experts involved stressed the need for actionable and 'directional' recommendations, and I think the panellists really took that to heart." By focusing on practical suggestions, the Citizens Reference Panel has had positive feedback, not just from Ontario, but from a number of health services leaders and agencies in provinces across Canada.

### **Taking account of all stakeholders**

One attendee was concerned about the impact of people's panels upon physicians' earnings, commenting that: "We operate in a perfectly uncontrolled environment where we are very vulnerable to professional and non-professional interest groups, which means that apparently rational solutions are rejected." It's therefore vital to represent all the stakeholders such as doctors, nurses and other interest groups, so that their views are understood and taken into consideration.

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# ***Conclusion***

The five case studies contain some useful lessons that will aid healthcare systems around the world in their efforts to bend the cost curve:

Data will continue to drive much of the change in healthcare, so stakeholders must find ways to harvest and share information without overloading users or systems, employing the best principles of knowledge management. With technology advancing so fast, making the right call on IT is crucial, as many large private and public providers have found both to their advantage and cost.

Cultural change may be less of a barrier than many presume. Politicians, healthcare leaders, clinicians and citizens have shown that they're open to new and better ways of doing things, although as one attendee observed, the last line of defense may be "those pesky bureaucrats".

Regardless of whether a provider is public or private, healthcare is essentially a business, so a focus on outcomes – with performance-related incentives – can maintain a commercial mentality while continuing to put the patient first.

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# Agenda

***Bending the Cost Curve: Emerging International Best Practices***  
***15 - 16 November, 2011***

***15 November, 2011***

***Dinner Keynote Speaker***  
***Mr. Gan Kim Yong***  
Minister for Health, Singapore

***16 November, 2011***

7:30–8:30      ***Registration and continental breakfast***  
8:30–8:45      ***Opening remarks***

8:45–10:00      ***Session 1***  
***The Role of Public-Private Partnerships***  
***for Managing Costs***  
  
*Introduction*  
Lady Neelam Sekhri Feachem, CEO, Healthcare  
Redesign Group  
  
*Case Study*  
Queen ‘Mamohato Memorial Hospital in Maseru, Lesotho  
  
*Speaker*  
Dr. Karen Prins, Operations Director of the Queen ‘Mamohato  
Memorial Hospital in Maseru, Lesotho

10:00–11:15      ***Session 2***  
***Developing Health Clusters***  
  
*Introduction*  
Dr. Richard Levin, Senior Scholar in Residence, Association  
for Academic Health Centers; Professor of Medicine, McGill  
University  
  
*Case study*  
University of Pittsburgh Medical Center (UPMC), US  
  
*Speaker*  
Dr. Steven D. Shapiro, Senior Vice President and Chief Medical  
and Scientific Officer, UPMC

11:15–11:30      ***Coffee break***

11:30–12:45	<p><i>Session 3</i>  <b>Innovative Care for Ageing Populations</b></p> <p><i>Introduction</i>  <b>Dr. K. Ranga Rama Krishnan, Dean and Professor, Duke-NUS Graduate Medical School Singapore</b></p> <p><i>Case study</i>  <b>The Medicare Innovations Collaborative (MedIC), US</b></p> <p><i>Speaker</i>  <b>Dr. Bruce Leff, Professor of Medicine, Division of Geriatric Medicine, Johns Hopkins University School of Medicine</b></p>
12:45–13:45	<p><b>Lunch</b></p>
13:45–15:00	<p><i>Session 4</i>  <b>Mobile Health</b></p> <p><i>Introduction</i>  <b>Dr. Sarah Muttitt, Chief Information Officer, Ministry of Health Holdings, Singapore</b></p> <p><i>Case study</i>  <b>Apollo Hospitals, India</b></p> <p><i>Speaker</i>  <b>Ms. Sangita Reddy, Executive Director, Operations, Apollo Hospitals Group</b></p>
15:00–16:15	<p><i>Session 5</i>  <b>Consumer-led Health Reform</b></p> <p><i>Introduction</i>  <b>Ms. Barbara Pitts, National Healthcare Leader, Associate Partner, PwC Canada</b></p> <p><i>Case study</i>  <b>The Citizens Reference Panel of Ontario, Canada</b></p> <p><i>Speaker</i>  <b>Mr. Peter MacLeod, Principal, MASS LBP</b></p>
16:15–17:15	<p><b>Concluding remarks and networking reception</b></p>

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# Roster of participants

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**Mr. Theo Langejan**

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China

***Dr. Wu Xiaobing***

Country Manager, Pfizer China

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# Co-sponsors

## ***Duke-NUS Graduate Medical School Singapore***

The Duke-NUS Graduate Medical School Singapore (Duke-NUS) was established in 2005 as a strategic collaboration between the Duke University School of Medicine, US, and the National University of Singapore (NUS). Its graduate entry, four-year MD (Doctor of Medicine) training programme is based on the unique Duke model of education, with one year dedicated to independent study and research projects of a basic science or clinical nature. Duke-NUS also offers MD/PhD and PhD programmes. Its student body is internationally diverse, as the students come from 11 countries including Singapore, from multi-disciplinary backgrounds that span the arts and humanities to science and engineering. Together with the school's five Signature Research Programmes in Cancer & Stem Cell Biology, Neuroscience and Behavioural Disorders, Emerging Infectious Diseases, Cardiovascular & Metabolic Disorders, and Health Services and Systems Research, Duke-NUS contributes significantly to the development of Singapore's reputation as a vibrant biomedical sciences hub.



## ***McGill University***

McGill University is one of Canada's best-known institutions of higher learning and one of the country's leading research-intensive universities. With students coming to McGill from about 150 countries, our student body is the most internationally diverse of any medical-doctoral university in Canada. The oldest university in Montreal, McGill was founded in 1821 from a generous bequest by James McGill, a prominent Scottish merchant. Since that time, McGill has grown from a small college to a bustling university with two campuses, 11 faculties, some 300 programs of study, and more than 36,000 students. The University partners with four affiliated teaching hospitals to graduate over 1000 healthcare professionals each year.



***The Nuffield Trust***

The Nuffield Trust is one of the leading independent health policy charitable trusts in the UK. The Trust's mission is to promote independent analysis and informed debate on UK healthcare policy. The Trust's purpose is to communicate evidence and encourage an exchange around developed or developing knowledge in order to illuminate recognised and emerging issues. It achieves this through its principal activities:

- Bringing together a wide national and international network of people involved in UK healthcare through a series of meetings, workshops and seminars
- Commissioning research through its publications and grants program to inform policy debate
- Encouraging interdisciplinary exchange between legislators, academics, healthcare professionals and management, policy makers, industrialists and consumer groups
- Supporting evidence-based health policy and practice
- Sharing its knowledge in the home countries and internationally through partnerships and alliances

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# Contacts

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