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Disruptive Innovation and Challenges in Healthcare 3.0

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Abstract

"Disruption" describes a process whereby a smaller company with fewer resources is able to successfully challenge established incumbent businesses. Disruptive innovations are made possible because they get started in two types of markets that incumbents overlook. Health care is changing at a rapid pace, moving from a system that rewards volume to one that promotes and rewards value. At the same time, forces such as the rise of consumerism and the new digital economy are forcing even greater changes in the way health care is delivered and how providers interact with patients. These massive transformations make the health care field ripe for disruptive innovations as entrants from inside and outside of health care look for new ways to deliver services and new services to deliver.

This disruption is not just limited to small start-up companies. In recent months, we've seen a deluge of mergers announced, with CVS and Aetna announcing plans to merge and Wal-Mart reportedly in talks to merge with Humana. Companies such as Amazon, Apple and Berkshire Hathaway have made waves with new potential health care alliances and ventures. And more is on the horizon. The healthcare industry has also undergone massive disruptive process from Health 1.0 to 3.0 and the technologies and challenges associated with it.

Keywords: Health care systems; Medical case management; Healthcare communication; Hospital networks; Emergency medical care

Introduction

Social Networking

Served as a platform to facilitate conversation, allowing users to see what their peers were doing.

Participation

Allowed patients to play an active role in their healthcare by controlling their own health information.

Apomediation

Offered patients a third option to receive high-quality healthcare information-in addition to healthcare professionals and conducting online research-from experts, tools and services.

Collaboration

Provided the opportunity for researchers, healthcare professionals, patients and the community to come together and work to improve healthcare initiatives.

Openness

Permitted the public to have access to information that was previously limited, such as health records, research and data.

Healthcare organizations traditionally operated as a closed system, but Medicine 2.0 strived to change that by promoting the above five themes to allow everyone to be involved. This aided for the ability to make better healthcare decisions. Health 2.0 empowered patients to be more actively involved in their own healthcare decisions. Providing the opportunity to share their Electronic Health Records (EHR) with medical professionals, researchers and caregivers, offered a whole new level of participation, giving them a greater stake in their healthcare. When people are more informed about various health issues, they can become better equipped to manage them. Medicine 2.0 could largely impact the number of chronic conditions impacting Americans, providing them with the necessary tools to combat preventable health issues. Health informatics and health 2.0 had the power to shape public health for the better by focusing on preventative care. Data from individuals could be gathered and used to address the health concerns of the general population, rather than only individuals. This could seriously lower the entire population's risk of disease and disability [2].

The Evolution of Healthcare 2.0

The World Wide Web, social media contexts and technology advances have turned around the way people communicate, broadening consumer ability to create and share product or service-related information. Web 2.0 applications enable consumer empowerment through increased connectivity (forums or communities) and an easier access to a large amount

of information that make individuals increasingly aware and acknowledged about a brand or a product. Variables conventionally pre-determined by firms, such as the exposure to product information or advertisements, are directly mastered by customers in the digital world. Information and Communication Technologies (ICTs) suggest new and direct forms of interactions between customers and firms. Indeed, the above-described emerging consumer behaviours developed also in the healthcare sector. Nowadays, new health service models arise from ICTs advances, failing the traditional concept that medical care must be provided in hospitals and be restricted to the sole patient-doctor relationship.

International studies have outlined how patient's characteristics are changing over time. The adoption of ICTs in the healthcare sector has generated the so-called "Health 2.0", enabling patient empowerment and education. "Health 2.0 is the transition to personal and participatory healthcare. The term Web 2.0 has been around since 2003. The O'Reilly organization both coined the term and started the Web 2.0 Conference. Gradually Health 2.0 grew into a global movement of over 100,000+ entrepreneurs, developers, and healthcare stakeholders.

While the "2.0" moniker was originally associated with concepts like collaboration, openness, participation, and social networking in recent years the term "Health 2.0" has evolved to mean the role of Saas and cloud-based technologies, and their associated applications on multiple devices. Health 2.0 described the integration of these into much of general clinical and administrative workflow in health care. Health 2.0 had several competing terms, each with its own followers-if not exact definitions-including Connected Health, Digital Health, Medicine 2.0, and mHealth. All of this support a goal of wider change to the health care system, using technology-enabled system reform-usually changing the relationship between patient and professional.

In the late 2000s, several commentators used Health 2.0 as a moniker for a wider concept of system reform, seeking a participatory process between patient and clinician: "New concept of health care wherein all the constituents (patients, physicians, providers, and payers) focused on health care value (outcomes/price) and used competition at the medical condition level over the full cycle of care as the catalyst for improving the safety, efficiency, and quality of health care". Health 2.0 defined the combination of health data and health information with (patient) experience, through the use of ICT, enabling the citizen to become an active and responsible partner in his/her own health and care pathway. Health 2.0 is participatory healthcare. Enabled by information, software, and communities that is collected or created, the patients can be effective partners in their own healthcare, and we the people can participate in reshaping the health system itself [3].

Much of the potential for change from Health 2.0 is facilitated by combining technology driven trends such as Personal Health Records with social networking-"[which] may lead to a powerful new generation of health applications, where people share parts of their electronic health records with other consumers and 'crowdsource' the collective wisdom of other patients and professionals. Traditional models of medicine had patient records (held on paper or a proprietary computer system) that could only be accessed by a physician or other medical professional. Physicians acted as gatekeepers to this information, telling patients test results when and if they deemed it necessary. Such a model operates relatively well in situations such as acute care, where information about specific blood results would be of little use to a lay person, or in general practice where results were generally benign. However, in the case of complex chronic diseases, psychiatric disorders, or diseases of unknown etiology patients were at risk of being left without well-coordinated care because data about them was stored in a variety of disparate places and in some cases might contain the opinions of healthcare professionals which were not to be shared with the patient. Increasingly, medical ethics deems such actions to be medical paternalism, and they are discouraged in modern medicine.

However, in spite of many advantages, Healthcare 2.0 has had its share of criticism. Hughes et al. (2009) argued that there are four major tensions represented in the literature on Health/ Medicine 2.0. These concerns are:

- The lack of clear definitions
- Issues around the loss of control over information that doctors perceive
- Safety and the dangers of inaccurate information
- Issues of ownership and privacy

Evolving Global Scenario in Healthcare

Evolving policies, processes, and capabilities to deliver smart health care will not be easy, given global health care's magnitude and complexity. For example, there could be significant logistical and technology obstacles to overcome. More and more inpatient services are being pushed to non-traditional care settings such as the home and outpatient ambulatory facilities. Members of the health care delivery chain often work in multiple locations (hospital, doctor's office, retail medical clinic, diagnostics lab). Patients may reside in a city or even a country away from their care providers. And health records frequently reside in different formats and on disparate systems. Clinicians may, therefore, have difficulty coordinating appointments and procedures, sharing test results, and involving patients in their treatment plan. In other words, care providers may be working hard but they are not necessarily working "smart." Independently and collectively, health care stakeholders are likely to face a number of existing and emerging issues in their quest to get "smarter".

Several criticisms have also been raised about the use of Web 2.0 in health care. Firstly, Google has limitations as a diagnostic tool for Medical Doctors (MDs), as it may be effective only for conditions with unique symptoms and signs that can easily be used as search term. Studies of its accuracy have returned varying results, and this remains in dispute. Secondly, long-held concerns exist about the effects of patients obtaining information online, such as the idea that patients may delay seeking medical advice or accidentally reveal private medical data. Finally, concerns exist about the quality of user-generated

content leading to misinformation, such as perpetuating the discredited claim that the MMR vaccine may cause autism.

With financial sustainability, care delivery, patient centricity, digital transformation, and regulatory compliance at the top of the agenda, health care sector leaders need to collaborate with all stakeholders-both within the health care ecosystem and those in converging industries-as they look to shape the future of health care and establish a sustainable smart health community. The adage, "What goes up, must come down," isn't likely to apply to the global health care sector in 2019. Aging and growing populations, greater prevalence of chronic diseases, exponential advances in innovative, but costly, digital technologies-these and other developments continue to increase health care demand and expenditures. Health care stakeholders-providers, governments, payers, consumers, and other companies/organizations-struggling to manage clinical, operational, and financial challenges envision a future in which new business and care delivery models, aided by digital technologies, may help to solve today's problems and to build a sustainable foundation for affordable, accessible, high-quality health care. This vision may have a greater probability of becoming a reality if all stake-holders actively participate in shaping the future-by way of shifting focus away from a system of sick care in which we treat patients after they fall ill, to one of health care which supports well-being, prevention, and early intervention.

Global Health Care Sector Issues in 2019

Creating financial sustainability in an uncertain health economy

Global health care expenditures are expected to continue to rise as spending is projected to increase at an annual rate of 5.4 percent between 2017-2022, from USD $7.724 trillion to USD $10.059 trillion. The emergence of personalized medicine, increased use of exponential technologies and entry of disruptive and non-traditional competitors, the demand for expanded care delivery sites, and revamped payment and public funding models are all impacting the financial performance of the health care ecosystem. The health care market is looking to health technology for help, along with mergers, acquisitions, and partnerships. Stakeholders are also exploring alternative revenue sources such as vertical integration.

Using new care delivery models to improve access and affordability

Moving from volume to value will require building an outcomes-based financial model and data infrastructure to maximize Value-Based Care (VBC) reimbursement pathways, which will likely be fundamental to many health systems' sustainable growth. This shift is the most apparent in the United States, where the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) provisions will see payment adjustments and incentive payments take effect in 2019. Clinical innovations, patient preferences, and government program payment policies are prompting hospitals to shift certain services to alternative points of care and even to virtual environments that benefit from a cost and access perspective. It is also being seen that social determinants of health often have a greater impact on health outcomes than does health care.

Adapting to changing consumer needs, demands, and expectations

Patients and caregivers, dissatisfied with poor service and lack of transparency around price, quality, and safety, are expecting health care solutions that are coordinated, convenient, customized, and accessible. With health care becoming "shoppable" and increased costs for patients in a cost sharing model, enhancing the patient experience is a potential area for dramatic change. Non-traditional companies from consumer, retail, and technology sectors are also making forays into the health care value chain with solutions that are disrupting the norm. As preventative health takes a greater role, "nudging' is increasingly seen as an option to help with patient adherence.

Investing in digital innovation and transformation

There is an exponential increase in the pace and scale with which digital health care innovations are emerging. Digital technologies are supporting health systems' efforts to transition to new models of patient-centered care and helping them develop "smart health" approaches to increase access and affordability, improve quality, and lower costs. From Block-chain, RPA, cloud, Artificial Intelligence (AI), and robotics, to Internet of Medical Things (IoMT), digital and virtual reality is just some of the ways technology is disrupting health care. These technologies are helping with diagnosis and treatment, helping with speed, quality and accuracy, and improving the patient experience.

Maintaining regulatory compliance and cyber security

As data is becoming the new health care currency, protecting it will be key. Clinical innovations, connected medical devices, and market complexity have amplified the continued need for evolving government policies, regulatory oversight, and risk management. The rapid growth of "consumptive" health services such as prescription drug pricing in the United States have recently received a lot of regulatory attention. Cyber security is another top concern to the industry. It is the huge volume of high-value data and growing demand for interconnected IT environments that make health care an attractive target for cybercrime.

There is no doubt that change is coming to health care. Exponential technologies are helping to drive that change by making care delivery less expensive, more efficient, and more accessible on a global basis. Consider: Beginning in 1999, scientists spent five months and approximately USD $300 million to generate the first initial "draft" of a human genome sequence. The cost to generate a human genome sequence is now less than USD $1,00,079 and could eventually drop to less than USD $100. In coming years, exponential technologies have

the potential to dramatically disrupt the systems and processes that have historically defined the industry.

Technological Advancement in Healthcare

With the current advances in technology innovation, the field of medicine and healthcare is rapidly expanding and, as a result, many different areas of human health diagnostics, treatment and care are emerging. Wireless technology is getting faster and 5G mobile technology allows the Internet of Medical Things (IoMT) to greatly improve patient care and more effectively prevent illness from developing. There are no two ways about it: technological developments in healthcare have saved countless patients and are continuously improving our quality of life. Not only has that, but technology in the medical field had a massive impact on nearly all processes and practices of healthcare professionals. Use of technology in the form of digitization of health records has resulted in improved public health, ease of workflow and lower healthcare costs. Our next generation of industry-Industry 4.0-holds the promise of increased flexibility in manufacturing, along with mass customization, better quality, and improved productivity. It thus enables companies to cope with the challenges of producing increasingly individualized products with a short lead-time to market and higher quality. Intelligent manufacturing plays an important role in Industry

4.0. Industry 4.0, a German strategic initiative, is aimed at creating intelligent factories where manufacturing technologies are upgraded and transformed by Cyber-Physical Systems (CPSs), the Internet of Things (IoT), and cloud computing. In the Industry 4.0 era, manufacturing systems are able to monitor physical processes, create a so-called “digital twin” (or “cyber twin”) of the physical world, and make smart decisions through real-time communication and cooperation with humans, machines, sensors, and so forth. Industry 4.0 combines embedded production system technologies with intelligent production processes to pave the way for a new technological age that will fundamentally transform industry value chains, production value chains, and business models. The Internet of things (IoT) entails sets of gadgets, vehicles, and home equipment that contain hardware, programming, actuators, and network support, which enables to interface and trade data. Hence, these devices can impart and join forces over the Internet possibly using remote observation and control. The Internet of Services (IoS) paradigm can connect gadgets intelligently. The (IoT), the IoS and so forth can comply to the Industry 4.0 standard since it allows for the physical processes’ virtualization and their transformation into services having in mind for the health domain that things such as artificial organs, biosensors, smart devices and smart pharmaceuticals are already available. Hereafter, services will turn around these objects to virtualize several levels of care, help patients and healthcare professionals to reach independence, link up devices and technologies, and move towards the personalized medicine. Artificial intelligence and the more latest emotional intelligence has found its way into the robotic industry and has influenced the way healthcare is being driven. Robots are everywhere from science fiction to our local hospital, where they are changing healthcare. Robotic medical assistants monitor patient vital statistics and alert the nurses when there is a need for a human presence in the room, allowing nurses to monitor several patients at once. These robotic assistants also automatically enter information into the patient electronic health record. Robotic carts may be seen moving through hospital corridors carrying supplies. Robots are also assisting in surgery, allowing doctors to conduct surgery through as tiny incision instead of an inches-long incision. Robotics is making a big impact in other areas of medicine, as well. This is the evolution which has brought about a disruption in the healthcare domain and in turn is trying to make the life of patients less stressful. We find a nerdy kind of joy in process improvement science that allows us to better achieve the outcomes that actually matter to our patients. We hold patients accountable to take control of their health, and they hold us accountable to be their shepherds. We recognize that interiors matter as much as exteriors: the mind-body connection and the conscious experience of human beings are no longer discounted. Each member of the healthcare team supports one another while bringing their unique gifts to bear, and clinician-leaders guide our organizations with compassion and wisdom. This is medicine as a living, evolving, beautifully complex organism where every cell is unique and autonomous yet an integral part of the larger whole. And here we find the joy of caring restored. Welcome to Health 3.0 [4,5].

Healthcare 3.0

Hospitals can provide more personalized care, better engage with consumers, and elevate the patient experience by using digital solutions to aid omni-channel patient access, including customer apps, patient portals, personalized digital information kits, and self-check-in kiosks. 100 Other digital channels and tools to enhance provider-consumer interactions include:

Leveraging social media to improve patient experience

Social media offers health care organizations a potentially rich source of data to efficiently track consumer experiences and population health trends in real time, much more efficiently than current approaches.

Tele-health

Tele-health provides a more convenient way for consumers to access care while potentially reducing office visits and travel time. This convenient care model has the potential to increase self-care and prevent complications and ER visits.

In the future, digital technology may improve the patient experience by providing real-time access to medical knowledge and assistance. Imagine a voice activated system for an impatient patient-an AI-powered, bedside virtual care assistant that can answer or direct queries to the most appropriate person at the hospital. This virtual assistant will be able to answer the patient’s routine questions about diagnoses, expected recovery experiences and times, and daily medication schedules. Such accessible AI technologies will help empower patients and their families will be able to direct specific questions to specialists. In addition, the virtual assistant can act

as a data repository for the patient's medical history, test results, consultation times, appointment schedules, and even stories about other patients who had a similar diagnosis. Such accessible AI technologies will help empower patients and their families. What's good for consumers also can be good for providers. Enhancing the patient experience is regarded as a potential driver of hospital performance, since it can strengthen customer loyalty, build reputation and brand, and boost utilization of hospital services through increased referrals to family and friends. Furthermore, research has shown that better patient experience correlates with lower medical malpractice risk for physicians and lower staff turnover ratios. Technology disruption is transforming both clinical and operational processes within today's health care systems. D. Assist, part of the Deloitte Smarter Health Care Solutions suite across the patient flow pathway in hospital settings, covers "classic pinch points" such as admissions, operating theater and ICU utilization, length of stay, the discharge process, clinical coding, and outpatient scheduling. One D. Assist application is a lean, enhanced patient-to-nurse communication system that replaces the existing call button system used in most of the world's hospitals and aged care facilities.

The solution captures a spoken request for assistance in the patient's room, which is understood by the system and converted to text. The message is then assessed using AI services and processed to identify the patient's request and determine how best to respond. In many cases D. Assist is able to respond to the patient from a database of FAQs, relieving nurses' workload. Where physical assistance is required, the request is assigned a priority, and routed to the most appropriately skilled team to respond to the patient, displaying the patient need with a target time in which to respond. While this is happening, the patient receives a confirmation that their request has been made to the nursing team, providing them with important emotional reassurance. D. Assist provides nurses and the medical team with critical information needed to effectively respond to patients and save lives. For patients, D. Assist is also capable of connecting them with entertainment services such as music and books, and can be combined with intelligent room automation to enable smart controls of the patient environment. Patients can access D. Assist from anywhere in the room, calling for assistance even when the call button is out of reach, such as after a fall.

Technology is making consumers more active in the health care decision-making process. Providers and payers should capitalize on this trend and improve communications and the patient experience life cycle (research, diagnosis, treatment, and follow-up). Yet the industry also needs to narrow the gap between rapidly increasing consumer demands and clinical appropriateness: Are providers delivering the right level of diagnostic services and interventions? Just because there's a demand doesn't mean there is a need. Also, how can stake-holders create a business case to effectively and efficiently deliver on patient expectations? Health care has an opportunity to learn from other industries (consumer products, financial services, and hospitality, as examples) how to more effectively target, serve, communicate with, and retain customers.

Health care workforce challenges are being felt across more and more countries. Staffing shortages are evident in a number of hospital specialties (emergency medicine and geriatrics) and in general practice; there are also growing nursing shortages across both health and social care. Compounding the problem is a scarcity of leaders with strategic, next-generation skills to guide and support the transformation to becoming patient-centric, insight-driven, and value-focused organizations. Digital technology, robotics, and other automated tools have enormous potential to resolve current and future health care workforce pain points-if stake-holders are willing to embrace an augmented workforce, the concept that all of the work that employees do will be augmented; will be extended in different ways. Innovative new solutions that can address present-day provider pain points and focus organizations on mission-critical activities to support the quadruple aim-enhance the patient experience, improve the health of populations, reduce the per capita cost, and enhance the caregiver experience of health care-will spring from different combinations of technology and talent. Nurses could use digital technology, robotics, and other tools to redirect their time from route administrative tasks toward "healing-touch activities" and decision making, while minimizing potential costs and improving care related to human error resulting from manual activities, overwork, and lack of resources. For example, home voice-activated devices could be used to support oral chemo symptomatology management and enhance outcomes. Robotic support for lifting patients could reduce physical burdens and injuries. And application-based crowd-sourced scheduling software can enable more flexibility in shift management, reduce last-minute shift changes, and improve coverage. Health care organizations have an opportunity to help talent and technology joins forces rather than compete with each other, and should coordinate human and technological resources from the outset.

The healthcare scenario is now going towards a gradual shift of techno-human side with the rise of Health 3.0.

A new paradigm is emerging at last one that treats both Health 1.0 and 2.0 as partially true, but incomplete. A paradigm that transcends both, preserving their strengths while allowing for the emergence of something far greater: repersonalized care that honours both the unique individual and the larger whole.

Health 3.0 is about connections and the primacy of human relationships, but it's no longer simply paternalistic (Health 1.0) or strictly commoditized and informational (Health 2.0). It's a partnership with our patients and each other that can only emerge when clinicians are given the time, space, and tools to understand the unique hopes, dreams, and fears of the human in front of them, while also recognizing that no person exists in a vacuum -including the caregivers, who are now part of a seamless team where every member is allowed and expected to practice at the top of their license. Actual outcomes matter in Health 3.0, not click-box "quality measures" that don't actually measure quality. Clinicians are given the tools and autonomy to achieve the outcomes that matter to their patients; do the right thing, and let technology work in the background to enable and empower the relationship. This allows the emergence of real value, where cost, quality, and patient experience intersect. In

Health 3.0 we are evidence-empowered but never evidence-enslaved [6-8].

Challenges

Hospitals and practices globally face unique challenges in healthcare today. People's attitudes toward healthcare have changed, making it more difficult to reach new patients at the right stage of the decision-making process. However, the biggest issue is that healthcare organizations struggle to adapt to the changing needs of patients. Quality healthcare is one of the most important factors in how individuals perceive their quality of life. In most countries, alongside the economy, it is the major political issue. In some countries, the healthcare delivery organization is a part of the national identity. The advent of new consumer technology is introducing even more challenges, or bringing older ones to the fore. This disruptive technology promotes greater patient power. The most agile and forward-thinking health economies have the opportunity to revolutionize the way care is delivered, and in doing so, to transform their societies. As a society, we are changing rapidly, and this is apparent in the relationship between care providers and the citizen.

Patients are increasingly becoming stakeholders in their own care journeys; they demand transparency in access and information about their care and importantly, about the quality of service provided. Citizens are now demanding access on their terms. They want to schedule appointments when and where it suits them, not the provider. They want the latest drugs or clinical trials; and of course, an end to surgical waiting lists. Or they want to be given the option to 'go private' without incurring a personal cost. The Internet is changing citizen behaviour. This means the way governments interact with their citizens has to change too. Municipalities are providing more services to the citizen using technology. We will see healthcare providers do the same adopt technological solutions to streamline processes such as setting up virtual appointments with doctors or looking up lab results online. Healthcare is the last of the major supply driven industries. It will not be so for long. It will be the citizen that demands the transition to an industry that answers their needs, fears and aspirations.

Healthcare systems are under close scrutiny by society. With patients having a bigger say in what they choose and demand for, government policy is impacted and in turn, healthcare providers. Healthcare needs to become demand-driven to satisfy the needs of citizens and governments. Patients increasingly want to decide how and when to engage with their healthcare environment. Governments, health authorities and the medical profession will be challenged to provide patients with the information and services that will allow citizens to make informed choices about their healthcare. This will mean publishing data on indicators of quality (such as outcome data, readmission rates, so on) and also introducing ways for patients to book appointments at hospitals at times that suit the patient, not the provider. On one hand, if we talk about challenge, then on the other hand we have opportunities. Increased patient awareness will open the door to a lot of opportunities if explored properly.

Strategy

Strategizing-meaning designing plans and policies to achieve a particular goal related to the health of a nation are absolutely critical in the 21st century. It is not only recommended by the Member States of the World Health Organization (WHO), but is also feasible for all countries in all settings. The global health environment is becoming increasingly complex. Social, demographic and epidemiological transformations fed by globalization, urbanization and ageing populations pose challenges of a magnitude that was not anticipated three decades ago. In addition, recent global health security threats such as the Ebola virus disease or Zika virus outbreak, and the growing mismatch between the low performance of health systems and the rising expectations of societies, are increasingly becoming a cause for political concern. This often leads to countries prioritizing, or re-prioritizing, efforts towards strengthening health systems, moving towards Universal Health Coverage (UHC) and implementing the idea of health in all policies. Countries recognize that these calls for efficiently strengthening health systems and improving health security must be translated into robust, realistic, comprehensive, coherent and well-balanced health policies, strategies and plans. In the post-Millennium Development Goals (MDGs) era, they also recognize that in pluralist, mixed, public-private health systems, these policies, strategies and plans have to relate to the entire health sector and cannot be limited anymore to "command-and-control" plans for the public sector. Functional health systems that deliver high quality services to the population should be the main priority for health providers. Achieving this requires permanent, well-structured and dynamic processes, with a true consensus between the demand and supply of services, as well as between governments, services providers and the population. A solid, evidence-informed policy dialogue is the only real way to achieve this in the 21st century.

UHC will only be achieved by its target date of 2030 if consistent and comprehensive health systems are developed, ones which are able to deliver on health outcomes and the well-being of the populations they serve. In particular, strong health systems are essential to ensure both individual and global public health security. As sharply illustrated during recent health emergencies in West Africa, or natural disasters in Nepal and the Philippines, health systems must also be prepared to guarantee the health security of the population and the resilience of societies. Health System Strengthening (HSS) efforts thus must be scaled up immediately. HSS is the process of identifying and implementing the changes in policy and practice in a country's health system (institutions, people and actions), so that the country can respond better to its health and health system challenges. HSS implies mobilizing or better prioritizing the allocation of financial resources for health, as well as building the capacities of health systems in a variety of institutional, economic, fiscal, and political contexts. Realistically, strategizing for health needs to build on solid financial evidence and a stable financial perspective. Linked to the evolution of democratic and human right values in national debates, and supported by more rapid, real time communication offered by the media in the age of the internet, governance has evolved towards a whole-of-

government and a whole-of-society approach: improving health and well- being is no longer the role of the public health sector only, and no longer only under the purview of the Ministry of Health (MoH). In other words, all sectors are part of the UHC road to success, and all stake-holders, beneficiaries, providers and the state must be involved in its design, implementation and follow-up [9]. By thus taking on an increased role in defining the "what" and the "how", health actors accept increased responsibility and accountability for delivering results on agreed targets. Policy dialogue can be defined as the "set of formal and informal exchanges aimed at facilitating policy change, influencing policy design and fostering further processes for decision-making where stakeholders of the different health system levels participate and contribute". It is an iterative inclusive process connecting the technical to the political, addressing the aspirations of the people, involving multiple stake- holders aimed at questioning and changing formal or informal policy, strategy and plans or addressing specific health issues to have maximum (public) health impact through a face-to- face and interactive discourse. In the health sector, the entry points for policy dialogue can be very diverse. The entry point may be an issue that has arisen in the course of a policy process that provokes dialogue, often (but not always) due to the sensitivity or the wide-reaching consequences of the policy. It can be the emerging need for reforms, national or sub-national political debates, technical challenges, or even operational problems related to health systems or disease control activities. Examples of such entry points are health system reform, fiscal policy, health financing strategies, coordination of stakeholders within and outside of the health sector, health accounts, and human resources for health, service delivery models, and drug pricing strategy, among many others. Ideally, a robust policy dialogue leads to key policy decisions with the buy-in and ownership of a wide range of stake-holders-this is crucial because policy implementation is directly dependent on buy-in from at least those stake- holders who are involved in implementation. Stakeholder ownership is invaluable and is, among other things, a consequence of having a voice in the policy process. It includes any communication (informal consultations, electronic correspondence, corridor meetings, among others) or contact between people who are ultimately contributing in some way, shape, or form to a process which culminates in a policy decision. Policy dialogue provides a means to enhance mutual understanding of problems and to expand trust between partners by providing a platform to clarify expectations and agree on commitments. Policy dialogue also offers a way to increase accountability, more effectively implement policies, and more rapidly respond to barriers or challenges that are ideally addressed in a collective and collaborative manner. Ensuring continued participation of all the actors necessitates innovation to allow dialogue outside the formal frameworks and spaces that constitute formal dialogue processes.

Conclusion

Fragile contexts present policy-makers and planners with complex and diverse challenges requiring innovative, flexible and incremental approaches. Many of the issues discussed are not exclusively relevant to fragile environments, but apply equally well to more stable health systems weakened by underfunding and poor management. However, the need for formulating and implementing realistic, feasible policies and strategies is higher where the duration and intensity of the crisis have damaged the health system and eroded the legitimacy and capacity of the government to a much larger extent. Addressing such gaps is arduous, and cannot be achieved through conventional approaches. A sound analysis of the context, focused on the determinants of the crisis, its historical evolution, the constraints posed and the opportunities offered, should be at the basis of any engagement in dysfunctional contexts. An investment in intelligence, related to both context and health care, must be associated with profound changes in the way decisions are taken. Moving closer to the service delivery point is a necessary step towards informed choices. Conceptual distinctions, such as the role of state vs non-state actors in health systems and service delivery, humanitarian vs development aid, formal vs informal policy processes, public vs private sector are not useful in distressed contexts. Traditional conceptual distinctions should be disregarded where the multiplicity of actors, the weakness of the government, the presence of different settings in the same country, the coexistence of humanitarian and development needs, the interplay of factors, and the emerging local strategies blur traditional dichotomies. Where uncertainty is pervasive, risks of mistakes and wasted resources can be reduced, but not eliminated. Shorter planning horizons, more modest goals, and stronger monitoring permit readjusting and adapting strategies and plans to unanticipated events, constraints and errors. The formulation of top- down, countrywide strategies is ineffective in situations of central government weakness, fragmentation of health system and diversity of situations. The alternative line of conduct is shifting the focus to the local level; supporting and documenting promising approaches that can be transferred to other areas of the country; and addressing concrete problems. Strategy development and planning are inherently political processes, even more in turbulent, politicized contexts; negotiation with the different key players is crucial. Trade-offs need to be made, to reduce the risk of resistance when policies and strategies will be implemented. Blueprint approaches and policy transfers from other contexts have proved ineffective time and again. No prescriptive guidelines can be issued for fragile contexts, as Zoellick claims: The worst thing the development community could do is develop a step-by-step hand book for dealing with fragile states".

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