The Health Futures Project

Key developments affecting the future of health in Europe 2017-2037

Information for Scenario Generation Workshop
more people living with one or more chronic/long term conditions.
pressure on pensions, health care and other social services
more people are over 80 overall population shrinks in size as it ages
dramatically fewer working age people to support and care for older people

ew attitudes to death and dying emerge
recognition that health services need to shift to prevention/promotion.

more intergenerational households and complex caring responsibilities

Longevity

lifestyle diseases start to erode improvements in morbidity and mortality made in past decades

birthrates continue to fall across Europe
couples delay having children

Birthrate

increasing economic-pull migration between EU countries and regions

Migration

EU migration to cities causes depopulation of some rural areas

Demography

international migration continues due to climate change economic conditions and conflict

exacerbated by climate change and economic decline

high levels of need for mental health support can be overlooked
an increasing proportion of refugees are women and children

SOME UNCERTAINTIES
• Will distribution of migrants across EU counterbalance population shrinkage? Will it be in the ‘right’ places?
• What will be the stance of EU countries on immigration? Will public attitudes harden or soften?
• Will migration (or threat of it) induce greater EU harmonisation? Is migration stoppable?
• Will migration patterns show ebbs and flows over time? Why?
• Will older people conform to projected patterns of morbidity or will ‘80 be the new 50’? Will some social groups benefit more than others?
• Will vested interests prevent health systems adapting quickly enough to cope with demographic shifts in demand?
• Older people expect to work longer – will there be employment for them?
• Will some kind of ‘assisted dying’ be facilitated?

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Climate Change

- Increased deaths from flooding due to rising sea levels and heat
- Extreme weather events increase in frequency
- Ticks, food related infections and tropical diseases become more prevalent
- EU disease control measures patchy
- Costs and environmental concerns stimulate and growth of interest in recycling and innovative design of ‘green’ products
- Energy efficiency higher priority – but potential short term outage despite tech. solutions
- Micro generation, diverse sources of green energy storage and transmission become increasingly important and available
- Raw materials like phosphorus and rare earth metals become increasingly scarce
- Air pollution levels fall slightly but continuing problem for respiratory health
- Legal challenges to air pollution trigger major shifts in policy toward pollution controls & transport
- Air Quality

The Environment

- Influences attractiveness of cities for work and homes
- Some uncertainties
  - How might the effects of climate change on human health be distributed across the EU?
  - Will there be greater recognition of the links between planetary and human health? If so what are the triggers?
  - Will there be sufficient public concern about the environment to lead to timely mitigating action?
  - Will there be improvements to community resilience to environmental changes and the impacts on health? If so how?

Energy and Raw Materials

- Increased deaths from heat = elderly and v. young most affected
- Indirect effects will be felt in increasing food and water scarcity
- Global warming continues even if carbon emissions controlled - pace will slow
**Employment and work**

**Impact of technology**
- robotics, automation and big data replace jobs in wide range of sectors – including agriculture, law, finance and administration and industrial processes
- stimulates new job types
- rapid pace of technological change means need for ongoing training and skills development through working life
- more flexible, part time work and frequent changes of jobs/career – and fewer people in traditional full time employment
- enables greater worker mobility but also more surveillance

**Diversity of Workers**
- growth of contingent labour – work with low pay, no protection or social security benefits
- increasing mix of generations, ethnicity, gender and values in workplaces
- businesses and workplaces may not be well adapted to responding to the different needs and expectations of the ‘new’ diverse workforce

**Consequences for mental ill health**
- human skills like empathy, listening, prioritization, communication will be more valued
- areas of key skill gaps as well as high levels of unemployment and underemployment
- meaning of a ‘job’ is rethought solutions like ‘guaranteed basic income’ or ‘shared security accounts’ may become mainstream

**Work patterns**
- rapid pace of technological change means need for ongoing training and skills development through working life
- more flexible, part time work and frequent changes of jobs/career – and fewer people in traditional full time employment
- enables greater worker mobility but also more surveillance

**Some uncertainties**
- How will demographic trends fit with changes in work and employment e.g. jobs for older people and labour to care for them?
- What will societies with less work, more automation and ‘contingent labour’ look like – how do we prepare people?
- What will be the impact on mental health?
- How will shifts in employment opportunities affect patterns of migration?
- Will mismatch between education and skills required by business continue?
- Do the ‘new’ jobs eventually plug the gap left by the old?
EU challenged by ‘emerged’ economies (especially China) who own infrastructure manufacturing and food assets.

AI, robotisation, 3D printing, infotech, driverless vehicles cause rapid shift in nature of industrial and service sectors

low economic growth for EU foreseeable but wide variations within - north & west vs south & east

continuing rise in costs of welfare services, especially health - driven by demography, public expectations and ‘reach’ of medical technology

economic benefits of having a healthy population become indisputable

ECOLOGICAL TRENDS

Some European countries could be better positioned than others to support/exploit this

Economy

Social Consequences

Economic

SOME UNCERTAINTIES

• How will EU respond to stronger global economies?
• Will economic trends limit EU work on health policy?
• Will a transition from pursuit of ‘growth’ to ‘welfare’ happen? If so how will it be managed in practice?
• Would it have to be EU wide?
• Will pressure on welfare lead to more austerity or will other solutions be found?
• Will there emerge national/EU controls on wealth and income differentials for individuals/regions?
• Would a shift to a ‘Circular Economy’ require a consistent ‘policy push’ or will it happen incrementally?
• Will the public realise the benefits of reduced employment? Will they care more about health and wellbeing than a well paid job?

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Simulators, VR and AI reduce need for ‘on the job’ training
changes in employment and technology mean ‘serial’ retraining common
AI shifts roles from professional to technical reducing training times

path leading from university education to jobs narrows
shift to part-time and ‘in work’ training
new accrediting organisations emerge
education crosses borders – surviving universities have international reach

on-line access to knowledge reduces need for teachers and university campuses as centres for learning

SOME UNCERTAINTIES
- Will the university sector adapt or wither?
- Will ‘big data’ change the role of universities as research centres? If so, how?
- Will people trust AI decisions about their health?
- How will knowledge-based professions – especially in health - respond to disempowerment?
- Will society become more ‘individualised’ or will we see a growth in ‘community’?
- Will social attitudes to migration harden or will migrants be accommodated into communities? Will it be the same for national, EU and ‘foreign’ migrants?
- Will stigma of mental ill health reduce?
- Will EU values concerning health be compromised?
- Will ‘nudging’ reduce unhealthy behaviour amongst the disadvantaged? Will the state or corps be the strongest ‘nudgers’?
- Will there be a public abreaction to a paternalistic ‘nanny state’? Will this be induced/exploited by corps?

high expectations/ demands on curative science and health services

increase in ‘healthy behaviour’ but big differences between social groups in attitudes and access
for some, dying early with co-morbidity ‘normalized’
web informs public and patients about health issues, growth in patient power
‘standards’ /facts means people can be ‘reliably misinformed’

related distrust of formal institutions and elites to bring about change

distrust of evidence and of experts - supplanted by ‘folk’ knowledge
infotech makes it easier for governments and corps to ‘nudge’ attitudes and behaviour

positive effects limited by wide variations in health literacy

Public Attitudes about Health
but EU reluctance to address public health issues

driven by mutually beneficial deals in trade, research, corp regulation, security and service delivery,
driven by nationalistic political sentiment and particular economic interests

state responds by shifting from monitoring public opinion to using new media to actively influence it

growth of ‘people power’ – public more able to set political agenda

Politics and Civil Society

SOME UNCERTAINTIES
• Will regions collaborate across national borders within EU rules?
• Will the poor and weak be repressed and side-lined or is there a paradigm shift amongst politicians – so the poor and weak are ‘accommodated’?
• Is the shift pragmatic or altruistic – does it matter?
• Will it take a crisis to prompt this shift? If so what?
• Given the speed and unpredictability of shifting political fortunes, where will power and influence over civil society reside?
• How will public participation in mainstream democratic processes change? Will there be alternatives?

old party structures replaced by a more ‘diverse’ political landscape

growing civil unrest - social order threatened in some places

State interest in ‘health in all policies’ grows as instrument of social cohesion

big corps take interest in delivering ‘health and wellbeing’

emerging scepticism and potential challenge to large corps’ investment in care and treatment

Politics

 Relationships: EU Members

 Relationships: People and Politicians

 Relationships: Health and Wider Economy
‘smart’ cities emerge where energy, transport and climate are sustainably managed

urban ‘fringes’ of cities sprawl with implications for services, health and environment

rising sea levels threaten many European cities

current trend continues - by 2050 over 75% of Europeans live in the city

increasing social segregation – concentrations of diverse poor in remote city suburbs with limited access to jobs/ amenities

availability of affordable homes/ social housing fails to match demand in cities

large numbers of 18-30 year olds have to live with parents for longer

over time new technologies reduce costs and time of building sustainable houses dramatically

But driverless car systems commonplace

investment in transport infrastructure continues to lag behind demand

‘hyperloop’ trains emerge to offer faster cleaner inter-urban travel

‘clean’ mass transit systems commonplace

But driverless car systems commonplace

demand for inter-urban and suburban transportation increases

SOME UNCERTAINTIES
• What will trigger cities to contemplate adoption of healthier environments?
• Can older city centres be adapted? If not, will they be abandoned?
• Can the suburbs also be ‘greened’?
• Will there be demonstrable health benefits of ‘smart’ cities?
• Will financial and planning institutions be nimble enough to adopt new cheap and sustainable house building technologies?
• Will we see pollution-push depopulating big cities?
• Will regulation/technology clean up cities fast enough to prevent this?
• Could pollution and unemployment make city life unattractive enough to result in rural repopulation?
• Will new technology mean people won’t travel to congregate in work places?

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biotech developments offer ‘cures’ for such things as common cancers, Alzheimer’s and autism

proliferation of personalised treatments matching individual and disease genetic profiles

enables more care at home and more citizen responsibility for health

initially surgical and social applications but more likely to augment rather than replace clinical and caring workforce

kit becomes digitized and mobile so can be operated by individual citizens or ‘assitants’

neural implants offer potential to enhance brain function

antimicrobial resistance (bacterial,fungal,viral) accelerates - unreliable pipeline of effective alternatives

3d printing allows personalized medicines printed to order on single tablet

‘organs’ on chips enable faster and maybe cheaper development of drugs and toxicity assessments

pipeline more opaque as multitude of smaller providers engage in product research – especially in Asia

counterfeits - some exact copies -available on the net

SOME UNCERTAINTIES

• Will uptake of new med tech developments across the EU remain patchy? Will potential for efficiency in procurement be realised?
• Will governments decide to give stronger market signals about what they want (and will pay for) or will supply continue to be industry led?
• Will health care systems continue to pursue med. tech. cures or will they shift focus to prevention and to health?
• Could biotech shift from ‘treating’ small symptomatic populations to focussing on improving public health?
• Will expense of new technologies widen health inequalities between rich and poor people/states? Will new biotech mean more or less expensive health care?
• Will ethical, regulatory and professional constraints slow or halt uptake?
• Will safe ‘lifestyle’ drugs be developed /available for things like happiness, obesity and memory?

common surgical procedures become more risky, impractical or costly

threat to Big Pharma’s IP

potential for improved medication compliance but also implications for regulation of compounds which can be accessed over the internet

medicines and their production
	diagnostics and devices

telemedicine, telecare and robotics

Med. Tech. and Pharma

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Social Media

**SOME UNCERTAINTIES**

- Who will control access to our personal and aggregate health data?
- Will consumers challenge who uses their health data and for what?
- Will those who write the search algorithms (like Google) end up controlling Big Data?
- Will monitoring of health behaviour be used to control access to health care/benefits?
- Will there be institutional resistance to adoption of disruptive technology?
- Will developing economies and ‘leapfrog’ the developed by being able to innovate faster and because of less regulation and weaker institutional resistance?
- What effect will Big Data have on our professional classes – especially in health?
- Will people learn to recognise fake news/evidence/experts?
- Will Governments be able to regulate/tax crypto-currencies? What if they aren’t?
- Will there be major differences in exploitation of infotech between EU countries and regions?

Big data and informatics
increasingly likely to be characteristic of the poor
sections of public hyper-conscious about health implications of diet
more meals prepared/eaten outside home in non-social settings
climate change threatens patterns of supply
shortages (even temporary) prompts panic buying, fear and racketeering
public lead politicians over unsustainability of meat production
differences in faith/culture make adoption of healthy behaviours challenging for some groups
in some parts of EU, dealing with water shortages will precede any problems with food!
increasing interest in fitness and health in some social groups - could widen inequalities
controls/regulation difficult due to ease of production and internet drug market
consumption grows and range of drugs expands
Pharma finds 'safe' obesity drugs
food 'enriched' with pharmaceuticals - the new 'healthy eating'
alternative forms of protein found (insect/bacterial/fungal/synthetic)
big challenges for EU food policy productionist vs ecological
globalisation makes supply chains complex and difficult to regulate
obesity increasing threat to human health
no 'gold standard'
contradictory nutritional advice confuses public