Innovations in Health Care
A Synthesis of Ideas from the Harvard University Advanced Leadership Initiative Think Tank
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Preface:
The Think Tank Premise

The Advanced Leadership Initiative (ALI) at Harvard University is dedicated to educating and deploying a leadership force of experienced professionals who can address challenging national and global problems. An important part of the process is to stimulate discussion among experts and advocates about the gaps that can be filled by advanced leaders, including the Advanced Leadership Fellows at Harvard who are preparing to transition from their primary income-earning years to their next years of service. Each year, ALI convenes three solution-finding workshops called Think Tanks to delve deeply into the nature of social problems, their potential solutions, the barriers to change, and the ways advanced leaders can make a difference.

On March 9-11, 2011, over 150 leaders in the field of health gathered to discuss problems in health care and identify opportunities for innovation. The Think Tank was chaired by Barry Bloom, Distinguished University Service Professor at the Harvard School of Public Health, who highlighted the need for new solutions. It is a basic principle of systems that they, whether domestic or global, are perfectly designed to achieve the results they get. If we want better access, higher quality of care, improved health outcomes and more financial security, we need innovations that will alter these health systems. This type of change calls for advanced leaders to identify opportunities, develop solutions, and bring them to scale.

Addressing an unmet social need or unsolved problem, such as innovations in health care systems, differs from assigning tasks or formulating strategies in established organizations or exercising leadership in a domain with existing pathways and institutions. Rosabeth Moss Kanter, Ernest L. Arbuckle Professor of Business Administration at Harvard Business School and ALI Chair and Director, observed that even seemingly simple ideas for change require multiple strategies in multiple domains, taking various stakeholders into account. Advanced leaders must work within complex and unorganized social contexts, where stakeholders are diverse, goals are vague or conflicting, authority is diffused, resources are dispersed, and existing pathways for action often do not exist. Forging change thus requires a special kind of leadership. When leaders lack formal authority over an unbounded system, they need to think systemically while mastering domain-specific knowledge. They must influence individuals and groups to mobilize resources and collaborate. They need a highly developed sense of contextual and emotional intelligence to understand stakeholder assumptions and motivations. And they must find ways to create shared purpose or common ground to get actors to move forward on an issue. Leading innovations in health care calls for not one but many advanced leaders.

Dialogue about what gaps exist and how to fill them began 10 days prior to the Think Tank with the publication of a think piece series on Harvard Business Review’s online portal – HBR.org (See Appendix X for titles and web links). These articles set the stage for three days of discussion that followed. This report offers a narrative summary of the dialogue and highlights opportunities for action, both large and small.

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ADVANCED LEADERSHIP INITIATIVE AT HARVARD UNIVERSITY
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Summary
The Need for Innovations in Health Care Systems

A commonly recognized goal of a health system is to provide better care to more people at less cost in order to improve the population’s overall health outcomes, offer financial security, and realize greater equity.

Unfortunately, health systems often fail to achieve these objectives. The United States only realizes some of these health system goals for some of its citizens but none of these goals for all of its population, Barry Bloom said. Although an increasingly larger portion of U.S. GDP has shifted toward the health sector, over 40 million people remain uninsured. In developing countries, weak health systems struggle to provide basic care, while citizens, especially the poor, pay more costs out-of-pocket. The challenge in both contexts is how to how to use already scarce financial and human resources to deliver better care to more people at less cost.

Innovation has been slower in health care than in other sectors, and the U.S. health care industry, in particular, has become dysfunctional, argued David Cutler, Otto Eckstein Professor of Applied Economics at Harvard University. “What will it take for health care to improve?” he asked. Cutler suggested examining what successful firms in innovative industries do. In sum, they have the right kind of information technology, reward the right things, have good leadership, and empower employees and upstarts.

Yet within the health care sector, it is difficult to implement these solutions, especially in the United States. While there is relatively little incentive for IT in the sector, it alone does not guarantee across-the-board productivity improvements in the industry. While budget constraints may spur innovations — find creative ways to do more with less — it is difficult to expand, for example, hospital-level innovations across a large and fragmented space. While visionary leaders can transform firms, the process of delivering care is more complex and difficult to manage than in other industries. Finally, while it may take new firms to innovate and disrupt the industry, it remains hard to spread change in a relatively fragmented national network of payers and providers. Cutler concluded by asking whether it is better to bring change via incremental changes (one small step at a time) or through major reform (the giant leap) — or both.

Systemic change, in the developed or developing world, calls for actors to lead greater innovation — incremental and disruptive — in all areas of the health care system, from products and services to processes and payments.

Incremental innovations consist of small improvements that lead to better products and services or to more efficient processes that reduce costs. As an example of the latter, consider the implementation of checklists in care situations. It lowers medical error by improving communication among surgical teams, said William Berry, Project Director of the Safe Surgery Saves Lives, a collaboration between the World Health Organization and Harvard School of Public Health. As a low-cost process intervention, checklists have the potential to improve care in both developed and developing country contexts.

Disruptive innovation, as described by Clayton Christensen, the Robert and Jane Cizik Professor of Business Administration at Harvard Business School, includes breakthroughs generated by new technolo-
gies, business models, and value frameworks, which reconfigure the creation and delivery of products or services to the point that new industries and relationships emerge. Christensen argued that health care, with its expensive technology and delivery models, is in need of disruptive innovation which would diffuse technological innovations and decentralize use. Enabling lower-cost modes of care (whether through technology, human resources, or capital) would make care more affordable and accessible. For example, mobile communications could revolutionize care delivery throughout the world, said David Aylward, Executive Director of the mHealth Alliance, a partnership formed by the United Nations, Vodafone, and Rockefeller Foundations. The technology has the potential to empower patients and practitioners with the information needed to make better informed decisions about their health. In the developing world, especially, it has already begun to increase access to care providers and resources.

Whether incremental or disruptive, the forging and scaling of innovations requires leaders to marshal resources from multiple stakeholders and encourage them to work together to achieve shared goals. This calls for leaders to overcome resistance to change, often by building coalitions that gain the authority needed to forge new institutional pathways and reinvent aspects of the health care system.
Innovations in the U.S. Health Care System

The U.S. health care system, at its most basic, consists of three players: patients, providers and payers. Patients pay premiums to private and public insurers, who negotiate with providers and pay them for the services provided to patients. Patients must trust that payers and providers are working in the patient’s best interests, both in health and cost.

Yet within America’s complex, multi-payer system – with its different rates and standards of care – the simplicity of the arrangement has given way to a confused, tangled web of connections that hinders the proper functionality of the system. The U.S. health care system is large and diverse sector, ranging from solo rural practitioners to giant multibillion-dollar pharmaceutical companies. Although the ultimate objective of the system is to increase people’s health, the motives and actions of many players within the system have not reflected this goal. This has stymied innovation. Incentives are misaligned and authority is diffused throughout, making it difficult for any one player to implement new solutions. The system has become too costly for both individuals and the nation as a whole.

Yet there are also areas within and across each player’s realm that are ripe for innovation and change. To improve system performance, innovators must lead across silos and realign stakeholder goals to create new products, services, processes, or payment arrangements.

OPPORTUNITIES AMONG PAYERS: NEW PAYMENT MODELS
Several panelists highlighted areas for reform through the way in which health care is financed. In the United States, that is mostly through either public programs (Medicare, Medicaid) or premiums paid to private insurers. These public and private payers serve as proxies for the patients in purchasing and negotiating the price of health care services. As health expenses have skyrocketed and questions of quality of care persist, payers have increasingly taken on the role of controlling costs and improving quality of care by creating payment systems that reward efficient care. With the future expansions of coverage from the Affordable Care Act, the need to provide quality service while controlling costs has become ever more urgent.

Since payers have been tasked with identifying quality providers, negotiating the lowest rates possible, setting standards of care for pay-for-performance schemes, and incenting providers to provide efficient care, they in many ways have become the crux of the system.

The goals of insurers become even more complex as they must also correctly assess the risk of their patient pool through actuarial models. To do so, they need to obtain good information about patients and providers to best estimate costs and assure quality care. Since their models are inherently imperfect, many insurers have ventured into the realm of providing health information and preventive services for their beneficiaries in order to keep them healthy and lower costs.

A major area of innovation on the payer side has been trying to share the risk of patients’ health care with providers. To do so, payers must create better models of payment that reward quality, not quantity, of services. Deborah Devaux of Blue Cross Blue Shield MA (BCBSMA) explained how their Alternative Quality Contract (AQC) model makes providers assume much of the risk for patient health and then rewards them
financially for keeping patients healthy. BCBSMA has seen quality improvements larger than anything previously seen, with all providers achieving their budgets and meaningfully managing costs. This is one example of where adjusting incentives (paying for healthy patients instead of sick ones) realigns the goals of players.

The AQC model uses bundled payments to reimburse providers. Michael Chernew, Professor of Health Policy at Harvard Medical School, further explicated the concept. Payers give providers a certain amount per medical episode or per patient over a certain period of time. With that bundled payment, the provider is responsible for providing all necessary medical care. By extension, it is hoped, the provider will do all in his or her power to keep the patient healthy and avoid acute, costly episodes.

Finally, Meredith Rosenthal, Associate Professor of Health Economics and Policy at Harvard School of Public Health, spoke of pay-for-performance systems, and the potential for innovation in figuring out how to best implement such systems. Numerous questions arise when payers reimburse performance: How do we know what “performance” is best, especially in light of emerging science? How can we accurately and consistently measure performance? Is it better to pay for performance measures or health outcomes? How much of a patient’s health is really within a doctor’s control? Yet where problems lie, there lie innovation opportunities.

Other innovation opportunities in the payer area include:

- Figuring out the best way to share risk between payer to provider
- Defining care standards based on the most proven efficient care (high quality, low cost)
- Finding better ways to reward value of services, not quantity
- Pioneering cost-effective medicine
- Discovering new ways to incent providers to respond to payments

Importantly, payers must work closely with providers and patients to develop and implement systemic solutions.

OPPORTUNITIES AMONG PROVIDERS:
DELIVERING HIGHER QUALITY CARE

Providers of health care have realized that to stay competitive and offer the best quality of care with reliable outcomes to patients, they will have to be innovative and flexible to keep up with the rapidly changing health care system. Throughout the event, an emphasis on teamwork and patient-centered care emerged. Additionally, there was an emphasis on creating a system in which it is difficult for providers to err—a system that both prioritizes patient health and supports the decisions and actions of providers.

William Berry, project director of the Safe Surgery Saves Lives initiative, highlighted checklists as one way to change the system to help both patients and providers. Checklists in surgery open up new lines of communication within the surgical team, ultimately improving patient outcomes. Thomas Lee, Network President of Partners Health Care System, also emphasizes a team-centered approach. He asserted that when physicians feel they are on a team working toward a common goal (patient health) they can better communicate and share important knowledge.

Physicians must also move past the notion that “best practice” standards of care means “cookie cutter” care and accept that for health care to be both effective and affordable, efficiency in care must be considered. Such efficient, measureable care is in line with the measurement goals of payers. By working together with payers, providers can stay on the forefront of both medical and payment innovation.

One of the potential problems cited during the Think Tank is that provider’s objectives—to provide care to patients and to earn a living—are sometimes at odds. The payment system has been created to reward quantity of services provided, not value and health of a patient. Finding a way to realign those objectives is an area ripe for innovation.

As Lucian Leape, Adjunct Professor of Health Policy at HSPH, and Susan Block, Co-director of the HMS Center for Palliative Care, pointed out, the training of doctors has not kept up with the needs and challenges
of the changing times. Now more than ever we have physicians who want a work-life balance, said Leape, and patients who want to form a better, longer-lasting relationship with physicians. This re-humanizing of the system both improves patient outcomes, and as Block explains, can be cost-efficient when providing end-of-life care, by providing the level of care the patient wants.

Other innovation opportunities in the provider area include:

- Facilitating communication between providers (on patient teams and different levels of providers)
- Optimizing measurable effective care
- Pioneering medical education reform (updating education with needs)
- Creating systems that discourage errors and foster support for all levels of providers
- Creating a dialogue around end-of-life care

OPPORTUNITIES AMONG PATIENTS: EMPOWERING PATIENTS TO SEEK VALUE

Although the entire health care system is based on the notion of providing care to patients to improve health, patients are the least empowered of all the players. They flounder in this system because of a lack of knowledge about both the price and quality of care they receive. Since payers serve as the purchasing proxy between patients and providers, they are ultimately the ones who know and can negotiate prices. Payers are also in charge of choosing which providers will be in their network, constraining (hopefully in a positive way) patients' choice of physicians and hospitals. Patients are left to hope that whichever payer they have chosen—or has likely been chosen for them by their employer—does an adequate job at a reasonable price.

Furthermore, it is difficult for patients to judge the quality of care they receive, as health care is often unique and episodic. Many patients only seek care when they are ailing, instead of pursuing preventive measures. This leads to a lack of continuity of care, and it makes it difficult for patients and providers to create a good working relationship to increase overall health status.

Ideally, patients would be in a system that provides the best health outcomes possible for the lowest price. Care would be accessible, and there would be adequate information and freedom of choice for patients to choose the best providers. Patients would also have enough information to know about the quality of care they received. Additionally, patients would be supported in preventive measures and have a continuity of care from when they were at their healthiest to their sickest.

Perhaps for patients to become empowered they will have to join forces with one another to build communities and coalitions. Nikolaj Jan Piskorski, Associate Professor of Strategy and Marvin Bower Fellow at Harvard Business School, proposed the notion of social networking to build a health community for patients. Networks of people brought together to share information about payers, providers, and health resources can serve to empower patients and rebuild broken links in the health care chain.

Other innovation opportunities in the patient area include:

- Patient empowerment (increasing knowledge and freedom of choice)
- Partnerships between patients, payers, and providers
- Increased preventive support

THE TRANSFORMATIVE POTENTIAL OF ELECTRONIC HEALTH RECORDS

In the center of the tangled web of patients, payers and providers lies the Electronic Health Record (EHR). The EHR has promised to make patients more mobile, reduce waste in duplication of tests and procedures, and lower medical errors by giving physicians more complete information about a patient. It may also provide payers with accurate measurements about provider utilization and behavior, allowing for more pay-for-performance measures. In spite of, or perhaps because of, the EHR’s multi-functionality and shared benefits, comprehensive systems are still absent in many health systems in America.

One of the key points touched upon in all panels was the need for “coordinated care.” For care to become truly coordinated, providers throughout all stages of
patient care must be able to easily access the patient’s medical history and previous test results. Additionally, they must know and trust the source of the information. EHR systems should also be easy for physicians to use, so that uptake is rapid and patients do not feel as if their voice is secondary to that of a computer. Finally, the format of EHRs must be easily translatable and shareable across providers. If these goals are not met, the value of the EHR decreases.

There is promise in innovation in the field of Health Information Technology (HIT) from the HITECH Act, in which $30 billion was allocated to incentivize providers to create HIT with meaningful use. This highlights one of the main challenges for implementing good EHRs: the system has tasked providers to create the EHRs, when in fact they benefit multiple parties. In fact, patient mobility actually may threaten a provider’s practice. With these misaligned incentives, there is room for innovation in collaboration between multiple players to create the best system.

This sentiment was expressed by Ashish Jha, Associate Professor of Health Policy and Management at the Harvard School of Public Health. Jha emphasized the need for EHRs to bridge the gaps between silos, making health care more integrated. The technology, he said, exists—it is just a matter of putting it to proper use.

Dossia, a personal health record system championed by Michael Critelli, a speaker at Think Tank, is trying to lead the way in patient information technology. Personal health records (PHR), which would be controlled and accessed by patients themselves, may change the game for EHRs. Yet questions remain: Can PHRs be used meaningfully along with EHRs, or will they replace them or create redundancies? Can PHRs find ways to motivate people to be in better health? Will PHRs get provider and payer buy-in, or will they exist only in the sphere of patients?

Finally, major area for innovation is to bridge the gaps between the three players and overcome the diffusion of authority. Open issues include:

- Who will set best practices for providers? Should the information come from the government, providers or payers?
- How can you innovate across actors when an innovation might help one but hurt another?
- Who is in charge of leading communication between patients, providers and payers?
- Who should lead broader health initiatives (i.e. urban planning, nutrition, etc.)?

These and other unanswered questions remain. ☮
Innovations in Lower-Income Health Care Systems

A core challenge in any health system is how to make sure that scarce resources are used most efficiently to deliver care that improves health outcomes. Innovation is essential for overcoming this obstacle—and in developing countries, where resources are even scarcer, delivery is less extensive, and health outcomes are poorer, innovation may be even more important.

“What variations in health care systems help produce health outcomes?” asked Marc Roberts, Professor of Political Economy at the Harvard School of Public Health. Study of the past offers perspective on how to answer this question for developing countries, said Dean Jamieson, Professor of Global Health at the University of Washington. Since 1840, life expectancy patterns have changed significantly, with today’s developed countries improving considerably—and continuing to do so. These advances coincided with economic growth, yet income may not be the leading factor. What role did technological, knowledge, and educational improvements have? And how much is the increase in life expectancy worth? Given this frame, Jamieson claimed that health is best seen as an investment rather than a cost, suggesting the need for new intersections between “economic” work, which focuses on cutting costs, avoiding waste, and financial protection, and “health” work, which identifies returns from increases in life expectancy and quality-adjusted life years (QALYs).

Innovations may be seen not in isolation but as strategic attempts to alter existing health care systems. Within this frame, opportunities exist for all stakeholders. Yet relationships among the actors in lower-income countries working on this agenda differ from those found in higher-income nations. While health markets are integral to health systems throughout the globe, they play a relatively larger role in the delivery of care in developing countries, where out-of-pocket costs often reach well over 50% of total spending. This context creates distinct innovation opportunities for governments, the private sector, and universities—and many of the most disruptive innovations, such those created by new mobile phone technologies, require cross-cutting collaborations between multiple stakeholders working to forge new governance mechanisms and institutional pathways.

OPPORTUNITIES FOR GOVERNMENTS: THINKING THROUGH SYSTEMS
Governments have multiple options before them for fostering innovation in health care systems. By way of demonstration, William Hsiao, the K.T. Li Professor of Economics at the Harvard School of Public Health, outlined the major issues confronting China and India, home to 40% of the global population. Although China is more centralized than India, both share similar challenges in the form of cost and quality, and both have implemented new financing systems. China offers universal social health insurance, whereby money follows the patients, while India has focused on providing more funding for public facilities coupled with hospital insurance for the poor. Promised spending increases in both countries range from 1% in China and 1-2% in India though actual spending has been less. Regardless, a major challenge for each government, Hsiao argued, is how to transform money into effective and efficient care for the population.
Strategies differ in each country. In China, the government funds and delivers basic health services, while in India it does so for rural areas. In China, the government encourages hundreds of pilots on new payment systems, while in India it does so through hundreds of NGOs and has initiated conditional cash transfer programs. In China, the government has liberalized the hospital sector, while in India it has a more laissez-faire approach, though it does encourage the creation of specialty hospitals. In China, the state has allowed local governments to take the lead on innovations, while in India it relies more on private-sector-led innovations. In both countries, however, the state has taken a strategy of letting a “hundred flowers bloom” and then selecting the best solutions to scale.

Yet country-level scaling poses significant challenges, argued Pierre Barker, Senior Vice President for the Institute of Healthcare Improvement. As the head of large-scale health improvement initiatives in Africa and Asia, Barker highlighted the benefits of moving away from a top-down approach to a bottom-up orientation which taps into the local knowledge of frontline employees to make performance and capacity improvements such as in the area of maternal health in Ghana, and then spread them across the country. Doing so requires a systematic process of not only testing the innovation but also getting buy-in from local leaders with an awareness of how proposed systems improvements touch upon interconnected care processes. Until now, however, an “implementation gap” remains. “We are hostage to our inability to implement and scale up what we know will work,” Barker said.

Whether in China, India or Ghana, key opportunities for innovation in developing countries include better use of private solutions (including public-private partnerships), new roles for universities, and the leveraging of new mobile phone technologies.

OPPORTUNITIES FOR THE PRIVATE SECTOR:
FROM THE HEALTH MARKETPLACE TO PARTNERSHIPS
While markets are integral to health systems throughout the world, they play a relatively larger role in the delivery of care in developing countries. This reality creates challenges and opportunities for private-led improvements, claimed Gina Lagomarsino, Principal and Managing Director of Results for Development Institute and head of the Center for Health Market Innovations, as well as for private-public partnerships, argued Wendy Woods, Partner and Managing Director of the Boston Consulting Group.

A large portion of health care systems in developing countries may be seen as the relationship between consumers who choose where to seek care and pay directly to a variety of providers, including private clinics, private hospitals, pharmacies, village health workers, informal providers, and non-governmental organizations. However, this health marketplace often underperforms due to the fragmented and informal nature of providers, lack of standards and oversight, low consumer knowledge, the existence of unnecessary or harmful care, affordability issues, and the inability to deliver effective interventions to target populations—all resulting in poor health outcomes, financial insecurity, low consumer satisfaction, and inequity.

But there are opportunities. Market approaches have had a striking impact on the delivery of discrete products and services such as electro-cardiograms, heart and cataract surgeries, and HIV/AIDS drugs, said Kash Rangan, Professor at Harvard Business School. In each case, private enterprises increased scale and lowered cost to the point that they developed a sustainable financial model that delivered better products or services to more people at lower cost.

Opportunities for health market innovations, said Lagomarsino, exist in at least five areas:

- **Organizing delivery** includes programs that “reduce fragmentation and informality in the health care delivery system.” For example, World Health Partners uses a franchising model in India to provide health care services through village shops by providing them with basic inputs and connecting them with a telemedicine center to assist with care decisions for rural consumers who either pay out of pocket or use government insurance, vouchers, or coupons.

- **Financing care** includes programs that “mobilize funds and give purchasing power to the poor.” For example, a co-funded program by the Kenyan Government and the German Development Bank created two voucher programs targeting pregnant women which reimbursed providers for complicated birth deliveries, thus reducing barriers to mothers for facility use.
INNOVATIONS IN LOWER-INCOME HEALTH CARE SYSTEMS

- **Regulating performance** includes programs that "set standards, enforce and promote quality care." For example, an accreditation program for drug-dispensing outlets through licensing helps to improve the quantity of unregistered medicines, the quality of services rendered, and the availability and affordability of medicines.

- **Changing behaviors** includes programs that "educate consumers and train providers to seek and deliver better care." For example, Operation ASHA in India seeks to eliminate Tuberculosis not only through enhanced processes and streamlined service delivery but also through social marketing campaigns educating and encouraging treatment use.

- **Enhancing processes** includes programs that "apply new technologies and operational processes to improve quality, access, and cost." For example, in India the Health Management and Research Institute (HMRI) seeks to provide access to emergency health services by partnering with the Andhra Pradesh state government, who covers 95% of costs while HMRI assumes responsibility for operating the mobile helpline, information technology, and van service system.

As some of these cases demonstrate, health market innovations are not the sole domain of private companies and social entrepreneurs. Governments and non-profits can also contribute to creating the programs and policies necessary for improving health marketplaces.

As the boundary between the for-profit, non-profit, and public sector blurs, private enterprises have opportunities to enter into Public-Private Partnerships (PPPs). Three main types of PPPs include the private-sector social responsibility model, the product-development partnership, and the global and national public–private partnerships. In general, actors range from the public sector to NGOs, faith-based organizations, and foundations to the commercial private sector. Funding may come from public entities, donors, or the private sector. However, the most effective partnerships go beyond funding, Wendy Woods argued. Assets shared include a vision, political and community influence, project management and coordination expertise, human resources, products, distribution capacity, and technical knowledge, often in the form of best practice ideas. The variety of partnerships ranges from putting philanthropic donations into pharmaceutical R&D for diseases in the developing world to cell phone tracking in Rwanda which disseminates better information to people suffering from HIV/AIDS. For all of these situations, key questions include: Who has the capabilities? Who will gain value? The answer is not always clear - thinking differently about traditional roles may increase the scale and speed of health care innovations.

**OPPORTUNITIES FOR UNIVERSITIES:**
**EVALUATION AND TRAINING**

Yet another area of innovation includes the role of universities in the transformation of health systems, ranging from evaluation of interventions and analysis of decisions to the training of health professionals.

**Decision Analysis and Intervention Evaluation**
"Since it is unclear even to experts what the most effective innovations will be in different circumstances, there will be a great need for data, information, and analysis of comparative effectiveness, areas where universities can contribute," Barry Bloom claimed. The identification of effectiveness is critical for deciding where to put aid dollars.

Although there are hundreds of decision analyses studies published every year, few inform policy decisions. Joshua Salomon, Associate Professor of International Health at the Harvard School of Public Health, identified three challenges and opportunities associated with current approaches to decision and cost-effectiveness analyses. First, much of the published evidence on cost-effectiveness seems too good to be true. Instead, more ex-post analysis of cost-effectiveness focusing not only on impact but on efficiency is needed. Second, decision analyses often fail to focus on actionable policies. Greater focus should thus be given to adoptable policies, with explicit and credible identification of costs and outcomes. Third, decision analysis may be missing key opportunities to address problems most amenable to the approach. For example, analysis may inform decisions about R&D investment in health technologies, such as new TB drug regimens which are shorter and improve uptake. Opportunities exist in defining global health technology portfolios which would cover various disease burdens, consider different time horizons, and account for key health system requirements.
A similar approach may be applied to program evaluations. "Recent technological achievements in health are very promising," Jessica Cohen, Assistant Professor at Harvard School of Public Health, said, "but there is less progress on delivery." Nava Ashraf, Associate Professor of Business Administration at Harvard Business School, reported that over 13 million preventable deaths occur every year under conditions in which solutions already exist and that 63% of deaths of children under five could have been averted with basic products. The challenge is uptake. In reality, health is a joint production function between consumers and suppliers, Ashraf argued.

Opportunities for improvements exist in the areas of malaria prevention, HIV/AIDS treatment, and contraceptive technologies. Consider the case of distributing bed nets to combat malaria. What is the most effective way to price the nets for distribution in order to increase use? Should they be offered for free, given the social benefits created by their use, or made available for a small fee, based on the observation that users value them more if they pay for the nets? A randomized-controlled trial (RCT) in Kenya testing alternative strategies found that even the smallest of fees reduced usage by pregnant women compared to free distribution, leading to a shift in national policy. Novel findings for how to improve the uptake of interventions to reduce mother-to-child transmission of HIV/AIDS in Botswana were also reported by Roger Shapiro, Associate Professor of Medicine at Harvard Medical School and the Harvard School of Public Health. Likewise, Nava Ashraf discovered that barriers to the adoption of contraception and condom use could be reduced via the development of new incentives such as those that tapped into pro-social preferences.

Unlike in the private sector, where market mechanisms help select for the highest value product or service, the public sector lacks effective mechanisms for identifying the most effective health interventions. Evaluations help fill this void but identifying which products or services achieve the highest and most cost-effective impact.

University researchers, claimed Jessica Cohen, have at least four opportunities for redefining their traditional role:

- Partner early with implementers to conduct evaluations
- Share learnings through the creation of results repositories
- Train implementers in evaluation methods
- Synthesize research in order to identify generalizability of results

**Training of Health Professionals**

Universities are not only creators of knowledge, they also impart it by training professionals. Yet, as the globe becomes more interdependent, argued Julio Frenk Dean of the Harvard School of Public Health and former Minister of Health of Mexico, there is the need to transform professional education in order to strengthen global health systems. As the Co-Chair of a Global Independent Commission on the Education of Health Professionals for the 21st Century, Frenk reported on the existence of several global systemic failures—a mismatch between competencies and needs, weak teamwork, gender stratification, hospital dominance over primary care, global labor market imbalances, and weak leadership for health system performance.

If the goal is to create transformative and interdependent professional education for equity in health, then opportunities for reform are "instructional" and "institutional." Education should seek to be competency-driven, IT-powered, and inter- and trans-disciplinary. At the institutional level, this calls for joint-planning as well as a culture of critical inquiry. Opportunities for concrete enabling actions thus include leadership mobilization, investment enhancement, accreditation alignment, and global learning strengthening.

**THE TRANSFORMATIVE POTENTIAL OF NETWORKING AND MOBILE TECHNOLOGIES**

Mobile technologies have disruptive capabilities, especially in emerging markets. Yet to capitalize on their potential, leaders will need to identify new business models and develop clear value chains.

**mHealth**

Between 2005 and 2010, global mobile subscriptions jumped from roughly two billion to over five billion, making mobile phone ownership and usage arguably the fastest growing technology in history. Much of this
expansion over the past five years has come from developing countries, which make up two-thirds of total users. Wireless networks will soon cover over 90% of the globe’s population. The challenge, according to David Aylward, Executive Director of the mHealth Alliance, is how to leverage this technology to transform the delivery and use of health information, especially in lower-income countries.

A major challenge in developing countries is insuring that underserved citizens have access to quality health care. Mobile technologies have the ability to democratize health care by linking frontline workers with trained professionals who can assist with the diagnosis and treatment of patients. Mobile phones are a quintessential disruptive technology – it is a technology that simplifies, as Clayton Christensen defines it. However, to realize its potential, leaders must also identify new business models and coherent value chains, as well as new regulations and standards to facilitate change. These legs of the stool, said David Aylward, are precisely what the mHealth Alliance seeks to provide. Doing so requires engagement of the entire health eco-system of universities, NGOs, telecommunications companies, application developers, software providers, health professionals, and the government. If achieved, an entire continuum of care, such as for maternal health (a Millennium Development Goal priority) could be provided – from pre-pregnancy, to pregnancy, to delivery, to post-partum and post-natal care.

Health Literacy
One reason mobile technologies have the ability to transform health care is its potential impact on health literacy or "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions." It has been taken up by countries and intergovernmental organizations, including the China, the United States, the European Union, and the United Nations. Quite simply, when individuals understand their own health and the options they have for preventing or treating illness, then outcomes will improve.

For example, health literacy scorecards could be created for people, helping them track their performance on key indicators such as body mass index, blood pressure, or cholesterol – all of which are linked to non-communicable disease. Or, a record could be created tracking the immunization histories of children, said Scott Ratzan, Vice President of Global Health for Johnson & Johnson, who co-chairs the United Nations Innovation Working Group “Every Woman, Every Child.” Realization of these efforts, however, requires further multisectoral work to catalyze innovation and, perhaps more importantly, align efforts toward the achievement of common health goals.

However, identifying a promising innovation in health care – from mobile phones to new business models – is only part of the challenge advanced leaders face.
Leadership Challenges in Health Care Innovations

To have impact — with incremental or disruptive innovation — advanced leaders will have to give proof of concept and scale the solution. While doing so, they run up against innumerable obstacles. The innovation may not align with existing goals in the sector, resources may be dispersed, authority may be diffused, stakeholders may be multiple, and institutional pathways may be non-existent.

Even something as simple as the lack of a shared language creates barriers, such as when it hinders problem definition. Clayton Christensen, for example, likened health care to the Tower of Babel, in which actors discussed problems with their own set of vocabularies brought from various spheres: domestic or international, private sector or public health, payer or provider.

Given the need for advanced leaders to exercise greater contextual and emotional awareness, Jeffrey Selberg, Vice President and Chief Operating Officer of the Institute for Healthcare Improvement (IHI), considered “mindfulness” in itself as an innovation. Such an orientation increases a leader’s sensitivity to the adaptive — instead of purely technical — side of improvement via behavior change. Within this framework, a systems-level goal to strive for was the return to a more vernacular culture where health is viewed as a community’s natural resource and care is an expression of a community’s spirit.

Regardless of the goal, advanced leaders may tackle barriers via two classes of strategic decisions. What is the best organizational vehicle for developing, implementing, and scaling an innovation? And what aspect of the system should a leader target?

VEHICLE

The choice of which organizational vehicle to use for change has important implications for how to marshal resources, exercise decisions, or influence other stakeholders. Logical choices range from the use of an existing organization, to the creation of a new organization, to working through a formal coalition of organizations, to a de novo convening of organizations, to individual action. Johnson & Johnson, for example, works toward global health improvement as part of its existing organization. Meanwhile, Gina Lagomarsino reported the founding of new private entities which implemented new business models. The mHealth Alliance and “Every Woman, Every Child” are coalitions created to help partners work together on larger issues. Finally, individuals may exercise influence by using their personal influence to draw attention to issues or argue for an approach, as in the case of celebrities who take up global health causes.

The strategic selection of each vehicle depends on the context, including the availability of resources, the existence of capabilities, the presence of shared goals, or common platforms. More specifically, Rosabeth Moss Kanter, Ernest L. Arbuckle Professor of Business Administration at Harvard Business School, identified at least four types of organizational models through which innovations could be forged:

- Adjacency Model: Innovation from those who already do something health-related
- Organizational Bundling: Connecting activities from various sectors to operate holistically
LEADERSHIP CHALLENGES IN HEALTH CARE INNOVATIONS

• Carve Out/Focused Start-Up: Integrative, specialized focus, excelling in aspects of one sector

• Within Established Organizations: Grows from culture of innovation and improvement

TARGET
Whatever the vehicle, there must be a target or lever for change, whether it is a policy that hampers innovation, a new program or intervention that meets a need, or people who rally behind a solution that works.

In the field of health care, this may include targeting policy changes in order to change rules or marshal resources, such as how to better provide financial protection for the uninsured, as in the case of U.S. health care reform. Initiatives may also seek to give proof of concept to a product, service, or intervention, such as evidence for the efficacy of a drug or for the uptake of bed nets to prevent malaria. Or, it may include mobilization and empowerment of people either by raising awareness or providing them with better tools for action, such as the creation of health literacy scorecards or the use of mobile and networking technologies to better share health information and connect people.

As with the selection of the most effective organizational vehicle, the identification of a target for change must take local context into account – the diversity of stakeholders, the vagueness of goals, the ability to measure them, the availability of resources, or the existence of institutions – in order to craft and execute on an innovation strategy.

While the forging of innovation pathways may seem lonely, success is not individual. Systemic change is not the domain of a single leader. It is a collaborative effort of advanced leaders working together across multiple sectors seeking to achieve the common goal of higher quality, more affordable health care for all. In a small way, the Innovations in Health Care Think Tank sought to contribute to the creation of these new pathways via an ad hoc convening of leaders who were given a forum for sharing experiences and identifying how they could take the next steps together.❖
Innovations in Health Care
A Synthesis of Ideas from the Harvard University
Advanced Leadership Initiative Think Tank

Appendices
# APPENDIX 1: THINK TANK AGENDA

## WEDNESDAY, MARCH 9, 2011

(All Wednesday events will take place in the Williams Room of Spangler Hall at the Harvard Business School)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>6:30pm</td>
<td>Welcome Reception</td>
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<tr>
<td>7:30pm</td>
<td><strong>DINNER KEYNOTE:</strong> Clayton Christensen – <em>The Innovator's Prescription</em></td>
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## THURSDAY, MARCH 10, 2011

(All Thursday sessions will take place in Spangler Auditorium in Spangler Hall; lunch and dinner will be served in the Williams Room)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:30am</td>
<td>Registration &amp; Breakfast</td>
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</tbody>
</table>
| 9:00am| **Welcome:** Rosabeth Moss Kanter  
**Introduction:** Barry Bloom |
| 9:30AM| **PANEL 1: US INNOVATIONS: MEASURING AND IMPROVING QUALITY**  
**CHAIR** Arnold Epstein – *Pay for Performance: Experience, Evidence, and Prospects*  
**William Berry** – *Checklists*  
**Meredith Rosenthal** – *Rewarding Quality*  
**Jeffrey Selberg** – *Mindfulness as the Innovation*  
**DISCUSSION** Michael Critelli – *Improving Patient Information* |
| 11:30am| Break and transition to lunch |
| 12:00pm| **LUNCH KEYNOTE:** David Cutler – *What Will It Take for Health Care to Improve?* |
| 2:00PM| **PANEL 2: US INNOVATIONS: ORGANIZATION AND FINANCE**  
**CHAIR** Troy Brennan – *Accountable Health Care Organizations and Care Management*  
**Michael Chernew** – *Innovation in Health Care Payment in the US*  
**Deborah Devaux** – *Re-Organizing Health Care Financing*  
**Rosabeth Moss Kanter** – *Developing and Disseminating Organizational Innovations*  
**Thomas H. Lee** – *Implementing a Value Framework* |
| 3:45pm| Break                        |
| 4:00PM| **PANEL 3: US INNOVATIONS: NEW WAYS TO SOLVE PROBLEMS**  
**CHAIR** Robert Blendon  
**Susan Block** – *End of Life Care*  
**Ashish K. Jha** – *Transforming Healthcare through Information Technology: A Good Place to Start*  
**Lucian L. Leape** – *New Ways to Teach Medicine*  
**Wendy Woods** – *Public Private Partnerships* |
| 6:00pm| Break and transition to dinner |
| 6:30pm| **DINNER KEYNOTE:** Dean Jamison – *Priorities in Global Health* |
FRIDAY, MARCH 11, 2011

All Friday sessions will take place in Spangler Auditorium in Spangler Hall; lunch and dinner will be served in the Williams Room.

8:30am  Registration & Breakfast

9:00AM  PANEL 4: GLOBAL INNOVATIONS: THINKING ABOUT SYSTEMS

CHAIR  Marc Roberts

Pierre M. Barker – Optimizing Health Systems in Developing Countries
William Hsiao – Comparing Health System Reforms of China and India
Joshua Salomon – An Agenda for Decision Analysis in Global Health Policy

10:45am  Break

11:00AM  PANEL 5: GLOBAL INNOVATIONS: ROLES FOR THE PRIVATE SECTOR

CHAIR  Kash Rangan

John Kenagy – Adaptive Design: Fixing Health Care through the Private Sector
Gina Lagomasino – Health Market Innovations: Enterprises, Organizations and Policies that Improve the Performance of Health Markets in Developing Countries

DISCUSSION  Charles Denham and Thomas Zeltner – Global Patient Safety Innovation Acceleration Project

12:30pm  LUNCH KEYNOTE:

Julio Frenk – Innovations in the Education of Health Professionals

2:00PM  PANEL 6: GLOBAL INNOVATIONS: NETWORKING

CHAIR  David Aylward

David Aylward – mHealth – How Wireless Can Transform Health and Public Health
Mikolaj Jan Piskorski – Can Social Networks Be Usefully Engaged in Health?
Scott Ratzan – Innovations in Global Health in the Private Sector

3:45pm  Break

4:00PM  PANEL 7: GLOBAL INNOVATIONS: ROLE OF UNIVERSITIES IN INNOVATIONS

CHAIR  Barry Bloom

Nava Ashraf – The User of Health as Co-Producer
Jessica Cohen – Evaluating Complex Health Interventions
Roger Shapiro – Protecting Future Generations of Children from HIV/AIDS

6:00pm  Adjourn
HBR.org Think Piece Series on Innovations in Healthcare

Helping Patients Make Peace with Death
Susan Block, Dana-Farber Cancer Institute

How Mobile Phones Can Transform Healthcare
David Aylward, mHealth Alliance

Health Reform Lessons from Mexico
Julio Frenk, Harvard School of Public Health

Radically Rethinking Health Care Delivery
Jim Champy, Harvard Advanced Leadership Initiative

A Disruptive Solution for Health Care
Clayton Christensen, Harvard Business School

Searching for Health Care’s Entrepreneurial Spirit
David Cutler, Harvard School of Public Health

Vaccine Literacy, a Crucial Healthcare Innovation
Scott Ratzan, Johnson & Johnson

21st Century Medicine, 19th Century Practices
Ashish Jha, Harvard School of Public Health

The Case for Innovation in Health Care
Barry Bloom, Harvard School of Public Health

Why Innovation Is So Hard in Health Care – and How to Do It Anyway
Rosabeth Moss Kanter, Harvard Business School

Advanced Leadership Background Think Pieces

The Traits of Advanced Leaders
Rosabeth Moss Kanter, Harvard Business School

Leadership Longfellow Would Appreciate
David Gergen, Harvard Kennedy School of Government
APPENDIX 3: THINK TANK PANELISTS

Nava Ashraf  
Harvard Business School

David Aylward  
mHealth Alliance  
Pierre Barker  
Institute for Healthcare Improvement

William Berry  
Harvard School of Public Health

Robert Blendon  
Harvard School of Public Health

Susan Block  
Dana-Farber Cancer Institute

Barry Bloom  
Co-Chair, ALI  
Harvard School of Public Health

Troyen Brennan  
CVS Caremark

Michael Chernew  
Harvard Medical School

Clayton Christensen  
Harvard Business School

Jessica Cohen  
Harvard School of Public Health

Michael Critelli  
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David Cutler  
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Harvard School of Public Health

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Harvard School of Public Health

William Hsiao  
Harvard School of Public Health

Dean Jamison  
University of Washington

Ashish Jha  
Harvard School of Public Health

Rosabeth Moss Kanter  
Chair and Director, ALI  
Harvard Business School

John Kenagy  
Kenagy & Associates, LLC

Gina Lagomarsino  
Results for Development

Lucian Leape  
Harvard School of Public Health

Thomas Lee  
Partners Healthcare System

Marc Mitchell  
D-International

Mikolaj Jan Piskorski  
Harvard Business School

Kash Rangan  
Harvard Business School

Scott Ratzan  
Johnson & Johnson

Marc Roberts  
Harvard School of Public Health

Meredith Rosenthal  
Harvard School of Public Health

Joshua Salomon  
Harvard School of Public Health

Jeffrey Selberg  
Institute for Healthcare Improvement

Roger Shapiro  
Harvard Medical School

Wendy Woods  
Boston Consulting Group

Thomas Zeltner  
Harvard Advanced Leadership Initiative
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Chairman Emeritus, Dell Services Consulting

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Anna Burger
Former Chair, Change to Win
International Secretary-Treasurer, Service Employees International Union
Gilberto Dimenstein
Daily National Affairs Journalist, Grupo Folha
Harvey Freishtat
Former Chairman, McDermott, Will & Emory LLP
Somak Ghosh
Co-Founder and Former Group President, Corporate Finance and Development Banking, YES Bank
Deborah Jackson
Former CEO, American Red Cross of Massachusetts Bay
Carlos Jáuregui
Secretary of Public Security, State of Nuevo León
Gwendolyn Norton
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Former Finance Commissioner, Virgin Islands
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Former Acting Surgeon General, U.S. Army
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Former President and CEO, Anheuser-Busch International, Inc.
Robert Saudek
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Former Senior Vice President, U.S. Steel
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Founder and Former Managing Director, Reuters Greenhouse, The Reuters Venture Capital Fund
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Mike Zak
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Fred Southwick, M.D.
Chief of Infectious Diseases, Professor of Medicine,
University of Florida College of Medicine
Junko Yoda
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Former Director for Asia, Deutsche Bank
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RAPPORTEURS: Eleanor O'Donnell, Claire Allen, Matthew Bird
COVER PHOTOGRAPHS: Evgenia Eliseeva

PHOTOGRAPHS (LEFT TO RIGHT): Harvard Professor Barry Bloom, Think Tank attendees, Harvard Professor David Cutler

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