



Health Care Foresight

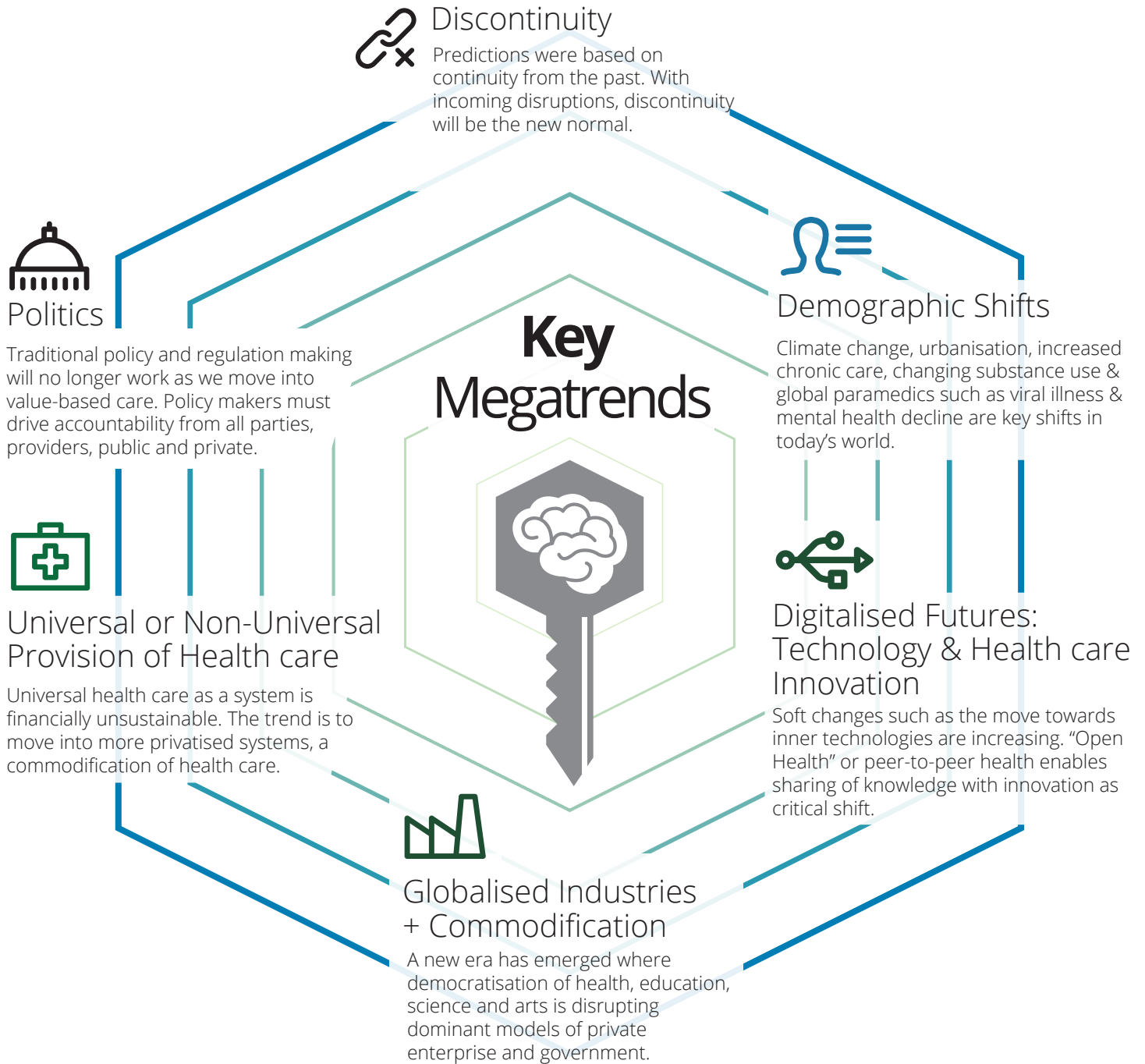
Identifying megatrends

Futures insights by Deloitte in collaboration with Professor Sohail Inayatullah and Dr Luke van der Laan

Introduction

Health care futures are typified by a convergence of drivers or megatrends that are rapidly shaping health care futures. Megatrends are defined as the great forces in human and technology development that affect the future in all areas of human activity, in a horizon of ten to fifteen years¹. We should also recognise that none of these drivers and megatrends in and of themselves will shape a foreseeable future. Rather, it is suggested that a convergence of drivers, needs and wants both in and outside of health care will result in health care futures that are discontinuous with current trajectories. There is a significant increase in the scope of possibilities for health care futures – health care provision is no longer linear and continuous, predictable or immune from disruptive change.

1. Naisbitt, J. and Aburdene, P., 1991. Megatrends 2000—Ten Directions for the 1990s. Megatrends 2000: Ten Directions for the 1990s.



Continuity / Discontinuity

For a desirable future to be achieved in health and well-being, possible futures need to be imagined. Probabilities are easy to identify as they are largely the product of the extension of the present and patterns of the past – past data. They are a continuation of current phenomena whereas discontinuous phenomena have no pattern in the past and are much harder to imagine. If flux and rapid change suggest that discontinuous change is likely, then the future is currently not in the realm of probability and needs to be created. Miller² echoes this logic and illustrates that discontinuity differs in nature. Some hold great opportunity, some are incremental, some pose great threats and some are unknowable.

It is the lack of knowing or having evidence that is the source of inaction in policy and decision-making. Information overload and the dependence on continuity paralyse efforts toward taking proactive action³. Almost without exception, the lack of an evidence-based case in modern decision-making inevitably leads to an instant dismissal of proposed change and action. Therein lies the paradox of the future as outlined by Deloitte, where decision makers support investments and policies based on continuous, linear patterns of change while recognising that change is likely to be discontinuous. Successful companies often fail to develop new disruptive technologies due to the dilemma of meeting the current needs of its consumers and their future demands⁴.

The business or evidence-based cases demanded by decision makers cannot be projected as no previous pattern (or evidence) of the change exists. Health care change is not immune. Indeed it is highly likely that a convergence of trends will create discontinuous and abrupt changes in health care systems, no matter how advanced or rudimentary. The response, due to the paradox, is likely to be reactive and costly.

The continuity and discontinuity of phenomena in health care play a significant role in determining futures. This is achieved through human sensing and imagination or said differently the human capability to anticipate what does not exist yet. Unfortunately, recent research illustrates that the systems and processes within which such sensing should take place, empirically suppress the ideation of new solutions⁵. Financial austerity also kills innovation and the ability to anticipate risk⁶. To a large extent, health care futures are highly dependent on government policies and regulations. Unfortunately the government processes and systems that develop policies are typified by financial austerity and being in systems that avoid political risk. The likelihood of re-imagined health and well-being policy and futures is not optimistic.

2. Miller, R (2015) Learning, the Future, and Complexity. An Essay on the Emergence of Futures Literacy *European Journal of Education*, Vol. 50, No. 4,

3. Gelatt, H.B., 1993. Future sense: Creating the future. *The Futurist*, 27(5), p.9.

4. Thrasyvoulou, X. (n.d.). Understanding the Innovator's Dilemma. Retrieved from <http://www.wired.com/insights/2014/12/understanding-the-innovators-dilemma/>

5. Van der Laan, L. and Yap, J., 2015. Foresight & Strategy in the Asia Pacific Region: Practice and Theory to Build Enterprises of the Future. Springer.; König, Michael, Sedlatschek, Elisabeth, Wallner, Natalie. 2014. Strategic Foresight. *Oder: Hic sunt dracones! CFO aktuell – Zeitschrift für Finance & Controlling* (4): 139-141

6. Johnson, M. W., Christensen, C. M., & Kagermann, H. (2008). Reinventing your business model. *Harvard business review*, 86(12), 57-68.

Policy

Policies that shape health care are typically conservative especially in terms of traditional models of funding, primary health care provision and clinical practice. Generally, national policies related to health care follow the same patterns and principles globally and according to the relative wealth of nations. They look much alike. Indeed health care has been described as predominantly reactive and provider oriented⁷. Providers, governments, large corporations, insurance companies, hospitals and the clinical caregivers themselves all seem constrained by the dogma originating from attitudes and practices from the last century. Yet, the nature of health care is shifting dramatically away from these patterns of the past and there is considerable pressure from societies worldwide for providers, public and private, to become more accountable, relevant and responsive while providing greater and more equitable access to health care and well-being.

The response to this pressure varies but is generally subjected to neoliberal measures of costing, large corporate interests, traditional clinical practice models and the linear development of national policy. Measures of health care performance include an index measuring access to health care, health care integration and adoption of new technologies and innovations⁸. It is argued that while these measures are helpful, they still reflect a linear incremental approach to health care. What is missing from policy development is a bottom-up systemic re-design. A systematic approach

including parts of the systems traditionally located outside of the system is crucial in understanding futures. Bearing in mind that collaborative co-creation of value is the currency of the 21st century where systems co-create new frameworks and value, the traditional 'closed system' of health is perilously close to becoming less relevant to the needs of society. The future of health care depends on a different way of thinking to chart the future than the thinking that has caused the problem, to coin Einstein's famous outlook on wicked problems. Yet despite

this realisation, we still have health care systems and governments paralysed by old ways of thinking and are seemingly unable to renew themselves. To create such a systemic shift, four levels of change are required (e.g. required, as shown below.)

These four layers represent different types of reality. Many attempts at change only focus on systemic shifts without transforming the worldview, culture and core narratives that sustain the system, and thus, the problems paradoxically strengthen. Stories are, in effect, bottom-up.



A shift from measuring illness to measuring prevention and wellness



A systemic organisation shift in terms of nature of health care, e.g. shift from hospital to home care



A shift in the deep culture of the worldview of the health system



A shift in the deep metaphor or story of health care, e.g. from 'doctors know best' to 'I am the expert of my body'⁹

7. http://www.iftf.org/fileadmin/user_upload/downloads/hh/Report_U.S.Analysis_of_FutureHealthIndex.pdf

8. http://www.iftf.org/fileadmin/user_upload/downloads/hh/Health_Horizons_Research_Agenda_2016_Global_Health_Economy.pdf

9. <http://www.altfutures.org/projects/primary-care-2025/>. Accessed 2 July 2016.

For example, when asked about the futures for hospitals, a workshop with Aboriginal peoples in Australia suggested that current hospital hours are focused on the Western model. That is, they are based on the individual. Space is not designed for communities and thus, only a few visitors are allowed. This may make sense for those with small Western networks of friends but for Aboriginal communities with far broader network ties, hospital visiting requires space for many to visit. This requires hospital redesign with certain flexibility. Given the correlation between health, well-being and strong friendships¹⁰, rethinking the hospital is crucial.

However, the strength of future approaches is exploring alternative solutions by questioning assumptions, for example, with new technologies such as apps, wearables, and smart floors that enable one to heal from hospital homes and health hub. The necessity of hospitalisation can then be questioned. Pragmatically, it is recognised that only when these new models are accepted in the mainstream and enabled by policy, will necessary transformations take place. However, it is more likely that policy will not lead practice, but rather that innovations will disrupt current systems.

Universal or non-universal provision of primary health care

Universal health coverage (UHC) is still the most prominent health care aspiration across nations despite its variable quality of service when implemented. Universal health coverage is described by the World Health Organisation (WHO) as a system providing health care to citizens without incurring financial hardship. Often the type of services are defined as those of Primary Health Care (PHC). The funding models vary from taxation-based high government involvement to privately funded compulsory insurance health services. Even though the models vary, they are all impacted by governmental policies and regulations aimed at increasing access to health care at minimum standards. Increasingly, these heavily-regulated systems are being labelled by governments as unsustainable.

Despite the higher cost per capita of non-universal health care systems as evidenced by the OECD, governments are suggesting moving toward more privatised systems. In developing nations where universal health coverage is deemed unaffordable, the push by private interests is most apparent. That said, the example of the United States which also illustrated higher growth rates in health spending evidences that non-universal health care systems lead to a) higher costs per capita, b) high growth of costs, c) only marginally less government spending as a percentage of GDP, and most disconcertingly d) lower access and equity to health care provision¹¹. In addition to this evidence,

the barriers to coordination of health care systems (bureaucracy, insurance companies, cost, government regulation) all in some way corroborate a conclusion that moving away from a universal health care system by governments points to an irreversible mistake, spiralling health costs and inequality. Given that health equity is positively correlated with higher productivity¹², this is not just an ethical issue but an economic one.

More so than economic considerations, the principal enabler of effective and efficient health care delivery is good governance. The notion that only commodified goods and services can be delivered efficiently and effectively is an economics myth. Sound governance in the public sector is possible. Matters of health, education and other universal rights, privatisation and the arguments that promote it are misplaced. That said, hybrid models of joint public / private service delivery have been found to provide meaningful solutions in the provision of primary health services.

10. http://www.health.harvard.edu/newsletter_article/the-health-benefits-of-strong-relationships. Accessed 1 July 2016.

11. OECD Health Statistics 2015

12. http://www.health-inequalities.eu/HEALTHY/EN/about_hi/marmot_reviews/. Accessed 1 July 2016.

The ethics underpinning the provision of a universal health care system is compelling and many argue, futures-smart.

Not only is it an imperative that governments need to 'get it right' they have to 'do the right thing'. An increasingly seductive neoliberal assumption is that the provision of basic health services can only be delivered effectively and efficiently if commodified and privatised. This increasing trend toward the commodification of health care across all aspects of provision, innovation, education and technological enablement is of concern as it suggests that the universal provision of health care is threatened by proprietary interests and would result in declining access and equity.

The link between economic inequality and health has already been evidenced by the US Bureau of Economic Research¹³ and further underpins the ethical argument that moving away from universal health care would result in further inequality and discrimination - a world where the wealthy are healthy. Further inequality is simply untenable in the long term. It would have a destabilising effect globally and numerous local second order impacts which would disrupt the income and social security of wealth creation. Thus, it is in the long run interest of the wealthy to support or even subsidise global health equity.

Globalised industries & Commodification

Global industries have traditionally illustrated the highest rate of investment in research and development (R&D) as a business imperative. The impact of globalisation in this regard has had a significant impact on how health care has developed in the last fifty years. Their growth and development into highly competitive, influential and sophisticated conglomerates are clearly evidenced. In many respect, large pharmaceutical, technological, private health care and insurance industries have had unprecedented influence over the sovereign powers of national governments, often influencing their models of PHC and UHC. The effects have largely been both good for consumers and the profitability of the enterprise. However, the influence of global corporates in funding lobbying groups and even being associated with unethical practices in the development of policy has not been isolated. The effects on health care systems therefore have been proprietary and based on the commodification of health.

However, for some insurers, moving to the prevention paradigm is not only good for society, it can be good for the bottom-line. For example, in one future scenario, the global health insurer moves its strategy from a reactive view - pay for illness - to a proactive view - help the citizen imagine how their life could be better if they were healthier. This meant changing their narrative about consumers from "we cover your health insurance," to "we create the healthier you."

13. Deaton, A (2003) Health, Income, and Inequality, NBER <http://www.nber.org/reporter/spring03/health.html>

While some initial costs are higher - for example providing free dieticians in new campaigns and lobbying government to change legislation favouring citizens to take charge of their health - over the long run, their costs will drop as the insurance costs associated with illness are reduced. Thus, it is to the benefit of all - the insurer, the consumer, the government - to "place a fence at the top of the hill" rather than the "ambulance at the bottom."

However, while there are examples of individual corporate foresight challenging traditional views, overall health care commodification is part of the long-term process of economic rationalisation that had its greatest impetus in the late 19th and most of the 20th century. As numerous commentators have suggested, a new era has emerged where the democratisation of health, education, science, arts and even politics is relentlessly disrupting these dominant models of private enterprise and government. As such, to incrementally build on the logic of the last century would make current wicked problems in health even more wicked.

Knowledge creation in health cannot be contained. It is driven by need and the efforts of an increasingly resourceful science and technology global talent. Despite the exponentially increased level of scientific production and cross-border collaboration, patenting remains dominated by a minority of countries. This is unlikely to continue as health research and innovation continue to expand beyond traditional proprietary

channels. In order to harness the potential of this increased productivity in the sciences and technology, the efforts of governments and commerce must combine to achieve what has been evidenced as an increase in investment¹⁴.

There are reasons why the Global Financial Crisis (GFC) and many more examples of disruption have been discontinuous and where economists have failed to identify the risks, they were able to identify and develop individual risk assessments but not risk to the overall system. Of course, at a deeper level, the same economic rationale no longer applies. This is an important consideration in the remodelling. Along with commodification¹⁵, the GFC resulted from other macro waves of change - the shift in the world economy to East Asia, with greater rates of saving; disintermediation leading to the decline of the middle man; and a focus on increasing debt instead of looking for systemic solutions to inequity. Similar to the current health care industry, the disruptions of health care are largely resulted from macro changes such as the shift to the health care wellness, the emergence of Asean Economic Community (AEC), and the shift of power in the health care stakeholders.

Digitalised futures: technology and health care innovation

There has been an exponential increase in health care innovations. This is generally good news for society as the majority of innovations are designed to enhance quality of life, fight disease and promote well-being. The more concerning view is that most health care innovations emerge out of privately funded research and development and as such, are subjected to expected financial returns. In most cases, the intellectual property (IP) is safeguarded by legislations prescribing IP rights for limited periods. Until these periods are exhausted, the health care innovations are usually expensive and not included in primary health care treatments. Yet, "breaking patents" in the name of providing access to new drugs affordably negates the effort and investment in R&D.

The UNESCO Global Science report¹⁶ confirms that there is a strong trend toward increased global capacity in scientific research and several middle-income economies have seen significant increases in scientific capabilities and innovation in health. As an example, Brazil, China, India, Iran and Malaysia are increasingly recognised as hubs for nanotechnology. In addition to the localisation of expertise, these are often typified by open international knowledge sharing and collaboration through open educational channels. The expanding global co-creation of value, innovation and new technologies increasingly know no borders and challenge traditional IP parameters.

14. UNESCO Science report: toward 2030 http://en.unesco.org/unesco_science_report

15. p.450 in Bakker, K., 2007. The "commons" versus the "commodity": Alter-globalization, anti-privatization and the human right to water in the global south. *Antipode*, 39(3), pp.430-455.

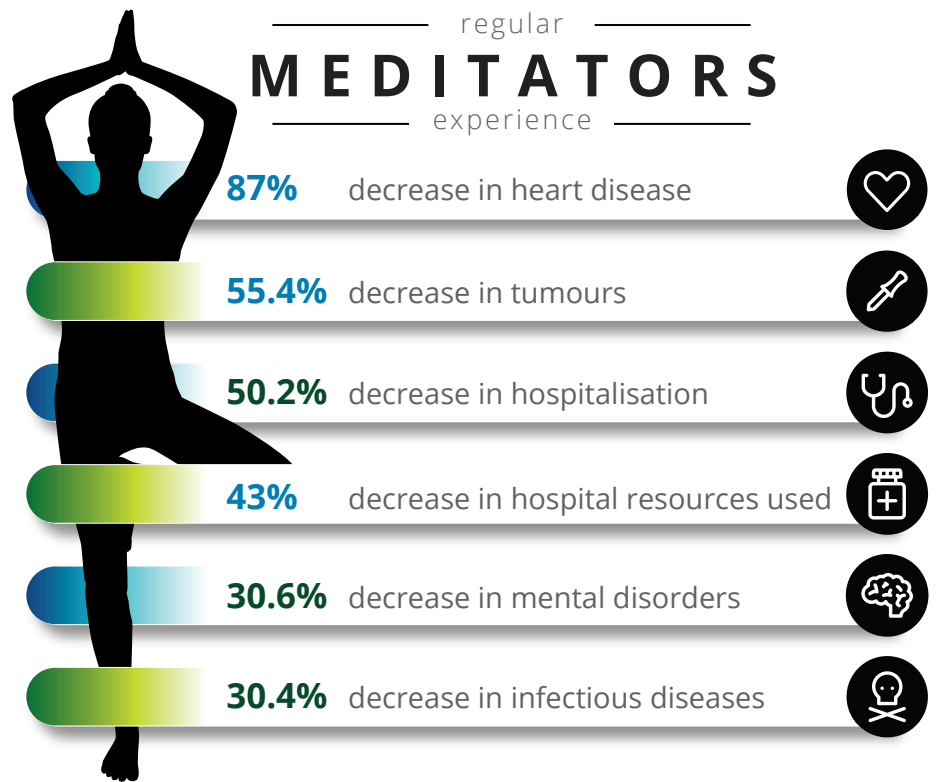
16. Neupane, B. (2015). A more developmental approach to science. UNESCO science report: towards 2030, 6.

Trends in technological innovations, the internet of things, blockchain futures, hardware innovations, neurotechnologies, nanotechnology, nanomaterials, food printing, synthetic biology, additive manufacturing and a host of other technology-related developments are increasingly capturing most observers' attention¹⁷. There is a rapidly growing number of health care innovations on the horizon that both excite and concern policy-makers. Chief amongst these are genome editing and transhuman enhancements and the ethical perspectives adopted in proceeding with research and development.

As important as hard technological innovations and health care 2.0 are, soft changes such as the move toward inner technologies which enhance well-being and increase resource efficiency are exponentially increasing. Yoga and meditation are the most prominent of these (as shown in the infographic on the right)¹⁸⁻²⁰.

Open health, much like the surge of open education, open science, crowdfunding and open innovation, is of significant social value. Promoting models that encourage open health systems, peer-to-peer health, community-based health and the sharing of knowledge and innovation for the public good is a critical shift in relieving the pressure on health care provision. It cannot exist in isolation; much like open education cannot exist outside the formal educational structures of society.

But, it has the potential to transform the model of health care provision and strongly influence future health care systems while relieving governments of some financial pressures or allowing them to re-allocate funding to emerging technologies.



17. OECD Horizon scan of megatrends and technology

<http://ufm.dk/en/publications/2016/files/an-oecd-horizon-scan-of-megatrends-and-technology-trends-in-the-context-of-future-research-policy.pdf>

18. Lazar, S.W. (2005) Meditation experience is associated with increased cortical thickness, *Neuroreport* 16 (17), 1897.

19. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0140212>. Accessed 1 July 2016.

20. http://www.huffingtonpost.com/entry/yoga-meditation-health-care-costs-study_us_562fa500e4b06317990f8754?ncid=fbklnkushpimg00000063. Accessed 1 July 2016.

Demographic shifts

Unprecedented demographic shifts related to health and well-being are taking place globally. These include the much researched and increasingly understood notion and impact of population ageing. Less understood, and even sometimes overlooked, are the demographic shifts due to climate change, urbanisation, human mobility, migration, increased chronic care, changing substance use and global pandemics such as viral illnesses and mental health decline.

Health futures are largely influenced by population demands and as such demographics are influential determinants of model redesign. If a rethinking of health care and well-being is required 'from the bottom-up', it would suggest closely monitoring, authentically engaging and collaborating with stakeholders in each demographic group. Alternatives to traditional care models are required, such as chronic disease management through community-based collaborative care models. Genome technology will also strongly influence population-based approaches to care delivery.

It is estimated that 66% of the world's population will live in cities by 2025. These cities will range on the spectrum of economic wealth from being prosperous to being very poor. This presents a range of different health issues and provision models. Irrespective of economic status, these highly urbanised, information-rich residents will illustrate a growth of high consumer expectations. There will be a

likely increase in demands for accessible services and what consumers are prepared to pay for. If government and city authorities fail to provide accessible health services, it is likely that the majority of citizens will experience repeated health pandemics in addition to increased untreated chronic health issues. It is likely that this will not only impact negatively on the economy, but also lead to civil unrest.

Cities can lead in health as well. For example, it has been argued following the case below²¹:

With increasing scientific evidence that city design directly impacts our life changes and our long term health, city planners are redesigning for health. City design improvements include creating greener and more bio-diverse spaces to enhance psychological health – for instance, bringing in light rail to reduce congestion (time spent in traffic directly relates to heart disease), changing zoning to reduce pollution (in polluted areas fetus size drops) and rethinking population density zoning. Enhancing green spaces can also reduce drought as there is considerable evidence that the suburban/strip mall model of development blocks billions of gallons of rainwater from seeping through the soil to replenish ground water. Rethinking city design can greatly reduce costs over the long term. Building design is part of this revolution, creating cradle to cradle buildings with zero emissions where there is no-away to throw things. Energy self-reliant buildings are on the cards. Green buildings, while costing more initially, enhance productivity. Productivity gains are estimated at 16% and USD160 billion.



21. Inayatullah, S. (2009). Creating the prevention prama society. The Health Advocate. Issue 2, December, 24–27

In contrast to these potentially positive trends, the convergence of demographic shifts may not be as closely anticipated and therefore does not form part of the future model design yet. As urbanisation introduces greater stress and urban isolation, there are grave concerns regarding the exponential increase in mental health issues. The World Health Organisation estimates that by the year 2020²², if current trends for demographic and epidemiological transition continue, the burden of depression will increase to 5.7% of the total burden of disease, becoming the second leading cause of disability-adjusted life year (DALYs) lost. Worldwide, it will be second only to ischaemic heart disease for DALYs lost for both sexes. In the developed regions, depression will then be the highest ranking cause of burden of disease. This has physiological impacts and when converged with substance abuse and urbanisation, a whole new future context is triggered.

Compounding these examples are the megatrends of growing inequality in developed and developing nations. In the OECD, poverty rates increased up until 2010. Increased inequality will be experienced by the populations in 86% of developing nations. Many of these developing nations are regarded as 'fragile states' and the threat of geopolitical instability and security risks in countries spreading outside countries is high²³.

Global inequality in health continues to broaden. While significant progress has been made to economically improve middle income populations in many developing countries, the majority of those at the lowest income levels seemingly remain in poverty. This inequality is not only economic, but extends to the poorest being increasingly vulnerable to disease. The increase of pandemics that have not been anticipated and are under-researched is likely to have far greater impacts on the health of the poor but also on society generally.

Communicable diseases, neurological diseases and antibacterial resistance all pose a risk to the poor but increasingly affect the whole global community. Mental health and neurological diseases have largely been treated outside of the mostly physical pathologies of primary health care. Yet with dramatically increased technological enablement of human productivity, faster pace of life, information ubiquity and increased levels of stress, the incidence of mental health issues has increased into what may be, a much larger pandemic than anticipated. This may be ascribed in part by a much slower physiological adaptation than the pace at which people have been enabled to function. While much is being researched and done about the shift toward chronic illnesses, mental health epidemics and associated social and economic consequences remain underestimated.

22. <http://www.who.int/whr/2001/chapter2/en/index4.html>. Accessed 1 July 2016.

23. OECD Horizon scan of megatrends and technology

<http://ufm.dk/en/publications/2016/files/an-oecd-horizon-scan-of-megatrends-and-technology-trends-in-the-context-of-future-research-policy.pdf>

Health Care Foresight: What Works?

Are there possibilities of change, a shift to alternative futures?

“Prevention as a new health worldview stems partly from a sage advice of the past – an apple a day keeps the doctor away, wash your hands, and look both ways before crossing the street – and from public health pressures that understand that reckless individual behavior leads to overall cost increases for all.”²⁴

Firstly, what is needed is a move toward a prevention worldview. This not only frees up capital for health equity policies but enhances well-being.

Secondly, it is not just prevention but empowerment. This is manifested generally at the systemic level through peer-to-peer health and the new wearables that allow direct personalised health information - the quantitative self. This is moving from a narrative of the "doctor will see you now" to "take charge of your health." There are certainly risks as with cyberchondria, but the notion is that with flattening of expertise, the user can access different types of information (expert, medical; peer-to-peer crowdsourced with a trip advisor of evaluation; personal and community anecdotal) with the medical system being the centre helping patients discover alternatives.

In Australia, an example of a national policy of empowerment is the new National Disability Insurance Scheme. In this new model, the person with disability is at the centre of the scheme. He or she decides what care is funded. This may consolidate the market for carers, putting small providers at risk. If the metaphor was a food court, it could lead to larger restaurants taking over and forcing smaller providers out of business. However, a more apt analogy is "room service" where new app based - artificial intelligence (AI) - technologies allow the person with disability to order what he or she wants when he or she wants it. This is an example of a bold

In Australia

17000 Premature deaths prevented with anti-smoking public education and legislation

USD176m Invested in tobacco control delivered **USD8.6 billion in economic returns**

In India

27% Increase in deaths from chronic disease from 40% in 1990 to 67% in 2020.

13% Growth in cardiac-related spending expected annually

In USA

44m People expected to have diabetes by 2034 if current trends continue

USD336b In annual cost for health care triple the current annual cost of USD113b

24. Inayatullah, S. (2009). Creating the prevention prama society. The Health Advocate. Issue 2, December, 24–27

health policy initiative. Both sides of politics have approved it for different reasons. Conservatives prefer this market based model in that as efficiencies in the health care industry are likely to result. Progressives prefer this model as it empowers the person. It will also encourage innovation as providers will have to find more effective - person and cost-centred - ways to meet the needs of the client.

Thirdly, foresight work is not just about empowering patients but other actors in the health system, asking them their alternative futures. In workshops with general practitioners, for example, four futures emerged. The first is "the Star Trek Health" model where new technologies allowed easy and early diagnosis. Many general practitioners would disappear as AI applications would take over. The second was the "Return to Values" scenario. In this future, doctors would focus on compassion and connection, using placebo to create better health outcomes. Patients come to them not for informational purposes but for communicative purposes. In the third scenario, "Corporates Take Over," the complexity of health changes are too much for general practitioners. Running their own "corner" health practice is too cumbersome so they sell and work for large health providers. This relieves administrative pressure but reduces

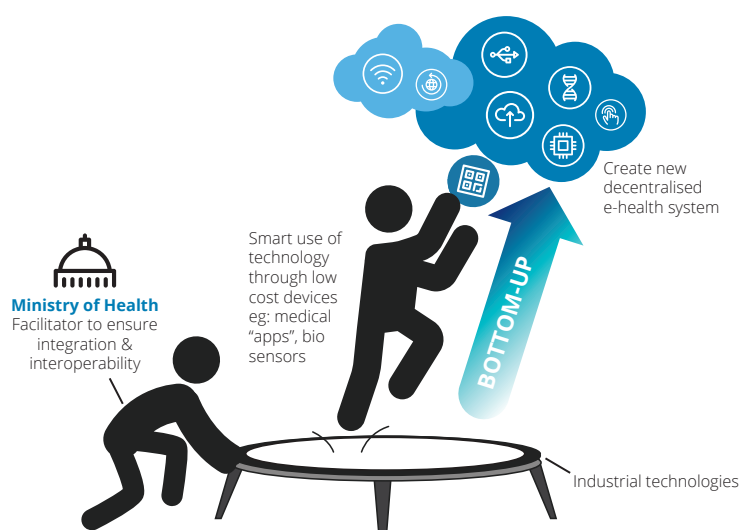
autonomy and the likelihood to connect with others. In the final scenario, "Multi-door Health Centres" emerge, where the general practitioners are the gatekeepers. He or she would offer different pathways - genomics or other advanced treatments or the door of meditation and diet change; or the door of moving to cities that were less polluted. The doctor in this future becomes the trusted coach and advisor.

Future Scenarios in Less-Developed Countries

Foresight is not just for wealthy areas but can be used successfully in less-developed areas as well - what has been called 'pro-poor foresight'. In Bangladesh, Inayatullah's work with the Ministry of e-Health led to the four futures²⁵. Participants in a three day workshop included public health professionals, hospital directors, surgeons, local health application developers and others. We reproduced these scenarios to illustrate how futures will work in poorer nations (refer to Table 1). Indeed, studies have emphasized the innate nature of foresight, its accessibility to all and relatively minimal cost to develop or institutionalise²⁶ foresight in organisations, government departments and non-governmental institutions.

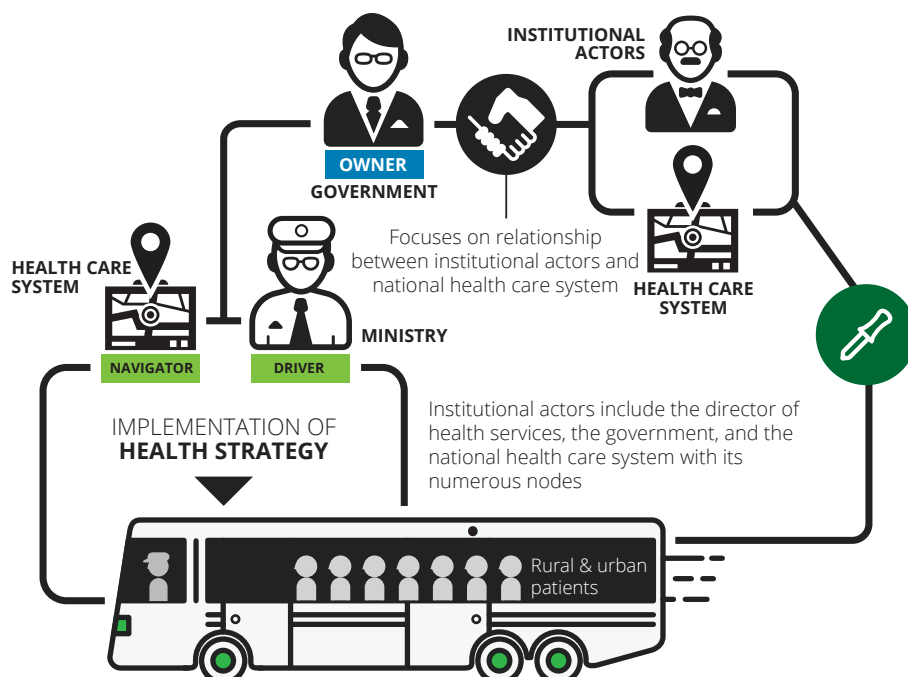
Leap-Frog 2025

This scenario depicts an e-health infrastructure developed from the bottom up with the Ministry of Health and smart technology, thereby leapfrogging the traditional (modern-western) health system.



E-Health Car/Bus Scenario

This scenario focuses on the relationships between the stakeholders and the implementation of health care. The owner is the government, the navigator is the health care system and the driver is the Ministry.

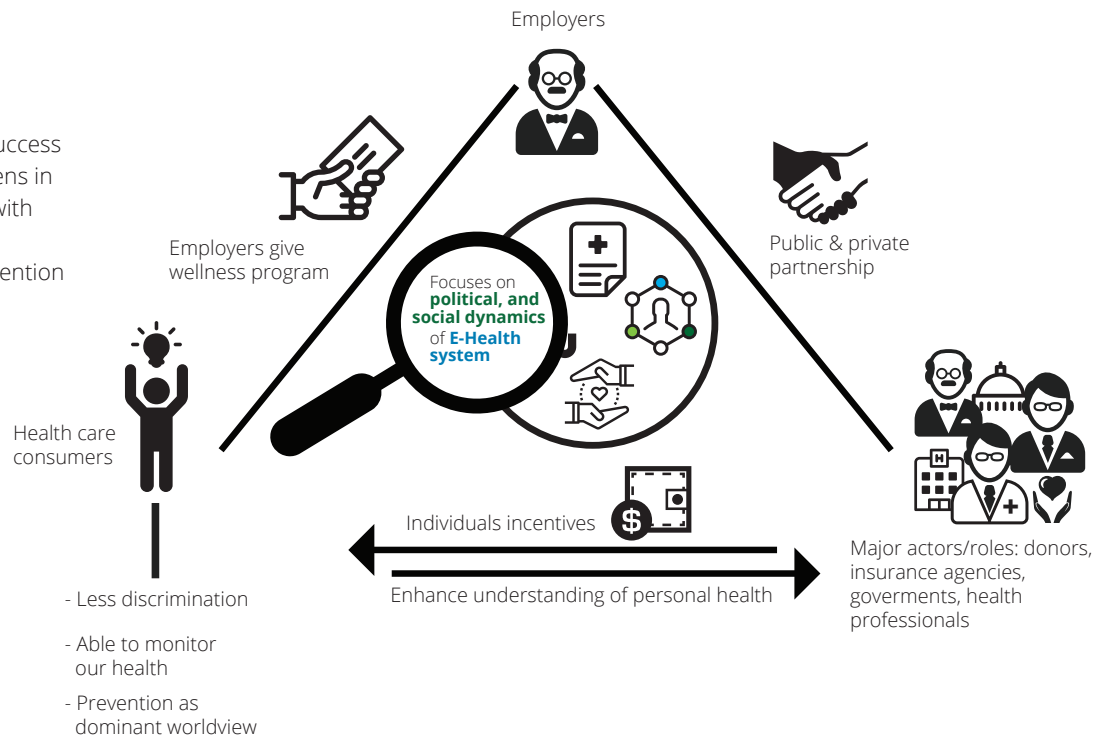


25. Sheraz, U., Inayatullah, S., Shah, A. (2013). Ehealth futures in Bangladesh. Foresight. Vol. 15, No. 3, 177-189.

26. Van der Laan, L. and Yap, J., 2015. Foresight & Strategy in the Asia Pacific Region: Practice and Theory to Build Enterprises of the Future. Springer.

E-Health Party

This scenario highlights the dynamics for ensuring the success of the e-health system. Citizens in this future are empowered with financial sustainability and information, promoting prevention as a worldview.



Health Cloud Scenario

This scenario envisions the guiding metaphor to be a 'cloud', referring to public health information available to all. It also connects citizens in a health cloud network that monitors their life stages.

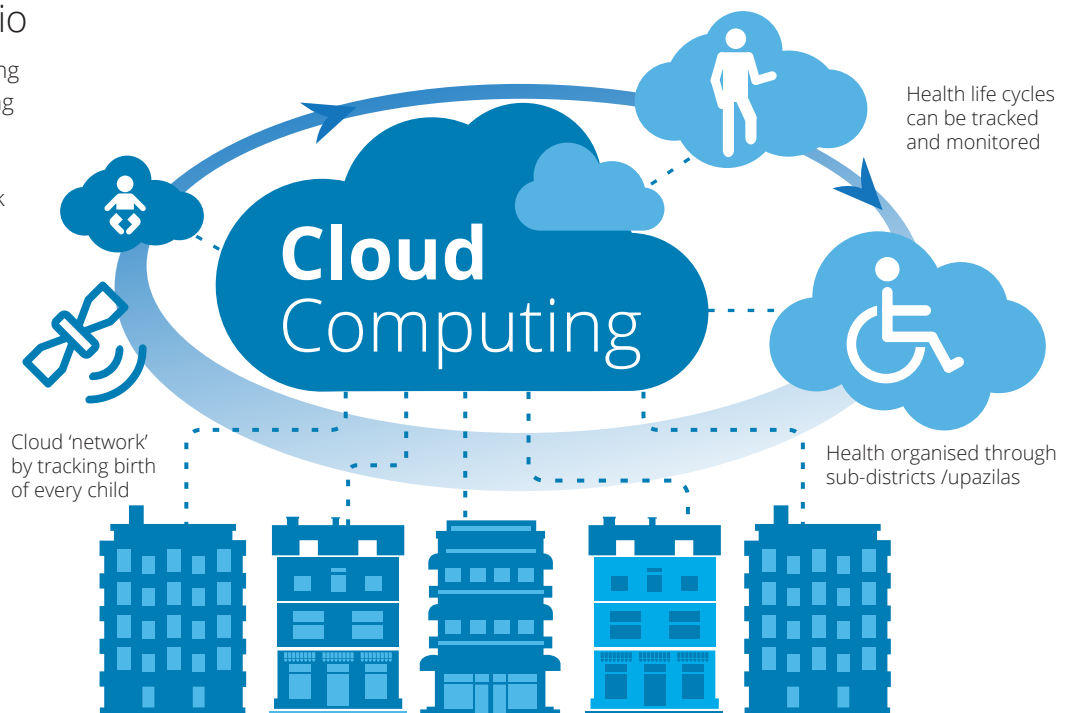


Table 1: E-Health Scenario 2025 Summary

E-Health Scenarios 2025	Leap frog	E-health car	Health cloud	E-health political party
Litany or headline	Smart use of technology Usage of low-cost diagnostic devices	Cost-effective digitalisation of health sector for enhanced health service customisation	All births and life cycles are registered and tracked	Paying people to stay healthy through public disbursements of health expense funds
System	Integrated and interoperable universal e-health system	E-health records system interoperable everywhere achieving total data capture	Shared public utility cloud	Data collection and data management for public disbursement
Main stakeholders	Public health sector, private firms, NGOs, donors, community citizen associations, rural and urban citizens	Government, line ministry, health care system and concerned citizenry	Government, information, communication, technology (ICT) companies, digital natives, public health NGOs, international agencies and donors	Government, insurance agencies, donors, patients and health professionals
Dominant worldview/deep structure	Decentralised systemic governance promoting participation and collective ownership	Individual, decentralised and personalised health care	Universal right to health and information	Welfare-based model of public funds transfer for inducing health consciousness in people
Metaphor	Fly-over	E-health car/bus, driving to the new future	Connectivity cloud	Raise the price of vice, lower the cost of virtue

These scenarios have a number of purposes. First, they create new conversations about what is possible in the system. Second, even as they open up possibilities, they anchor the system so that it is not overwhelmed and clear trajectories are possible. They also help the ministries make financial decisions as to what and where to invest. Finally, they help transform the system, moving from the health politics of what is known to what can be created.

Finally, in health settings the challenge is between horizons. For example, horizon one is the current system which is being challenged in the immediate term by cost containment and ageing which is leading to debates about the most effective societal model to deliver health outcomes, given that the current system is under stress. Horizon three is the emergent peer-to-peer, use of new wearables, the well-being revolution, with the patient at the centre. In short: the preventive worldview with the

patient at the centre. However, the challenge is horizon two – how to reconcile current needs with the emergent future. In one foresight workshop held with over fifty health directors, when asked as to their preferred future, most imagined a far more preventive model with the hospital moving to the home (or the doctor in the body via genomics and nano-health bots), essentially where the main focus was ensuring patients stayed well and when they were ill they remained in charge of their own health. The health system would be a coach, focusing on the patient. However, in an open-space session when asked to develop projects that they could work on over the next year, they selected projects in areas they were already comfortable with, they focused on the present. When they reflected on this tension between the world they want and the world they need to live in, they articulated a budget strategy wherein 80% of the budget would go toward horizon one projects

and 20% toward creating horizon three, the long-term vision. For example, new state-wide key performance indicators focused on prevention and on partnership between health sectors.

This is the core tension: the current health model is in transition. Without the act of foresight - envisioning and creating alternative futures - strategies will remain focused on what is known. Once alternative possibilities enter the current paradigm, then interventions are required to create pathways to the emergent futures. If these are not done, then patients will most likely lose out. As in times of stress, systems can easily revert back to the past, instead of a jump to the novel.

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- Research and innovation in risks pertaining to human-centred cognitive technologies;
- Collaboration with renowned academia, research centres, and medical institutions and
- Delivering insights, thought-leadership and solutions to enrich the industry knowledge base and to assess future trends

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