Dreaming the Future of Health

for the Next 100 Years

**White paper from the
Global Health Summit
Beijing China, January 26-27 2013**

"Without health, nothing is of any use, not money nor anything else" **Democritus, 5th century B.C**

Acronyms

AI	artificial intelligence
AIDS	acquired immune deficiency syndrome
CDC	Centres for Disease Control
CEO	chief executive officer
GE	General Electric
H1N1	influenza A virus subtype H1N1
ICN	International Council of Nurses
IP	intellectual property
JGSPH	James Grant School of Public Health
JLI	joint learning initiative
MOOC	massive online open courses
NCD	non communicable disease
PHC	primary health care
PUMC	Peking Union Medical College
R&D	research and development
RF	Rockefeller Foundation
SARS	severe acute respiratory syndrome
SE	socio-economic
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WEF	World Economic Forum
WHO	World Health Organisation

The word cloud shown above is generated from the text of all the plenary sessions of the Summit. The cloud gives greater prominence to words that appear more frequently. Generated by R Loewenson 2013 at http://www.wordle.net/

Contents

Opening a window to the future…

It is a warm Wednesday in January 2050 in Santiago. The newscaster is reporting the latest performance figures for the city, and Ana frowns as she hears that wellbeing and air quality have both dropped a few points. In the centenary year of the landmark Doll and Hill study on smoking and lung cancer this is not good for public relations! She makes a mental note to discuss this with the City Forum later in the day. For now she has to prepare for a visiting delegation from Tokyo, Lagos and Los Angeles who have come to finalise the protocol connecting the electronic data and remote sensing systems for maintaining population health across their megacities. Ana has kept in touch with them online in the peer to peer learning platform as they all connected years ago to the same cyber- engineer supporting their 3D vaccine printers. With Saito from Tokyo, Meng from Lagos and Raul from Los Angeles she had many long debates over the years on issues ranging from how to rebuild solidarity, to what the priorities should be for planetary health. She can't wait to see them again!

Introduction: From the last 100 years to the next

How will we enable the growth and development of healthy societies over the next 100 years?

Hookworm treatment dispensary, Tennessee, USA 1914
RF Centennial site

Actions to address hookworm by the Foundation in the early 1900s connected improved living conditions, economic productivity and health. Learning from the co-operation across government, social agencies and communities needed to prevent hookworm, a 1915 Rockefeller Foundation report by W Welch and W Rose proposed a new public health education to build the approaches and cadres needed to improve population health. Foundation activities promoting public health since 1913 now span 52 countries across 6 continents.

"…our approach has been innovative, our methods collaborative, our focus on bettering the human experience. That is what will continue to guide us in the century to come". David Rockefeller, January 2013

In 2013, as part of its Centennial, the Rockefeller Foundation is holding a series of gatherings that bring together the world's leading thinkers, innovators, entrepreneurs, and political leaders to identify, understand, and solve problems in innovative new ways.

Towards this, in January 2013, the Foundation and Peking Union Medical College (PUMC) held in Beijing China, a Global Health Summit: *Dreaming the Future of Health for the Next 100 Years*. The two hosts each brought a one hundred year track record in public health.

The Summit gathered 112 prominent leaders from government, international organizations, academia, civil society and business and from numerous disciplines to discuss the question: "How will we enable the growth and development of healthy societies over the next 100 years?"

A 100 year horizon lies beyond the boundaries of our knowledge and enters the realms of our imaginings.

"In 1913, trying to project forward to the year 2013, it was the dawn of the application of germ theory. It was the beginning of organized public health ….They would have imagined that because they understood what bacteria were, that any day now, all infectious diseases were going to be gone.. They could not have imagined …that five years later, 75 million people would die in the great influenza pandemic of 1918. So the folly of imaginings is high". Laurie Garrett, Council on Foreign Relations, USA, 2013

However, as Foundation President Judith Rodin and Minister of Health Chen Zhu, China recalled in the opening of the Summit, big dreams are at the centre of significant change, such as 20th century improvements in sanitation, or 21st century resolutions on universal coverage.

"Health is an eternal theme of humanity – and a strong, healthy and sustainable society is our common pursuit. So let us dream, but then let us return here to earth to do the work that is needed to attain health and harmony at home". Minister Chen Zhu, Minister of Health, China, 2013

This White paper is thus a provocation to dream and act! It presents the key trends, debates and ideas that were raised in and after the Summit. Through this, it envisages the multiple potential futures that may emerge from these trends, the choices that determine them, and where we could act, even now, to shape futures of sustained health.

The White paper seeks to stimulate reflection, debate and submission from a range of actors that play a role in sustained health. The paper seeks to engage young people on a future of health that they will both shape and live in. The ideas presented intend to enrich the activities and priorities of leaders and stakeholders who work for social change, especially for vulnerable people. They will also inform the Rockefeller Foundation's goals, grant-making priorities, and networks.

前人栽树,后人乘凉 *"One generation plants the trees, another enjoys the shade"* Chinese proverb

Organising the dreaming

The White paper does not make predictions or a forecast of a certain future. It rather projects different scenarios for the future. It makes explicit the critical assumptions and uncertainties we have about the future of healthy societies, and the different plausible futures they imply, as a basis for creative thinking about how to shape the future.

The White paper draws on the delegate inputs at the Summit, interviews conducted after and background materials (See References and Acknowledgements).

Forecasting vs Scenario thinking
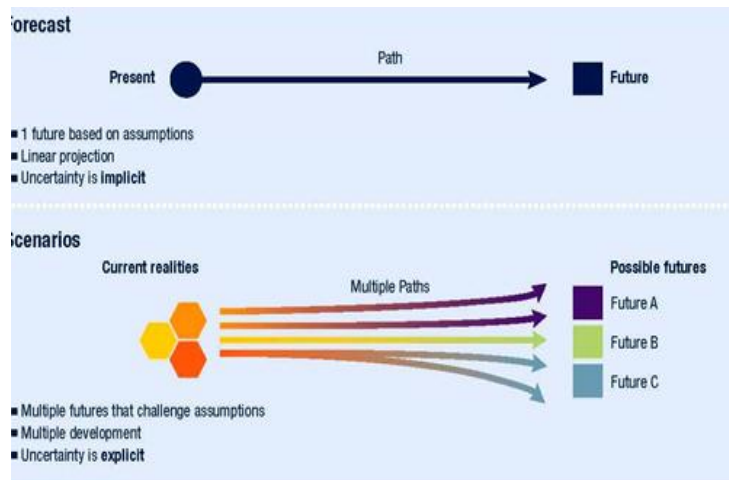
Source: with permission World Economic Forum (2008), p34

Delegates made input on the trends, actions, leadership and knowledge for a future of sustained health through a mix of plenary panels, presentations, group discussions, artist representations and video interventions. A list of the ten 'dominating' trends seen to be affecting health in the next century was 'crowd-sourced' by Rockefeller Foundation before the Summit as a trigger for discussion. Delegates identified and discussed further the trends that they felt to be most important. These included the demographic revolution; new ways of learning and social and economic convergence and science and technology. Artists representations of the group discussions were used to share the exchanges. The transcript of *all* discussions in both plenary and groups was reviewed to identify the most frequently raised trends, five for which there was greater certainty, and five that were more uncertain or debated.

While these inputs provided rich experiences and insights, there are also limitations. Scenario projections generally don't have time horizons beyond 50 years (Martens and Huynen 2003). We thus use a 50 year trajectory for the White paper, to reach a 'viewing platform' for a 100 year future.

Exploring global, long-term, and complex risks for human health is an uncertain field, with a tendency to underestimate the exponential nature of some trends (Wallace 2008). Global scenario planning is an unfamiliar and uncomfortable domain for epidemiologists and other population health scientists (Martens and Huynen 2003).

"We massively underestimate the magnitude of change that's going to hit us in the future, and we overestimate the stability of our world" Richard Horton. Lancet,2013

Just as new thinking was needed in public health a century ago, so 21st century global health calls for input from beyond public health institutions. Many disciplines exert influence on health and not all could be present at the Summit. There was limited voice of young people or civil society, despite their unique lens and the role of 'active citizenship'. Interviews and document review was thus carried out to obtain these views.

The complexity and uncertainty inherent in imagining is reflected in mixed, sometimes contradictory perceptions, sometimes reflecting the tension of pessimism of intellect and optimism of will. A scenario planning approach acknowledges this complexity. The next sections present -in bold strokes to stimulate debate the ten major trends noted earlier, the five where there was a higher level of certainty and then five areas of debate or uncertainty that may lead to divergent futures. We paint the stories of these different futures, and discuss the choices, actions and leadership that may lever an outcome of sustained health.

What lies ahead? Trends shaping future health

What driving forces will impact on healthy societies and wellbeing in the next century? This paper presents those that were seen as most influential, important or actionable. Firstly, we present five key trends for which there appears to be a higher level of certainty, suggesting that they should be factored in any thinking on future scenarios. Secondly, we present five key trends that have generated more debate or uncertainty, with implications for divergent futures for health and wellbeing.

Health, or physical, mental and social wellbeing, has been fundamental to human beings throughout history. The desire for wellbeing that has occupied humanity for several thousand years will persist into the next 100 years. There will be greater demand and possibility for wellbeing, rather than merely absence of disease. New concerns around wellbeing may emerge, such as protection of sleep, or managing continuous partial attention (Watson 2012) and new contexts, discussed further, will shape wellbeing.

Artist representation (partial) of Summit group discussions on demographic trends, January 2013

What are we more certain about?

1 We will live longer lives, with greater possibilities for healthy ageing. We will be more urbanised and interact more with artificial intelligence.

There will be greater possibility for longer, healthier lives. People will live longer and fertility will decline, with women exercising their reproductive rights. The UN projects that by 2050 the population 60 years and older will be as large as the population aged 0-14 years. The population will reach 10 billion people by 2100. Preventable child and maternal death will fall across all countries. The share of chronic, non-communicable disease (NCD) will rise to above two thirds of all disease by 2030 (WHO 2010). Regeneration, augmentation, robotics and other interventions discussed later will reduce disability and extend possibilities for healthy and productive life.

These aggregate trends mask inequalities across countries and social groups. While the share of older people will rise in all, some countries (such as China, India, Nigeria) may have rapid population growth, and others (Russia, Japan, Northern Europe) significant declines. Inequalities in and conflict over access to technologies and resources, discussed later, would lead to wide social inequalities in longevity and wellbeing.

"I'm old enough to remember in the '60s when India and China were all about the fear of …getting to a billion people – what will happen? The planet will go off its axis when these countries reach a billion people. Well, they did. And they are the growth engines. So I want to challenge us to look at the other side of this balance sheet" Strive Masiyiwa, Rockefeller Trustee.

We will be more urbanised. The UN projects that 70 percent of people globally will live in cities by 2050. Family units will continue in diverse forms, with members spread across countries and more single person households. The economies of megacities will be larger than that of some countries, concentrating power, resources and consumption. This brings opportunities for wellbeing, such as through improved transport, green spaces, services, and resource recycling. It also brings threats such as social isolation and fragmentation and ecological stress (Forum for the future et al 2010).

What else are we more certain about?

We will interact more with artificial intelligence. The use of robotics, bio-engineering to augment human functioning is already well underway and will advance. Re-engineering of humans into potentially separate and unequal forms through genetic engineering or mixed human-robots raises debates on ethics and equality. A new demography is projected to emerge after 2030 of technologies (robotics, genetic engineering, nanotechnology) producing robots, engineered organisms, 'nanobots' and artificial intelligence (AI) that can self-replicate. Debates will grow on the implications of an impending reality of human designed life.

*"The replicating and evolving processes that have been confined to the natural world are about to become realms of human endeavor....*In *Engines of Creation, Eric Drexler proposed that we build an active nanotechnological shield - a form of immune system for the biosphere - to defend against dangerous replicators of all kinds that might escape from laboratories or otherwise be maliciously created. But the shield...would itself be extremely dangerous - nothing could prevent it from developing autoimmune problems and attacking the biosphere itself"* Bill Joy, Co-chair, US presidential commission on the future of IT research , 2000

2 Climate change and scarcities of energy, water, biodiversity and food will have a fundamental impact on health and survival.

The trends in and consequences of climate change, resource scarcity, pollution and urbanisation are already apparent. Rising incomes will increase the demand for consumption unmet by the level and distribution of resources, particularly in megacities. Health will depend on major reductions in the rate of burning fossil fuels, in emissions, chemical pollution, ocean acidification and ozone depletion; as well as increased efficiency and equity in use of energy, land and fresh water and expansion of carbon sinks. UNEP estimate that by 2050 four billion people will live in 54 water stressed countries (UNEP 2008). Climate change, expansion of biofuels and rising prices are projected to threaten food security. Climate change and antimicrobial resistance raise the threat of global epidemics. While the capacity to detect and respond to outbreaks will be significantly greater, vulnerability and scarcity may lead to mass population movements and conflict. Advocacy will grow over measures to strengthen efficiency, sustainability and fair benefit sharing in resource use.

"There is no question that the global community must face up to the issue of climate change. There is no more profound and far reaching challenge for global solidarity and human health. Specifically this means that the governments of wealthy countries must set a bold course to change the way these countries produce and consume energy" Jim Kim, President, World Bank, USA, 2013

3 Science and technology will advance rapidly, with linkages across information, robotic, health and bio- technologies, profoundly affecting public health and medicine .

There will be rapid developments in earth, climate, agricultural, engineering and information sciences. Innovations are escalating in information, energy, robotic and health/ biological technologies, in genomics, proteomics and metabolics, synthetic biology, 3d printing, nanotechnology, and internal and external sensors . Within several decades many issues could through 3D printing and robotic and micro-surgery become easier to do, less prone to complications requiring long-term hospitalization and thus less costly and more widely accessible. Medicines and vaccines may be sent electronically through 3D printing. These developments will influence wellbeing, health services and nutrition and will be major spheres of wealth creation. Innovations will drive approaches focusing on predicting and preventing abnormality and on early diagnosis, personalising prevention and health promotion feedback loops, but doing so at population scale. Such advances carry risks of bioterrorism and pandemic outbreaks and raise ethical concerns. Further, unless issues of technology transfer and fair benefit sharing are addressed, inequality in access may limit their benefit in the most vulnerable societies with highest health burdens.

According to Michell Zappa, an emerging technology strategist "*understanding where technology is heading is more than guesswork. Looking at emerging trends and research, one can predict and draw conclusions about how the technological sphere is developing and which technologies should become mainstream in the coming years*" In Envisioning Technology Zappa provides a timeline and cross linkages in technology developments affecting health, shown below:

4 There will be demand and opportunity for health promotion and prevention of abnormality, linking personalised intervention to population health.

Services will move from the current dominant focus on treatment to encompass a spectrum of promotive, preventive, screening, curative and regenerative interventions for wellbeing. There will be greater understanding of how the brain works and more effective interventions for mental ill health and addiction. Through telemedicine, AI will devolve diagnostics support to community level personnel, as is already taking place in India and Brazil (Cohn 2013). People will play a more direct role in health interventions, at individual and community level linking through daily use technologies like smart phones. Information technologies connecting to social networks and collaborative systems will widen opportunities for collective intelligence, and for linking personalised interventions to population health knowledge and practice.

5 Society will be more informed, connected and interdependent, with more peer to peer learning

Information, longevity, improved incomes and a revolution in education and communication will ignite a social force. The abundance of data, digitally tracking and linking people may mean the 'death of privacy' and may replace physical interaction with transient, virtual connection, generating isolation and raising questions of how values are shaped in virtual networks. It will also allow for more even more rapid polling of and response to collectives. Demand for responsiveness, accountability and delivery on rights and services will rise. Corporates, while still responsive to shareholders, will be increasingly influenced by social demand, with the most successful in various forms of collaboration with state and society. Education will undergo major transformation due to convergence of insights from cognitive psychology and new online tools (chunking, crowdsourcing, chat-rooms, mass open online courses) creating learning spaces in the 'many to many' forms of peer to peer learning, outside formal classrooms.

What debates and uncertainties do we have on trends shaping health?

"Dr. Bill Foege, former CDC director and Rockefeller board member and a true giant in global health.. summed up the 20th century in health in four words: spectacular progress, spectacular inequities. Projecting forward a hundred years, I would hope a similar summing up for health might be expressed as spectacular equity, spectacular security". Tim Evans, James Grant School of Public health, Bangladesh, 2013

There was a level of consensus and certainty around the five 'certain' trends above and their importance for the future. Three of them - demographic revolution; new ways of learning; science and technology – were 'elected' as priority areas for group discussion at the Summit. However, other areas generated different views and debate, with less certain trajectories, including in relation to the optimistic hope in the quote above. Five uncertainties were commonly raised.   Within all ten trends there is a cross cutting issue of how the organisation and functioning of social, institutional and information systems and processes will influence outcomes, explored further in the later discussion on actions.

James Cridland 2007 (Creative commons license),

1 How will society change? Will cohesion, co-operation and inclusion dominate over isolation, individualism and exclusion?

"…This sense of isolation from other human beings raises the question, how are we going to retain the community as we move into the hundred years? Miriam Were, UZIMA Foundation, Kenya

Will the trends described earlier generate conflict, competition and identity politics, or solidarity over resources, including between young and old? Both possibilities were raised.

"…I have a nightmare that across the world societies' solidarity is crumbling. I see it crumbling in the rise of the rich in our country with people questioning welfare support and migration. And only if we can build the societal cohesion will we satisfy the dreams I have for 50 and a hundred years." Dame Sally Davies, Chief Medical officer, UK, 2013

Technology, information and knowledge can lever networking, active citizenship, problematising, reflection and social action, generating inclusion and co-operation. It can also generate individualism and isolation as problems are solved, services accessed, information acquired and commodities obtained through internet without human interaction or social 'touch'. It is unclear whether sensors, algorithms and other digital means of organising systems and responses to social demand will support meaningful participation or increase social control. AI and robots can support social functioning, such as care of elderly people, but may also displace human caring, control, work and social interaction.

2 Will social and economic policies converge or diverge? Will inequality rise or fall?

There are projections of a shift in economic power towards the east, and potential for rapid economic progress in Africa. But what kind of economies will we have? Innovations in technology will affect society and health, but how far will this be influenced by individualism and competition, or solidarity and equity? Will intolerance for disparity rise? What will 'universal coverage' provide? Will the significant developments for health be largely offered to consumers as private goods, linked to individual lifestyles and choices, widening gaps in longevity, and health or will they be organised as a public good, through solidarity based approaches to improve population health? Will accelerating innovation create new work and social possibilities or workless societies burdened by 'extra' people? Will countries move towards economic models that integrate equity and human and environmental security?

"…what we're seeing now is more and more global wealth concentrating in the top 1 or 2 percent wealthiest in one society after another. If we…try to imagine decades into the future, we either stay that trajectory…or we try to envision some way that that economic structure is overturned. And what would that look like?" Laurie Garrett, Council on Foreign Relations, USA, 2013

"Africa has a youthful population, flexible and keen to innovate, with many global actors. There are conditions for us to surpass current global leaders in invention in the coming decades" Connie Walyaro, International Young Professionals Foundation, Kenya, 2013

Debates and uncertainties about the future...

There are many specific facets of uncertainty on how the global economy will be (re)organised in the next century. While the volume of trade will shift geographically, as discussed above, there are debates about the future level of openness of capital and labour flows and of the level of collaborative vs competitive relations in the global economy. These issues were raised, but not fully explored at the Summit. Given its role as a driver of change, for example, will innovation be increasingly open access or patent protected? There are already debates about the return from patent systems for technological progress and access, R&D expenditure and competition. What new systems will support and share innovation in an environment of abundant, shared ideas, and of high social demand for equitable access to health technology.

"….in 2012 one must ask: is not six decades of failure enough time? Is it not time to take seriously the idea of patent abolition and begin the discussion of these transitional issues?" M Boldrin and D Levine, Federal Reserve Bank of St Louis, 2012

"To us, the ultimate protection of intellectual property is that we continue to really get out to the next wave of the technology invention". Rachel Duan, CEO, GE Healthcare China, 2013

3 Will it be business as usual in business?

Capital has moved increasingly freely across borders in the past century. How will social connectivity and the mobility of skilled labour affect the relations between corporations workers and consumers? Some argue that companies will have to work harder to keep customers and attract and retain workers (at least until more mature AI). Will trust, transparency and ethics be a luxury or a necessity for enterprise survival? Will corporate production of products harmful to health be a distant memory?

There is evidence of enterprise investment in innovation for health in emerging and lower income markets and communities, such as in telemedicine or affordable public health technologies, further highlighted in the later discussion on actions. Such enterprises are ring-fencing research and development resources for this, taking a longer view of returns, and co-operating with allied enterprises, state investment and social networking to support uptake of innovation. Will such corporate practice dominate, or will companies act as a conservative force, resisting innovation?

4 Will states lead or follow?

States will continue to have a responsibility for advancing wellbeing, but with sovereignty in many areas under global influence. Some envision that states will shrink, with deepening globalisation and loosening loyalties to nationality. Yet the technology, corporate, environmental and social trends described also suggest that mechanisms for widening uptake and for collective benefit depend on state frameworks and investments to achieve universal coverage. Will states rely on social control or invest in co-operation to play their role? The power of states and their ability to provide an effective nexus between the local and global levels may diminish in the face of growing megacities, local identity politics, increasing social exclusion, increasing private influence on all spheres of life, widening liberalisation and stronger global networks. In the relations across states, some foresee states fragmenting into independent, competitive units, particularly as resources and energy scarcities grow. Others see states increasingly forming interdependent, solidarity, 'unions', building co-operation around key resources and challenges.

"In Dhaka megacity, the poor's economic opportunities have expanded. Extreme poverty was halved between 2005 and 2010. But during the same period the social indicators stagnated. So… the urban poor are being given economic opportunities but not the social opportunities which they should have." Hossain Rahman, Power and participation Research Centre, Bangladesh

Artist representation (partial) of group discussions at the Summit on social and economic convergence, January 2013

5 What is the black swan bringing?

At the heart of uncertainty is the unexpected. A century ago, in the midst of confidence that germs causing disease would be eradicated, the 1918 influenza epidemic killed millions. After the US health leadership declared the age of infectious disease to be over in the 1960s, the world experienced pandemics of AIDS, SARS and H1N1. So what 'unexpecteds' can we expect in the coming years? Many potential and uncertain threats have been raised, including new drug resistant bacteria, like the NDM-1 mutation in India, a loss of antimicrobial therapy due to resistance, uncontrolled global pandemics, war and mass population movements over scarce resources, massive environmental changes, meteorites, an outbreak of dangerous nanotech replicators, a chaos of clashing algorithms, solar storms and many other sources of catastrophe. Innovation and uncertainty can bring apprehension. When the telephone was first demonstrated in 1876, some people thought that the devil was on the line (Watson 2012)! Anxiety may escalate through social media. Will it be the reality of the catastrophe or the risk foreseen that brings a change in path towards 'spectacular equity, spectacular security'?

"Disaster may push collective realisation of our common vulnerability" Connie Walyaro, President, International Young Professionals Foundation, Kenya, 2013

"If we could agree, as a species, what we wanted, where we were headed, and why, then we would make our future much less dangerous - then we might understand what we can and should relinquish". Bill Joy, Presidential Commission on the Future of IT Research, USA, 2000

It is important to separate the black swan from 'crises' portrayed as 'unforseen' events. The latter arise due to concealed or ignored sources of harm in 'normal' processes. Events portrayed as 'natural disasters', for example, may be a visible result of poorly managed climate change accentuating risk, failure to invest in protection, with emergency and protection systems biased against the most socially vulnerable and skewed towards addressing terror and crime, rather than ecological or other threats (Graham 2010).
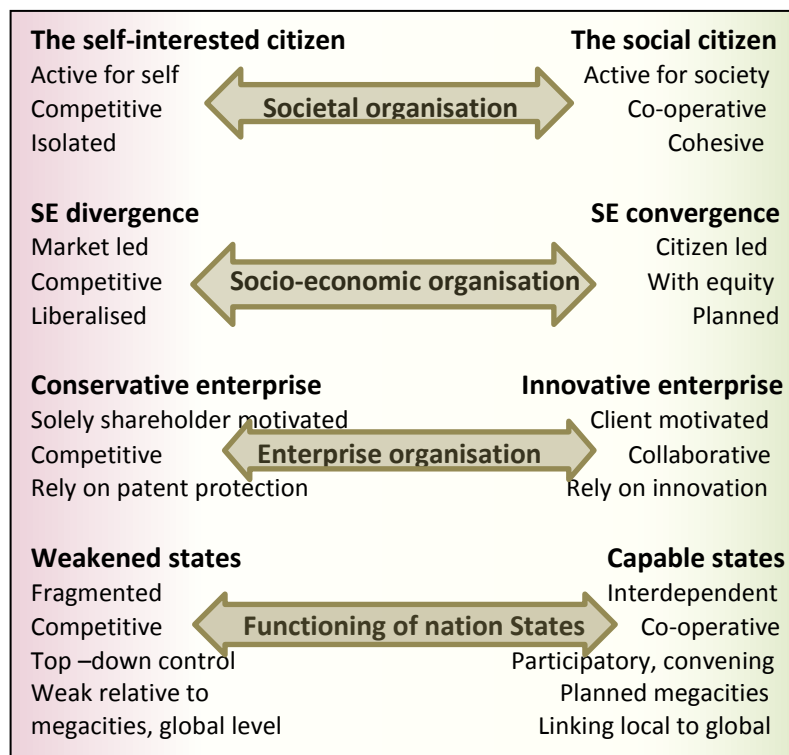

New Orleans after Hurricane Katrina Photo/U.S. Coast Guard, 2005, publication permitted

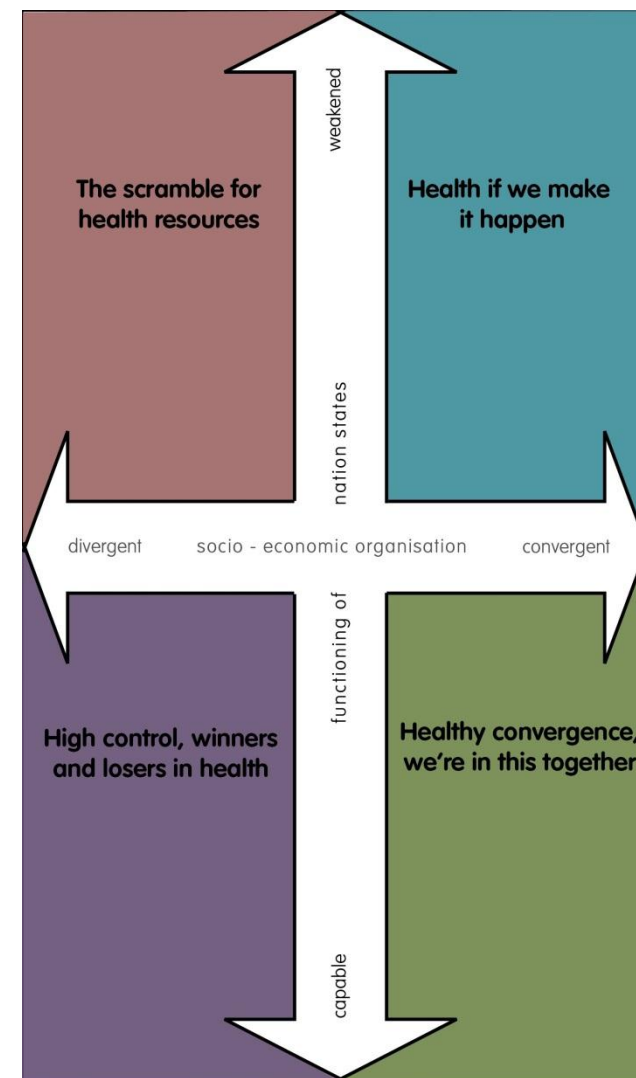# Waking up in 2050: Scenarios for the future of health

The ten trends are identified for their impact on sustained health. Combining the more uncertain trends in different ways creates a set of diverse stories or hypotheses about the future, including the more certain trends. These scenarios are designed to raise debate and choice on the future we seek, and strategies for how to shape this future or to respond to alternative futures.
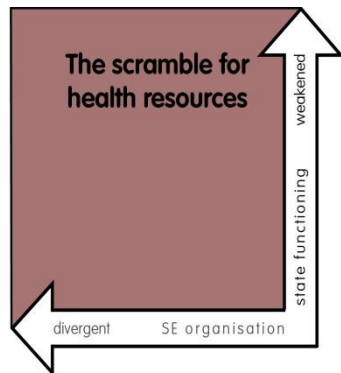
Aside from the 'black swan' four key uncertainties were identified, briefly summarised in the box. Of these, two are used in the 2x2 matrix to build the four scenarios shown.

"Delivery is more of an ecosystem of solutions, where parts of it is about private sector, parts of it about plugging gaps in the public provisions, parts of it about mobilizing community. …..How do you manage a more effective delivery through a more complex institutional arrangemen? That is where we have to really devote our minds." Hossain Zillur Rahman, Power and participation Research Centre, Bangladesh, 2013

The self-interested citizen
Active for self
Competitive
Isolated

← **Societal organisation** →

The social citizen
Active for society
Co-operative
Cohesive

SE divergence
Market led
Competitive
Liberalised

← **Socio-economic organisation** →

SE convergence
Citizen led
With equity
Planned

Conservative enterprise
Solely shareholder motivated
Competitive
Rely on patent protection

← **Enterprise organisation** →

Innovative enterprise
Client motivated
Collaborative
Rely on innovation

Weakened states
Fragmented
Competitive
Top –down control
Weak relative to
megacities, global level

← **Functioning of nation States** →

Capable states
Interdependent
Co-operative
Participatory, convening
Planned megacities
Linking local to global

Usually the two critical uncertainties are selected in a collective process. As the two days of the Summit did not explicitly include this, they were selected on the basis of issues that were more commonly raised in the discussions. One uncertainty, social and economic convergence, was elected as a priority at the Summit for group discussion. ('Convergence' referred to synergy between and mutual alignment of economic, social and ecological principles, interests and goals, around social, economic and planetary wellbeing.) The other uncertainty, the functioning of nation states was repeatedly referred to and is also used to explore the different dimensions of citizenship. The features and 'imaginings' of health in each scenario are briefly captured in the next pages.

The scramble for health resources

Health if we make it happen

weakened

nation states

divergent   socio - economic organisation   convergent

functioning of

capable

High control, winners and losers in health

Healthy convergence, we're in this together

Scenario 1: The scramble for health resources

The scramble for health resources
weakened — state functioning — divergent — SE organisation

Features ....

- Rapid technology advances driven and patented by transnationals, with patents breached by small pirate firms
- Poorly planned urbanisation, competition for and conflict over water, energy, food and other resources for health;
- Health risks from resource depletion, pollution
- Competitive, individualised society, with consumption of goods and segmented services based on ability to pay
- Global bottom-line social standards, poorly applied locally
- Command style systems for disease surveillance, prevention
- High inequality in wealth, wellbeing and high social exclusion
- Widening gaps in wellbeing and longevity, including between augmented and non-augmented humans

Adapted from Alec kend 2007 (Creative Commons license)

Watch your Wellbeing: chatroom

Jan,20 2050

Anna: Morning all! We are living in a competitive and insecure world! Yesterday Global Health Inc sent the armed robots to a small pirate factory that had been 3d printing skin tissue for street sale in our poorer communities. The market for it is high due to injuries from the uncontrolled burning of waste for heat, as many cannot afford the new energy tariffs. There have many deaths from hypothermia in poorer, elderly people. Global Health Inc claim that the factory aren't registered with their wealth fund, that the tissue was substandard and that they were implementing the global contract they have for policing public health. People in poorer communities are angry as they relied on that factory for cheap products and accuse Global Health Inc of protecting their patents. There are rumours that some from Section X of the city, you know the unplanned area where the 2046 solar flare refugees are living, well that some of them have torn off their sensors and are planning a food and fuel raid on the wealthy suburbs in the south.

Raul: You're right Anna, people are jittery. The news wire is full of pronouncements about the minimum global water, energy and shelter standards being rolled out in Section X, but the roll out has taken years. Meanwhile in wealthier suburbs the services were restored in within days. What's going on?

Anna: It's not difficult to find out what is really going on as there are a flood of blogs and reality scans, but most people are staying away from the chat rooms as they don't want to be involved. It's not just the conflict they are afraid of. Many are worried about the possibilities of infectious diseases from Section X spreading to their neighbourhood. Their private health management schemes have sent reassuring messages that they are covered in their packages by a fault-free surveillance system that is able to detect any disease, and reminders to ensure that they have had their annual sensor checks.

Meng: Check again Anna. In our city, Lagos, many people in category C jobs, you know the ones on day contracts, are defaulting on these schemes and relying on small local telemedicine services when they have problems as they can't afford the premiums. It seems like worry is the main disease these days. Despite all the scientific advances we hear about daily, some people still don't live to the 'normal' 103 years and we are seeing an epidemic of stress and loneliness related conditions in all ages.

Raul: The normal 103 years isn't normal for the wealthiest! The Vice President of Global Health Inc is 122 and still seems to be in 'good working order'! There is a hot virtual debate in the Political Forum today on the growing social differences between augmented and non-augmented people. Join me for a coffee there later?

Auto Scroll: ☑ Sounds: ☑
Send
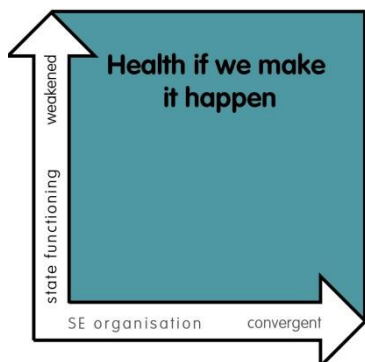
Scenario 2: Health if we make it happen

Features ….

- Innovation privately driven, with global voluntary ecological, social, and economic performance standards supporting a level of convergence
- Weak states, limited mechanisms to ensure delivery on norms leaving application of norms to local arrangements
- Voluntary collaborative relations on health, ecology between citizens and enterprises in some cities and settings
- Global organisation of public health, disease surveillance; local organisation of services; inequalities in access;
- Social cohesion variable, high mobility in wealthier people
- Moderate to wide inequalities in wealth and wellbeing, with the extent of social inclusion of elderly and vulnerable groups dependent on the level of social organisation.

The vertical Farm, Photo D Despommier, Columbia University

the San Marino Community Health newsletter

Correspondent: Raul Frank

Hello all! Here I am again with your weekly update on events, plans and progress. Thanks to the Elderly Workers Union for hosting our monthly meeting with business, global and state colleagues. When the public authorities closed the last public hospital we lost our meeting room! We were briefed by videoconference from the Global Standards Agency in Beijing on the latest norms cities should reach on environment, wellbeing, local production and recycling. We raised our concern that state authorities are not enforcing the standards. The Community Food Producers Association asked why the findings of the 2047 evaluation on investing in state and citizen enforcement were not being acted on. The representative of the GSA told us that is a local matter, but Greg from the CFPA raised that local government funds collapsed after the common international currency (CIC) was adopted. We are fortunate in San Marino to have forward looking enterprise working with us on the area wide diagnostic and personal health promotion platform. The Elderly Workers Union reported that the scheme pairing elderly people with volunteers to respond to sensor alerts is so popular it needs new volunteers!

At the end of the meeting we had a good exchange with Saito and Meng, our contacts from the community health teams in Tokyo and Lagos, on the sharing of telemedicine systems and data networks for our peer learning programme on public health models. Meng told us that in Lagos the city has not yet recovered from the sea rise in the 2030s. They haven't yet raised more than a tenth of the trillion CIC units they need to access the green technology to meet standards and have been hit by crime and infectious diseases that they thought had been eradicated thirty years ago. Many younger people who have the CIC units to do so have left Lagos for better opportunities and better health elsewhere and some enterprises have stopped implementing voluntary global norms. He was really frustrated that the global negotiations on duties to prevent outbreaks have still not reached a resolution, even after 10 years.

Lastly, an update on the cross sector rehabilitation after the 2046 solar storm. The AI systems are fully operational again. Thanks to the families who contributed, we are the second area to get all children back onto the learning networks! The funds we negotiated from the global foundations were used to rehabilitate the microsurgery units and the biomass processing plants that we use to service the Los Angeles Megacity area. Sarah who has just moved in from the east of the city says that people are not organised in her area and things are moving much more slowly. Its good to be in San Marino! I wonder, though, if we are ready if other areas of LA have the disease outbreaks that Meng described in Lagos?
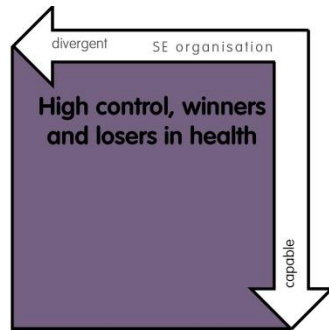
Scenario 3: High control, winners and losers

Features ....

- Increased concentration and alliances across large corporates, especially in information and bio-technologies;
- States regulate business, apply ethical codes on biotechnology, AI, on shareholder social duties, and partner with business to support innovation in technology and contract private services;
- States form alliances and negotiate globally to secure interests
- Energy, water, transport services largely private with state co-investment in infrastructure, research and development
- Universal, public diagnostic, prevention, health care and addiction cessation services; Augmentation, biogenetic and other services provided privately through the market with wide variation in access
- High inequalities in wealth, moderate inequalities in health; Social discontent in vulnerable groups on inequity in access
- Developed cyber security systems, immigration controls; with algorithms used to predict and manage social behaviour

Saito please update me on the evaluation of the post 2046 solar storm recovery. How effective were the global early warning systems, emergency committees and emergency consolidated funds in meeting needs? How many households were protected from catastrophic spending? Akane

Health and Wellbeing Notice 2345/6/50

Issued by the office of the Chief Wellbeing Officer
January 20th 2050
To: CEOS of Enterprises, Knowledge institutions; Megacity local councils, Service providers

Please note that there has been an update to Notice 2015/2/46 on the provisions for service benefits to the populations of Tokyo Megacity. Following the costing of wider application of innovations in prenatal gene manipulation we will now be including this in the package of services offered in the Universal Benefit for all registered residents of the city. Corporates operating in the city are expected to include this in their private schemes at own expense, to contribute the mandatory levy on the additional benefit value to city elderly care fund and to include biosafety monitoring and quality control within the planetary health standards set by global protocol 345 and national protocol 6789/9. Please read the full notice to see which elements of gene therapy are excluded and need to be purchased through available private schemes. Providers are reminded to check residents' electronic records to ensure that they are genuine residents of the Megacity, to report non-residents to the Immigration Sector and to enter their data in the Protest Prevention Algorithm through the provider login.

We welcome discussion with consortia of business and private providers on research and development to reduce costs of gene therapy services not in the Universal Benefit that are currently offered only to high end markets. Please ensure that proposals make clear the shareholder duties and environmental and service requirements. For those services that are prioritised within the 2050-2060 planning cycle the state offers the possibility of trading of environmental penalties with countries that have a credit balance, as well as organisation of city pilot sites.

Scenario 4: Healthy convergence, we're in this together

SE organisation convergent
state functioning
Healthy convergence, we're in this together
capable

Features ….

- Wellbeing, planetary health embedded in all policies
- Creative commons and global innovation resources supporting R&D of needs based accessible technologies for health, in line with health, ecology and economic goals
- Resource scarcities managed collaboratively between countries and cities
- Collaborative relations across social, state and private institutions, active, social citizenship, shareholder and stakeholder accountability systems in enterprise;
- Universal, public social services, based on solidarity, ie equity in the distribution of benefits and burdens, effectively delivering innovation, supported by global and national measures
- Low inequality in health and wellbeing; information platforms supporting social cohesion and participatory government

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Santiago School of Wellbeing

January 20th 2050

✉ 1 You have feedback on your submission on lessons for public health from the post 2046 solar storm from the online peer learning network !

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Peer feedback from: Meng Zhao, Lagos 20/1/2050

Anna, well done! I really enjoyed reading your document on lessons for public health from the post 2046 solar storm for next week's forum. You make coherent links to the learning we had after the climate disasters of 2030, the realisation of shared vulnerability that it brought and the expansion of efforts it triggered on integrating environment and wellbeing upstream into economic measures. It was useful to read your examples of how we built co-operation and change around planetary health and reduced the intergenerational debt. You could also have raised, Anna, how after the court case on shareholder duties we broke the deadlock on healthy food products, transformed urban food production, moved to low emission low carbon dioxide energy generation, effectively managed safe water provision and use, and promoted green spaces. It's useful that you showed how longevity and longer periods of disability free life led to longer working life and shorter working days, opening more time for community social roles.

You are right that implementation sciences provided useful ideas for how to deliver innovations within our systems. But the fact that our health services are universal, public and organised on the basis of solidarity has also played a central role. There is a useful paper by Evans et al (2043) that you can read. It analysed electronic records for the very different health systems in 30 countries and found that those offered through public sector solidarity based systems offer the most effective and co-ordinated routes for integration and scale up of technological innovation, especially where they were reorganised from the lens of different social groups. In my experience the scrapping of the patent system for R&D in the late 2020s in favour of global funding for innovation and access and the ombudsman for ethical innovation also played a big role. It stimulated various forms of public, private and community cooperation. In our setting what has been even more important is that communities claim their social values and rights.

So how did that affect success in managing the aftermath of the solar storm? You describe the co-operation in mitigating the impact. Remember also, however, that even before the massive solar storm hit, state early warning systems prepared for the threat several years ahead, investing with business to develop mechanisms and technologies to minimise impact and working with communities to ensure that key services such as telemedicine, children's learning sites, social networking and public health surveillance and response were not affected.

None of the scenarios above are 'doomsday' scenarios. None are utopian visions. They present, somewhat simply, possible trajectories of life, health and wellbeing.

They prompt questions:
- **Which scenario would I prefer to live in?**
- **Which scenario is more likely to enable the growth and development of healthy societies?**
- **What social architecture and social action will bring that scenario into existence?**
- **If another scenario came about, what could we do to advance sustained health?**

"We will continue to live simultaneously in the best and in some of the worst of times" Earl G Brown, Virologist, University of Ottawa, in Wallace (2008)

"Economic development, which does not narrow existing inequities and income and opportunity or even accentuates those inequities, cannot lead to social development, desirable social development. …Economic development, which is profligate in its use of natural resources, is also not going to lead to sustainable social development. …There has to be a substantial citizen-centered approach where the citizen participation is going to ensure that the balance is restored in terms of the ..downstream benefits of economic development". Summit delegate, January 2013

The White paper raises these questions for wider discussion. While (unequal) health benefit will accrue in all scenarios, delegates at the Summit suggested that features of the fourth scenario are more likely to produce sustained health. In this scenario the combination of SE convergence, social cohesion, public policy and state action were seen to provide more conducive conditions for health promoting developments to reach those with highest health need. Society in this scenario may be more able to address the certainty of shocks to health from climate change, urbanisation, energy and resource scarcities and demographic change, and to share the benefits for health of increased connectivity and new ways of learning.

In this fourth scenario health and wellbeing, including in terms of planetary health - are integrated within economic and technological development. States, guided by values of equity and clear goals and learning for planetary health, social wellbeing and economic progress convene co-operation across social and economic actors, within and across megacities, regionally and globally. Social cohesion, active citizenship and solidarity are key features of society, including in the relations with innovative enterprise.

In contrast, many submissions at the Summit and in the literature suggest that current trends would take us rather towards Scenario 1 or 3:

"Economic disparities, nationalisms and religious fundamentalisms will have heightened the tensions among different groups and populations. Opposition between haves and have nots…will have worsened. Large cities crushed by overcrowding will have degenerated into jungles ruled by crime and violence. …There is nothing unexpected in this dismal view; it is none other than the extrapolation of the present into the future." C de Duve, International Institute of Cellular and Molecular Biology, Belgium, 2008

- What then are the current and future systems and actions that may lever a scenario (4) of sustained health?
- What policies, systems and actions will move us from other scenarios to Scenario 4?
- Where is the leadership for such action found?
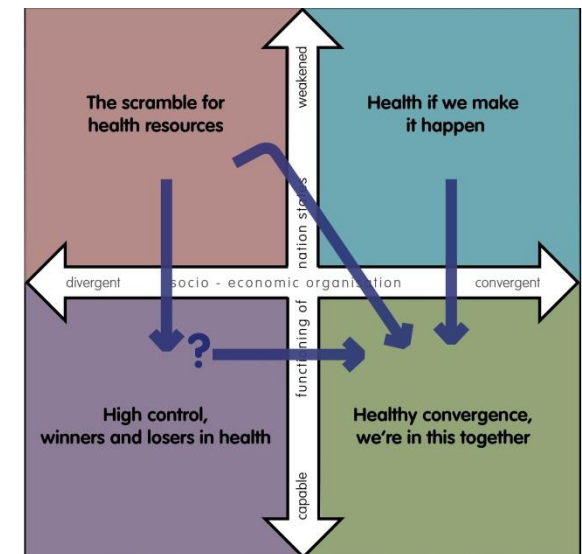
Taking action for a future of sustained health

What actions do we need to take to move towards the scenario of sustained health? This section explores the actions proposed:

o **the value systems, thinking and ways of learning that set a foundation for action;**

o **the sites of action, in ethical frameworks, planetary health policies and public health approaches;**

o **the means of action, in the organisation of state, enterprise and social systems.**

"If you don't create the future the present extends itself."
Srinath Reddy, Public Health Foundation of India , 2013

The Summit articulated the significant possibility in the coming century of making progress in enhancing mental, physical and social wellbeing and in the agency to achieve it. Delegates raised the necessity of making clear the deep links between our health and that of our planet. While the trends may lead to different hypotheses about our future, there is a common, optimistic thread. A future of wellbeing and planetary health lies within our hands and the actions we take within and across constituencies and countries will shape our world in the next century. Indeed, some say that we are now in the 'anthropocene' era, recognising the significant impact humans now have on the Earth's ecosystems.

This section addresses the question: How will we organise ourselves and what actions will we take to secure the future of sustained health- human and planetary- envisaged in Scenario 4? What social architecture, systems and processes will support choices in relation to the uncertain trends, whilst taking into account more certain trends, in relation to ageing, climate change, science and technology, prevention of illness and disability and connectivity?

The Summit and interviews provided broad direction on the areas of organisation and action that are presented in this section, complemented by information from related documents.

o   The first set of proposals made relate to the value systems, thinking, and ways of learning that set the *foundation* for action;

o   The second set of proposals made relate to *sites* of action, including the ethical and regulatory frameworks, planetary health policies and public health approaches;

o   The final set of proposals made relate to the *means* of action, in the organisation of state, enterprise and social systems.

In each area, examples are suggested, with hyperlinks provided for further information on each example. The Summit proposals are not exhaustive, and the White paper intends to stimulate further, wider dialogue on actions for a healthy future.

Foundations for action: shaping values, thinking and learning

Summit delegates argued that the actions needed to secure a future of sustained health need to be based on values of equity and solidarity, on cross disciplinary thinking and on participatory and practice linked learning.

1 Claiming precedence for equity and solidarity values

The different scenarios reflect different dominant values. Summit delegates pointed to equity and solidarity values as fundamental to achieving future wellbeing. These values were identified as a basis for recognition of common good, as drivers of economic and social convergence, social inclusion and security, and as the basis for an ethical foundation for scientific and technological innovation to respond to and reach those with greatest need, discussed further later.

"This implies a genuine movement of global solidarity that can support economic growth and development, particularly in low-income countries, while undertaking concrete action to limit climate change and mitigate its effects. The notion of solidarity with and responsibility towards future generations must be at the heart of this new global alliance. To me, a critical role of multilateral organizations is to serve as practical vehicles of global solidarity, ensuring that solidarity is translated from abstract moral commitment into practical action" Jim Kim, President, World Bank, 2013

Foundations for action ....

As the quote indicates, equity and solidarity values, including in terms of intergenerational equity, are also fundamental to building the relations across countries necessary to address climate change and planetary health.

Current reality, however, reflects more the scramble for resources of Scenario 1 than the equity of Scenario 4, notwithstanding widening social activism on and increasing policy attention to equity. These values need to be systematically embedded in various areas of functioning.

Summit delegates pointed to options for this, such as in revaluing distributional measures of wellbeing and of environmental renewal in planning or assessing economic performance. Specific institutional measures and capacities need to protect these values, such as the proposal for an ombudsman for future generations within the UN environment Protection (UNEP), to protect intergenerational equity. Equity values inform many other proposals for action raised in this White paper, including ethical decision making on technology; rethinking the balance between shareholder and stakeholder accountability in business, or configuring global measures on the basis of shared responsibility.

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Moving forward…
There are many initiatives organised around equity and solidarity values.

Interacting with global processes such as the 2008 Commission on the Social Determinants of Health, growing networks of civil society, such as Peoples Health Movement, are organising communities around various dimensions of equity, such as on water rights, treatment access; food sovereignty and so on.

Brazil's Creative Economy plan and secretariat deliberately organises creative industries as a means of socialisation, building of social trust and to affirm inclusion and community knowledge in the creation of work and income.

Common vulnerability, shared risk and shared responsibility are being raised as a basis for collaboration across countries in some global level negotiations, including those on universal coverage, research and development, fair benefit sharing, and intellectual property in UN, WHO, World Trade Organisation and other forums are raising. These principles also informed the 2007 Oslo Ministerial Declaration on global health by Ministers of Foreign Affairs of Brazil, France, Indonesia, Norway, South Africa and Thailand.
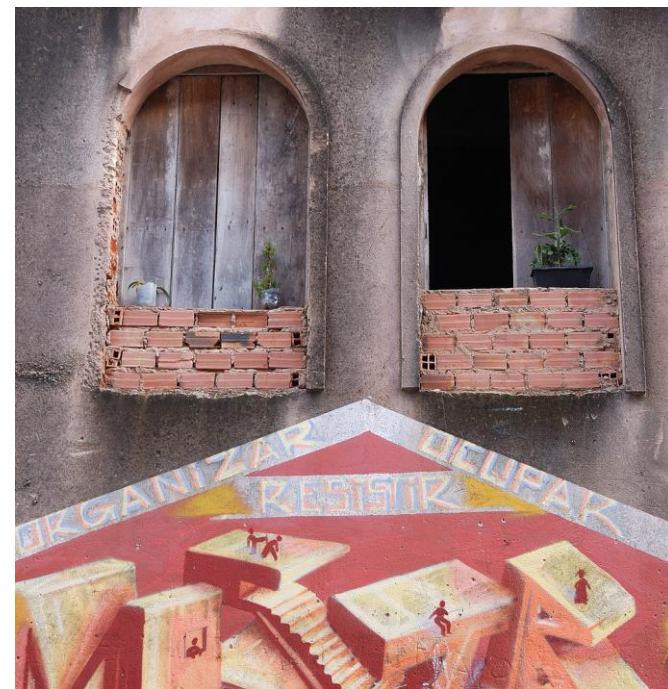
Passo Salvador, Brazil, Photo Rosino 2011 (Creative Commons license)

Foundations for action ...

2 Changing the way we think

The Lancet Independent Commission on health professionals for a new century concluded that we need to 'think differently and break disciplinary silos to build the public health practice needed for the 21st century (Lancet 2010). The combination of people, ecology, systems, politics, economy, science and technology that takes us to Scenario 4 calls for cross disciplinary, 'joined up' thinking, harnessing the logical capabilities of science, blue sky thinking on technology, reflexive thinking on social processes and an understanding of systems, including for delivery. The Summit pointed to a particular need to deepen our understanding of the shared determinants and strategies for healthy populations and a healthy planet, such as in relation to water, energy, food and urbanisation.

"Questioning the foundation of existing systems is a positive act….. Harold Innis says that students should be taken to the edge of the precipice beyond which knowledge does not exist. …We have no other option than to be dragged, kicking and screaming, to this precipice" Michell Zappa, Envisioning Technology, 2013

New thinking is not a preserve of specialists – it can flourish across all of society. Public rights to information and the spread of communications, such as through information platforms and podcasts, provide widening opportunities for practitioners, communities and local actors to use global knowledge and to contribute local experience and perspective to new thinking, including at global level.

Moving forward…

The 'dreaming the future' process convened by Rockefeller is one of many platforms and possibilities building new thinking on wellbeing

The Ushahidi platform (meaning testimony in Swahili) was initially developed after the violence of the 2008 Kenyan elections for individuals to post and share information by SMS, or via the web on irregularities and responses. It has since been more widely by people to source and to share information and experiences on different dimensions of work, environment and wellbeing.

New thinking is institutionalised at national level, such as in Thailand's Future Innovative Thailand Institute, bringing different disciplines together to project and plan for futures in areas such as economy, climate and education

New ways of thinking are raised and debated through moderated issue columns and debates in media, social media sites, sites on innovations such as Envisioning Technology, twitter and various websites on 'ideas worth spreading' talks

The Rockefeller Foundation's Bellagio Center, and the Mandela Foundation provide spaces for new thinking. Debate is also built in social networks and forums, joint learning initiatives and networks. A 'big idea' such as elaborating strategies for planetary health may demand a global process such as an International Commission.

3 Changing the way we learn and use knowledge

With any of the four scenarios possible, including the more harsh outcomes, knowledge systems should support capacities to survive, adapt, and flourish in the face of stress and to transform conditions where change is needed. Knowledge systems that build capacities for innovation, self-determination and collective organisation are more likely to produce the active citizenship for Scenarios 2 and 4. This is more likely when learning is linked to practice through participatory learning, where, as defined by Paolo Freire, *"reflection and action upon the world in order to transform it."*

Massive Online Open Courses (MOOC), described earlier, significantly amplify access to education. Information technology also offers the possibility of taking Freire's collective, practice linked and problem solving learning to much wider scale, 'flipping the classroom', through peer to peer exchange, feedback loops and simulations.

"The most important revolution is the idea of flipping the classroom, Salman Khan's idea that what we used to do in the classroom, which was to transfer, transmit knowledge, you now do at home; and solving problems is what you now do in the classroom" Julio Frenk, Harvard School of Public Health, USA, 2013

There are huge opportunities to use such innovations for health if inequity in digital access due to costs, electricity and other barriers are addressed, if the quality, accreditation and links to employment of online courses is developed, and if they integrate differences in politics, culture, values and 'voice'.

Foundations for action...

Online learning offers the possibility of responding to a changing demography, creating opportunity for elderly people to enrol in learning programmes or to provide peer support to other learners, strengthening their social roles and inclusion. It opens access to learners from different disciplines, can link learning to implementation, and can in peer to peer approaches share innovation to support service delivery.

"*Building a science of delivery is an urgent health and development challenge*" Jim Kim President, World Bank 2013

It will thus be important to share information on experience of such transformations in education, particularly in strengthening bottom up, in service, problem solving in the frontline of health systems, and in strengthening the role of institutions in low income countries in shaping and delivering courses.

"*If in a country like mine, where we have too few doctors already, I take a hundred of them to make them specialists. During the time they are in the North to be educated, four years, sometimes six years, how many people will die because we have missed one M.?. So e-learning, e-mentorship is very important*" Agnes Binagwaho, Minister of Health, Rwanda, 2013

Artist representation (partial) of discussions on new ways of learning, January 2013

Moving forward…
Various initiatives are implementing these transformations in learning:

There are a range of Peer to peer learning platforms for skills building, such as are found in P2PU, Openstudy; Udemy, Livemocha, Udacity, or Grockit, and chatrooms for health workers .

Harvard and John Hopkins offer MOOCs 'on epidemiology and biostatistics. Harvard enrolled 55,000 people, and 5,000 passed the final exam, equivalent to 10 years of regular master's programs intakes. AMREF Africa is using online learning to accelerate nurse education of nurses, upgrading the skills of 7,000 nurses in Kenya.

The private sector has linked with state systems to provide in service e-learning. The Summit heard for example about experience in China. With inadequate field engineers to fix machines, hospital employees connect using a laptop to a cyber-service centre to access engineers help fix machines, learning in the process how to do it themselves for the next time.

Sites of action: technology, policies, public health

A future of sustainable health calls for ethical innovation, alignment of economic policy to planetary health goals and for equitable health systems that link integrate innovation to benefit population health.

4 Applying ethical principles in technology

There is an optimism that technology will provide solutions to food, climate and other problems. However the acceleration of technology in a liberalised environment is outstripping the formulation of ethical and regulatory standards to protect the health, culture, ecological integrity or benefit sharing reflected in Scenario 4. States, beneficiaries, producers, expertise, and the public need to be informed about and involved in assessing and debating ethical norms and regulation around new technology. Such debate is not new. The Rockefeller Foundation has, for example, convened dialogue on AI and its use from as early as 1949. However it is now particularly urgent in health, given the acceleration of innovation in the sector, the need to apply the precautionary principle and to ensure equity. There are many ethical concerns, such as: Under what circumstances should restraints be placed on what is technically feasible, as was the case with human germ-line therapy? How can benefit be promoted and harm avoided (a question already raised in debates on the manipulation of plant and animal genomes)? What ethical norms and regulation are needed in relation to assessment, safety, gene transfers or interspecies mingling? How should moral hazards and competing interests be addressed, as in the case of 'terminator' genes that make seeds sterile?

Sites of action...

5 Aligning economic policies with social and ecological goals and policies

Scenarios 1 and 3 assume that the 'growth, growth, growth' driver of policy continues to prevail, with attendant economic volatilities, imbalances in consumption and inequities in wellbeing, albeit with a stronger role of the state to secure social benefit (and control) in Scenario 3. In Scenario 4, a more profound realignment of economic, social and ecological goals occurs. Doing this demands the same bold thinking that informed innovative practice in public health 100 years ago. Making coherent links across health, production and ecology will be particularly important given the pressures of urbanisation, such as in new thinking on 'circular urban metabolism' turning waste from liability to resource. Private sector innovations have important potential to contribute to positive interactions between health and ecology when appropriately incentivised. A growing intolerance for volatility and inequity is leading some countries to pursue contra-cyclical policies, and to advocate for performance measures that include wellbeing and ecology. Summit delegates raised that expectations of growth in high income settings need to be balanced by ecologically sound consumption and global solidarity.

The massive gap between innovation and access means that the pressure for options to ensure both reward and access will gain momentum as innovation accelerates. In the movement towards a more viable system a number of options are being explored, including country contributions to large innovation funds, patent pools that enable generic production, platform technologies, team science and strengthening co-operation across countries.

Ecohealth in urban planning: New York Highline transforming old rail into urban public green zones N Vollmer 2013 (Creative Commons License)

Sites of action...

6 Transforming public health and health systems

Health systems can provide leadership to changes supporting sustained health, but do not always do so. In scenario 1, a competitive scramble for resources positions health resources and health systems as commodities to be purchased, with wide inequalities in access. In scenario 3, the state intervenes to provide the basic standards and benefits needed to ensure stability, but does not get to the underlying determinants of health. In scenario 2, in a context of weak states, people in some communities use various associational relationships to secure their health service needs and to promote healthy conditions, but with limited measures for solidarity between communities, limited population wide measures due to weak state action and thus continuing risk and inequity. All of these settings share features with currently prevailing systems. Moving towards Scenario 4 calls for health systems to go further-to lever upstream integration of wellbeing into all activities and strengthen prevention, to ensure solidarity and link individual measures with those for public health and to build participatory involvement within health systems.

"It remains important to understand the population distribution of disease and risk factors, how population interventions differ from clinical interventions and how very small changes in a risk factor profile for a country …can remarkably change the burden of disease"
Michael Klag, John Hopkins, Bloomberg School of Public Health, USA, 2013

However systems need knowledge and cadreship to achieve this. Skills for the long term call for competencies in systems and personnel to:

- Carry out the translation research, epidemiology, public health system and ethical analysis to integrate 'personalised' prevention measures within a population health framework;
- build dialogue and share knowledge with those in animal and environmental sciences, architecture, planning, economics and other disciplines, to build cross disciplinary practice;
- develop and use tools and systems so that health is integrated upstream in emerging practice, and
- use participatory methods and processes to facilitate socially driven health promotion and prevention, taking advantage of technologies such as smartphones and electronic health records.

Are the current public health schools the place to build such knowledge and competencies? Many necessary capacities lie outside public health schools. Summit delegates proposed that the walls around schools of public health need to be 'pulled down', to interact with the disciplines, communities and corporate activities that impact on the determinants of health, on health equity and on delivery. There are an expanding number of means to achieve this.

Moving forward…

The movement for Universal Health Coverage has gained ground at global and country level (Giedion et al 2013), including through adoption in December 2012 of the UN Resolution on the Transition of National Health Care Systems towards Universal Coverage.

Initiatives reported in the Summit point to the many innovations that exist in public health and social interface with services, not always documented:

"In Bangladesh, continuous lifelong, portable, electronic health records are being developed based on unique biometric identifiers assigned at birth as part of universal vital events and health information systems". Dr Tim Evans, James Grant School of Public Health, Bangladesh

"In Shanghai they have community-based self-help groups organized with government input that help each other in terms of learning how to control their blood pressure and blood sugars, how to live a healthier life, group exercise etc. I think we need more innovative ways to deal with ageing." Meeting delegate, January 2013

Scientific discussion is taking place on how to link innovation to public health, so that their public goods dimensions can be realised. For example, the field of Public Health Genomics analyses how genome-based knowledge and technologies can responsibly and effectively be integrated into health services and public policy for the benefit of *population* health (Cleeren et al 2011).

Means of action: transforming state, society and enterprise

The actions discussed in previous sections call for an effective interface between state, business and society oriented towards enhancing social and environmental wellbeing.

7 Promoting enlightened enterprise and bridging the stakeholder- shareholder divide

Prior sections have raised discussion on investments in innovation, co-operative forms of enterprise, state links and informed public pressure that characterise future trends in business. In Scenario 2 and 4 social and economic convergence is supported by 'enlightened' and socially responsive business. How is this advanced and institutionalised?

Efforts have been made to inform and motivate enlightened enterprise. Health and environment impact assessments make visible social and ecological costs and benefits within enterprise planning, while innovative financing instruments, such as impact investing, direct private capital funds towards business activity that addresses social needs and embeds social and economic goals within the assessment of performance of investments.   Instruments such as 'GIIRS', a third-party impact ratings tool, assess and report on the social and environmental impact of companies and funds to inform investor decisions.

Efforts to incentivise and build accountability in business on social and ecological goals highlight the relative influence in company decisions of shareholder and stakeholder interests.

Civil society, consumer and labour pressure has motivated greater business attention to public interests, strengthened by 'right to know' and public disclosure measures and by social networking across countries. While some argue that company law holds companies accountable only to *shareholders*, including in relation to 'externalities' such as health and environment, others, including foreword looking corporations, recognise that companies have both public and private roles and should also take into account the interests of a broader range of *stakeholders* (employees, consumers, public). In the absence of any legal directive on wealth maximisation *only*, shareholders also have duties to maximise other areas of public good (Ho 2009).

Hence for example the United Nations' Principles for Responsible Investment (PRI) profile wider corporate responsibilities, or the UK 2006 Companies Act includes the impact of the company's operations on the community and the environment within the fiduciary duties of corporate directors. Implementing this broader understanding of shareholder duties is, and can be further supported by the range of tools discussed earlier.

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Rhys Asplundh, 2010 (Creative commons license)

Moving forward...

Denmark's Mind Lab is a cross-ministerial innovation unit of the state that involves citizens and businesses in developing new solutions for the public sector.

In addition to corporate obligations to implement environmental and health impact analyses, Oxfam has applied with some large companies a method for measuring and raising action on a company's impacts on poverty (poverty footprint), across the value chain.

By 2010, nearly 700 institutional investors, asset managers, and industry service providers, representing $18 trillion in assets had signed onto the United Nations' Principles for Responsible Investment that requires environment and social disclosures and issues to be incorporated in investment decisions,

Means of action...

8 Transforming states and state-society relations

These changes are taking place in an institutional environment of growing cities, supranational institutions and corporations, globalized citizens, social and other networks. Yet states continue to have a critical role. Where states are weak, as in scenarios 1 and 2, societies are left to 'fend for themselves', to the disadvantage of the most vulnerable. Innovations in health in these circumstances are less likely to have population wide benefit and less likely to have organized support. Where states have greater capacity, they may not always use this to orient economic activity towards wellbeing or to organize universal services (Scenario 3). Scenario 4 is thus an outcome of active citizens and enlightened enterprise. It calls for competencies within states to regulate, incentivize and service within complex constellations of actors and structures. It also calls for more participatory democracy.

Where I see the major governance challenge...is that most of the incentives for managing change are directed within institutions, and most of the challenges…require engaging across sectors.. Our governance structures don't provide incentives, our education doesn't develop competencies or leadership skills for negotiating arrangements outside of the institutions that we become technically qualified to work in. That's a major barrier to the ingenuity needed to manage complex problems".
Summit delegate, January 2013

Moving forward…

There are many initiatives that support social networks and active citizenship for social accountability, such as in the Ushahidi platform cited earlier, or Laboratorio de Cultura Digital Brasileiro that supports society to monitors the status of bills through the local legislative process. Others support dialogue and joint action between state and society. For example Lenasia Crime Alert uses web and sms to report any criminal or suspicious activities occurring in Lenasia, South Africa, to reclaim the streets and increase security. Alerte.md maps and solves public issues in Chisinau, Moldova. It helps citizens to report problems to the local government in a less time-consuming way. In Singapore a government outreach programme REACH (short for Reaching Everyone for Active Citizenry @ Home) has led to a threefold increase in suggestions and feedback from the public on public services over four years. In Helsikni, the Helsinki Design Lab has gathered different skills and actors to solve problems faced by government.

The shift from oil dependence to wind energy (presented earlier) in Denmark not only exemplified public policy on renewable energy, it showed innovative state-social-enterprise relations. The energy change was done through a mix of public ownership and planned state action. Government funding gave a boost to Danish windpower producers. Electricity distribution companies were obliged to purchase a quota from these sources. A residency criteria meant that wind ownership was limited to those living in the same municipality of a turbine, leading to 150 000 families in co-operative energy ownership in the 1990s and generating political support and public participation in energy policy (Cumbers 2013).

Mads Prahm, Middelgrunden" Offshore Wind Farm, Denmark 2002 (Creative Commons License)

States are moving towards more open government, using telepresence, cloud services, self-service centres and online workspaces and forums for collaborative, participatory processes. For example after India's Gujarat earthquake a mobile app was used to share stories about how the neighbourhood used to be, aiding the redesign and recovery.

Sectors of government will need to support cross disciplinary functioning by moving towards higher levels of co-operation, collaboration; cross agency co-ordination and integration, including through pooled budgets. They will also need to reduce the complexity of the institutional processes that the public face when trying to use and improve public services. As health determinants increasingly shift beyond the control of individual countries, Summit delegates raised that global interaction on public goods should increasingly be framed beyond aid (based on dependence), with global standards, innovative financing, and pooled global financing for R&D raised earlier indicating a shift that will need to be further developed towards global measures for shared responsibility and solidarity, based on intradependence.

Leadership for healthy futures

Taking forward actions to build a future for sustained health demands a political leadership able to inspire, mobilise and defend the policies and actions that bring it about. This leadership may emerge from and within any or all spheres of society, political, state, civil society, market and academia.

The equity values, innovative entrepreneurship and trans-disciplinary systems described earlier assume a shared global orientation towards goals of sustained health, including planetary health. History and current conditions indicate that this assumption is contradicted by realities such as narrow interests, power imbalances, extreme politics and short term goals. Insecurity and fear may lead to conflict, extremism and individualism.

 "What if we could take a time machine and go back to a similar meeting in 1913.. We would hear all the exciting prospects, and then we would say, well, stop your talk, guys. You're heading into a hundred years in which about 130 million people will die very brutally, very quickly in wars. ….What could we speculate went wrong? I think it brings us back to the question of economic and social development. They forgot about the social development. They forgot about the crowds, the millions of hungry people in Russia … the frustrated people in Central Europe after the first world war". Birger Forsberg, Karolinska Institute, Sweden, 2013

This section discusses the nature of the leadership needed to inspire and organise actions towards a future of sustained health.

The Summit identified that leadership may emerge from and within all spheres of society, political, state, civil society, market and academia, and that this will be increasingly true as the transformations in information and learning raised in this paper are spread and accessed globally. Leadership was seen to grow from an early age.

Delegates highlighted its features as: willing to think 'ahead' and outside the box, committed to solidarity, equity and wellbeing; able to build and engage within complex adaptive systems; able to make coherent connections between local, national and global level; to find and integrate learning and information from multiple sources; to think strategically, listen to people, facilitate and steer collective processes, and to mobilise multiple actors to create a momentum for change that goes beyond the immediacy of the next electoral cycle.

"Bangladesh is a delta… dependent on four or five countries that control upstream use of that water. And so the global dimensions of water management… along with the global climate change issues related to rising sea level are ones that the country cannot afford to defer . ..Convergence of multiple dimensions of problems which are part of the same problem is an enormous governance challenge" Summit Delegate, January 2013

Such leadership is found in political organisations that espouse solidarity, and that are visionary, trusted, people centred, competent and legitimate. Others gave insight to the kind of innovative 'venture' entrepreneurship that will be responsive to social, environmental and health interests, open to new ways of doing business and contributing to the measures and systems for social and economic convergence. Many delegates foresaw a key role for active citizenship, with a leadership in civil society that brings new ideas, solidarity values and organic links to social networks. All were seen to connect with knowledge leaders who support competencies, and support problem solving.

"We need to put health not only in the hands of doctors, nurses, pharmacists or dentists- like many of us here, including me - but health must also be in the hand of the active citizen." Suwit Wibulpolprasert, Ministry of Public Health Thailand, 2013

When leadership from different constituencies combines it can provide the ethical compass, and innovative thinking, intersectoral architecture and social force to move us from the pessimistic future of scenario 1 to the optimistic imagining of scenario 4. This requires stable platforms for conversation, consultation, consensus building, negotiation and concerted action. Current institutional culture may not always support this. For example, Summit delegates raised that a culture in academia that rewards individual citation over collective impact may weaken the commitment to invest the time needed for such platforms. Rewarding health managers and workers for numbers of cases treated may skew interest away from spending time to build the social and cross-sectoral participation needed for promotion and prevention.

Large, centralized institutions with top-down, expert-driven thinking may not be the only, or best sites for the ideas, leadership and action for health futures. In the same way that Wickliffe Rose's travels to and engagement with local people in Southern USA in 1911 triggered the Rockefeller Foundation's innovations in public health; John Snow's interviews with local residents in the 1854 Broad Street cholera outbreak in London UK opened new thinking in public health and barefoot doctors working in communities in the 1960s in China generated new ways of thinking about health services, the drivers of innovative thinking and action needed for planetary health derive from engagement with people at local level, including young people, women, workers and social groups that are often marginalised from voice.

Community meeting, Kenya,   with permission © S Juma and EQUINET , 2009

With political timelines that go well beyond electoral frameworks, active aware citizenship was raised at the Summit to be a vital driver of the momentum, dialogue and institutional investments needed to realise the imagining of future wellbeing. The world is more interdependent and influenced by global forces. Equally, however, this century brings unique opportunities for making connections, new approaches to learning and decision making that did not exist in the 1900s, giving greater opportunity for local agency in meeting planetary challenges.

"I'm always thinking about this very famous TED talk…Two years ago they discovered this 16-year-old boy in Mozambique who had been traveling vast distances to get where there was a computer in a library connected to Wi-Fi and reading about windmills. He became fascinated, and built a windmill that powered electricity for his household. And the whole village was so amazed that he built another one, and his whole village became the first electrified village in his entire province of Mozambique. And the TED people pooled their money and sent him to MIT". Summit delegate, January 2013

It is cause for both celebration and apprehension that a future of sustained health lies within possibility and within our own hands.

There are some who think that we will as humanity fail to pursue the values and actions needed for our own or planetary health, bringing about the collapse of both. There are some who think we will not act meaningfully unless we experience a profound shock.

"So human beings can work together only after – really, really work together, seriously work together maybe only after the third world war." Suwit Wibulpolprasert, Ministry of Public Health Thailand, 2013

There are others who see in the energetic idealism of youth, in the unique abilities of humanity to embrace change, to invent and soar past our boundaries, in the desire for social dignity and the capacity to dream, that we have the possibility of creating, and blundering a purposive way to a shared future of sustained health.

What do you think?

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