Shaping sustainable health care

A framework on impact of PM in National Health Systems

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A complex challenge

As seen, health care providers are currently faced with an extremely complex challenge characterised by rising demand, increasing cost and insufficient funding.

Never as much as today have health care systems been interested and involved with the **potential benefits deriving from innovations**

Innovation is a key feature that organisations have to incorporate as a condition to offer sustainable and efficient solutions

Personalised medicine is a disruptive innovation

SUSTAINING	**An innovation that does not affect existing markets**	
	Continuous	An innovation that improves a product in an existing market in ways that customers are expecting.
	Discontinuous	An innovation that is unexpected, but nevertheless does not affect existing markets.

DISRUPTIVE	**An innovation that creates a new market or expands an existing market by applying a different set of values, which ultimately (and unexpectedly) overtakes an existing market**	
	Main features are:	a) improved health outcomes b) create new professional culture c) serve new groups or have new products/services ("create new markets") d) create new players e) disorders old systems

European Commission

EXPERT PANEL ON EFFECTIVE WAYS OF INVESTING IN HEALTH

(EXPH)

Disruptive Innovation

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Considerations for health and health care in Europe

The EXPH adopted this opinion at the 13th plenary meeting of 29 February 2016 after public consultation

Walter Ricciardi
Rapporteur

Disruptive innovation in health care

The EXPH understands disruptive innovation in health care as:

“a type of innovation that creates new networks and new organisations based on a new set of values, involving new players, which makes it possible to health improve outcomes and other valuable goals, such as equity and efficiency. This innovation displaces older systems and ways of doing things”.

Main characteristics of disruptive innovations

A disruptive innovation can often be characterised by some (or all) of the following elements:

Provide improved health outcomes

Create new services and overcomes challenges regarding accessibility to existing or new services

Lead to cost-effective methodologies that improve access

Promote person-centred health delivery

Empower the patient/person

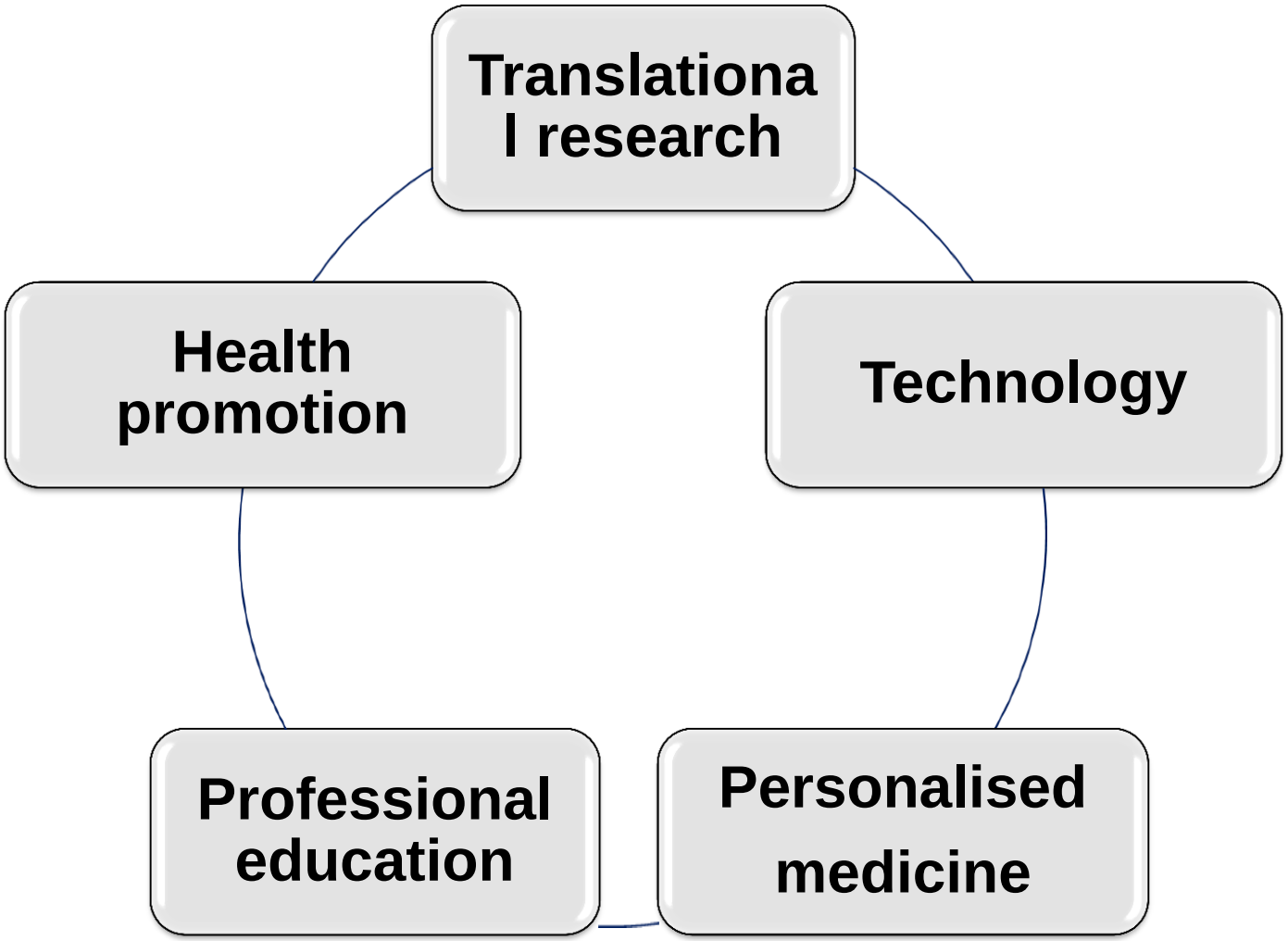
Create new professional roles and capacities

Create new sets of values for the health workforce, patients, citizens and community

Introduce transformative cultural change

Disorder old systems

5 strategic areas for disruptive innovations



Barriers to disruptive innovations

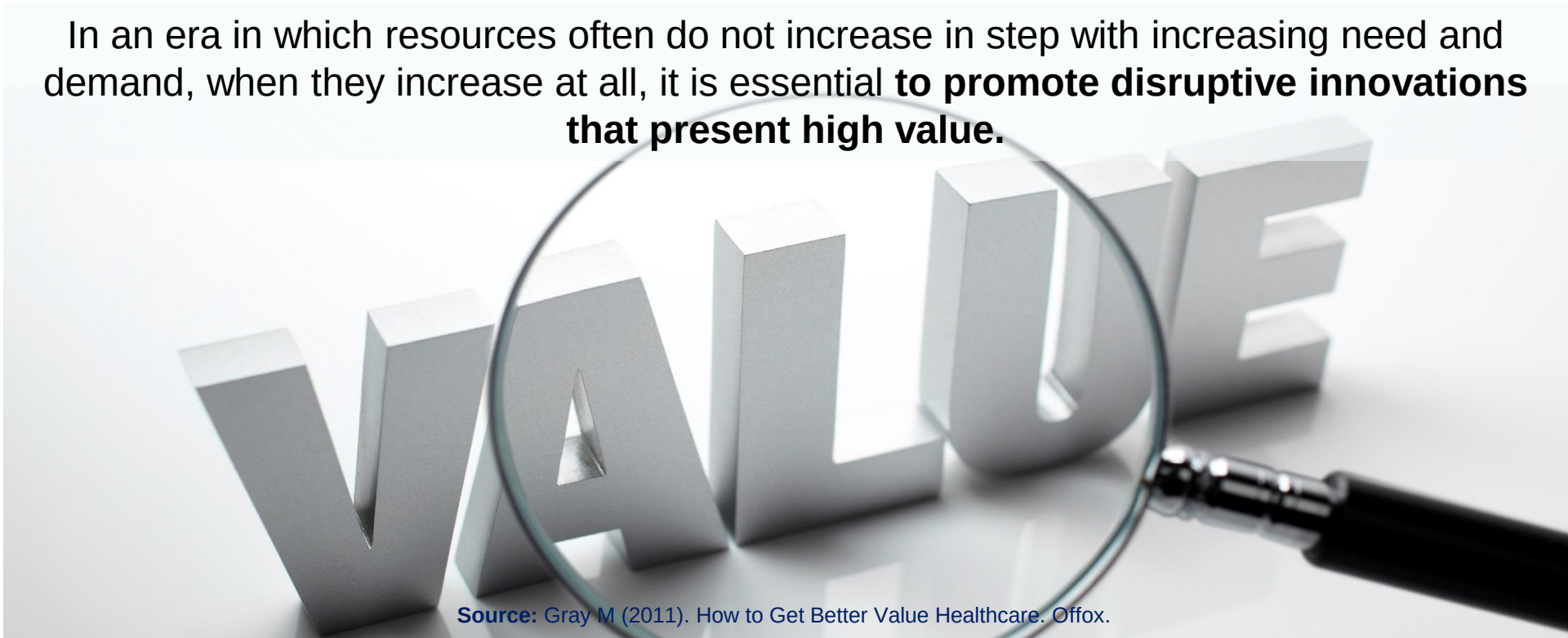
1.	Workforce barriers	Opposition, reluctance to change; Cultural barriers, workforce silos; Lack of training and motivation; Communication between care providers and harmonisation of care often inadequate
2.	Patients / persons barriers	Cultural barriers; Lack of training of end-users/strategy towards health literacy; Mobility support
3.	Organisational/institutional barriers/inadequate networks and processes	Lack of realistic business model; Procurement process; Lack of adequate technical analysis and planning; Lack of managerial support; Inadequate information systems; No strategy to decommission services; Lack of interoperability between technological solutions; Difficulty to coordinate different authorities; Organisational model of our institutions (mainly based on a traditional "bureaucratic management"-principle with a comment-and-control approach
4.	Economic and legal barriers	Investment on infrastructure, technology and maintenance; Prices;; Economic context; Corruption and economic incentives for vested interests; Lack of retail market; Regulatory barriers that obstruct the emergence of new professions, products and services; Reimbursement controls; Payment models.
5.	Lack of political support	Lack of political buy-in / leadership
6.	Lack of evaluation	Lack of monitoring and evaluation techniques, tools and methodologies

High value in disruptive innovations

SOME DISRUPTIVE INNOVATIONS COULD BE CHARACTERIZED BY THE FACT THAT THEY ALSO PRESENT **HIGH VALUE**

In health care, high value can be defined as **meeting patient expectations at the level of the individual or providing the better outcomes in the most cost-effective way in the short or long-term at the population level**.

In an era in which resources often do not increase in step with increasing need and demand, when they increase at all, it is essential **to promote disruptive innovations that present high value.**



Source: Gray M (2011). How to Get Better Value Healthcare. Offox.

Policy issues

The implementation of any disruptive innovation, should carefully address the issues of relevance, equity (including access), quality, cost-effectiveness, person- and people centeredness, and sustainability.

Policy makers should analyse how to enhance the enablers and to address the already identified possible barriers for implementing a disruptive innovation within a health system.

When identifying the areas of introduction of a disruptive innovation, it is necessary to take into consideration the aspects regarding its:

- Projected Impacts
- Context
- Feasibility

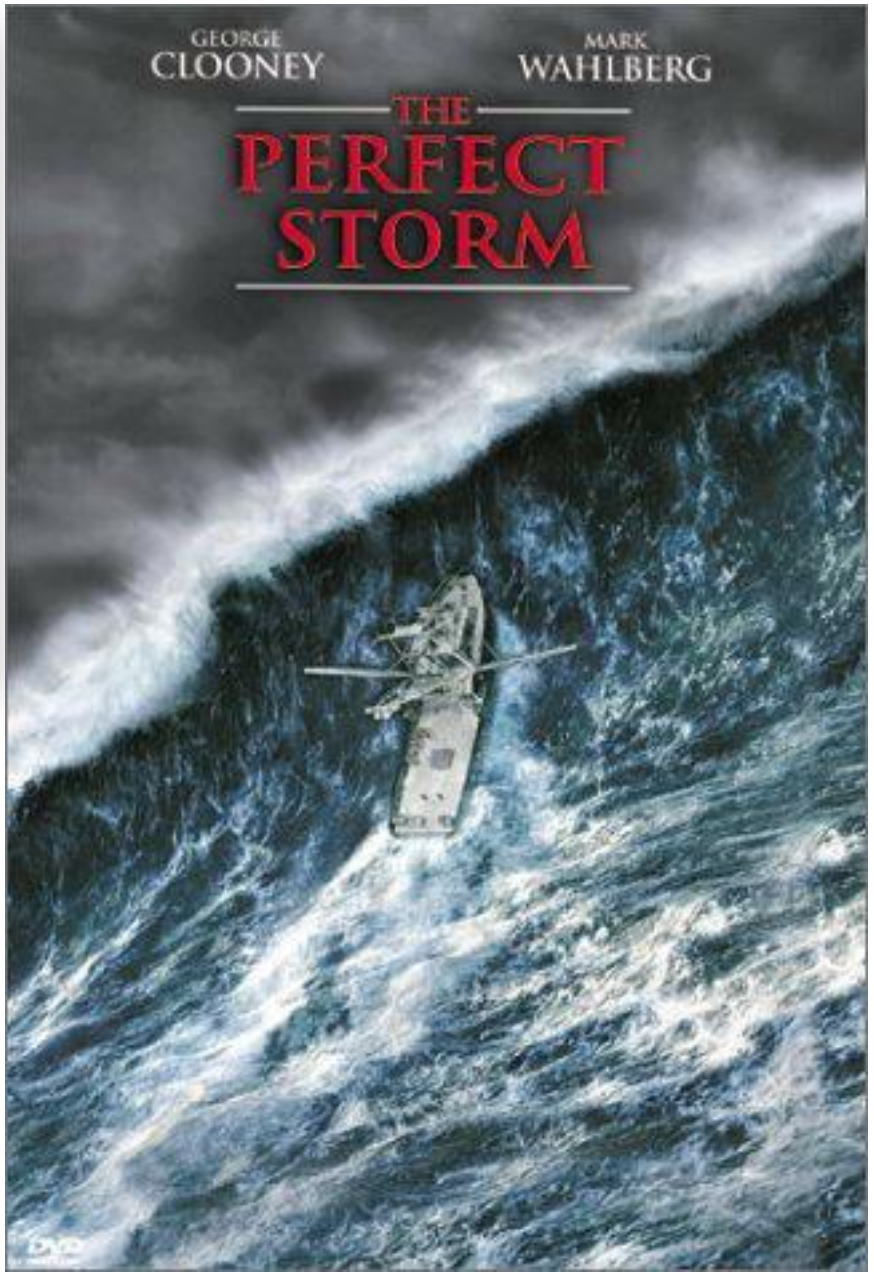
Three Decades of Dynamic Change in Health Systems 1980s – 2010s

- **Changes in *information technologies* (electronic medical record, e-health capacities, tablet-based patient management, centralized Big Data)**
- **Changes in *citizen expectations* (choice of provider, equal and rapid access, privacy)**
- **Changes in *patient expectations* (participation in decision-making, second opinions, international quality standards, patient rights)**
- **Changes in *payment systems* (public and private): case-based payment, penalties for poor outcomes (re-admission, re-treatment), volume based contracting**
- **Changes in *provider configuration* (consolidating hospitals and services, integrating health and social care)**

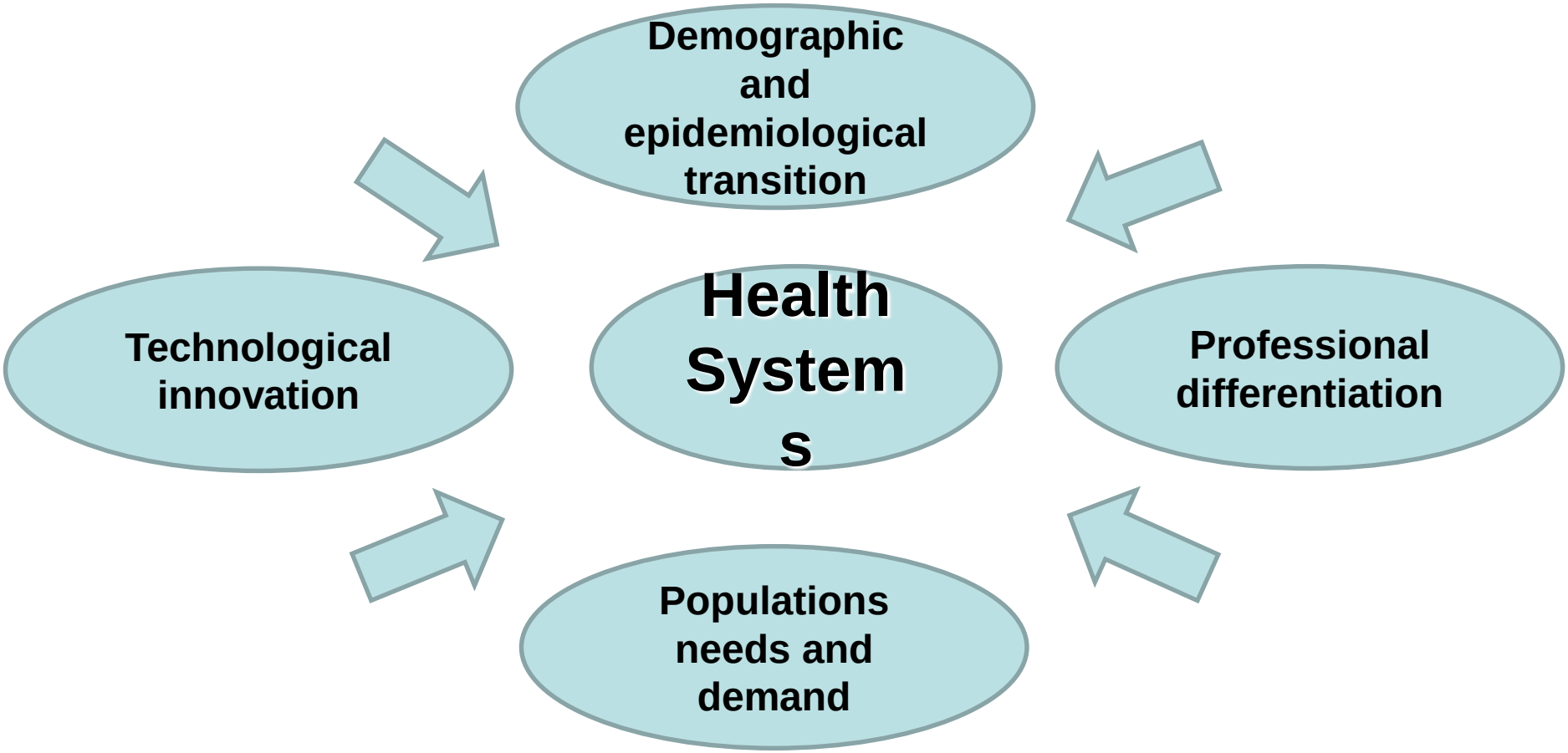
The perfect storm

perfect storm" is an expression that describes an event where a rare combination of circumstances will aggravate a situation drastically.

The term is also used to describe an actual phenomenon that happens to occur in such a confluence, resulting in an event of unusual magnitude.



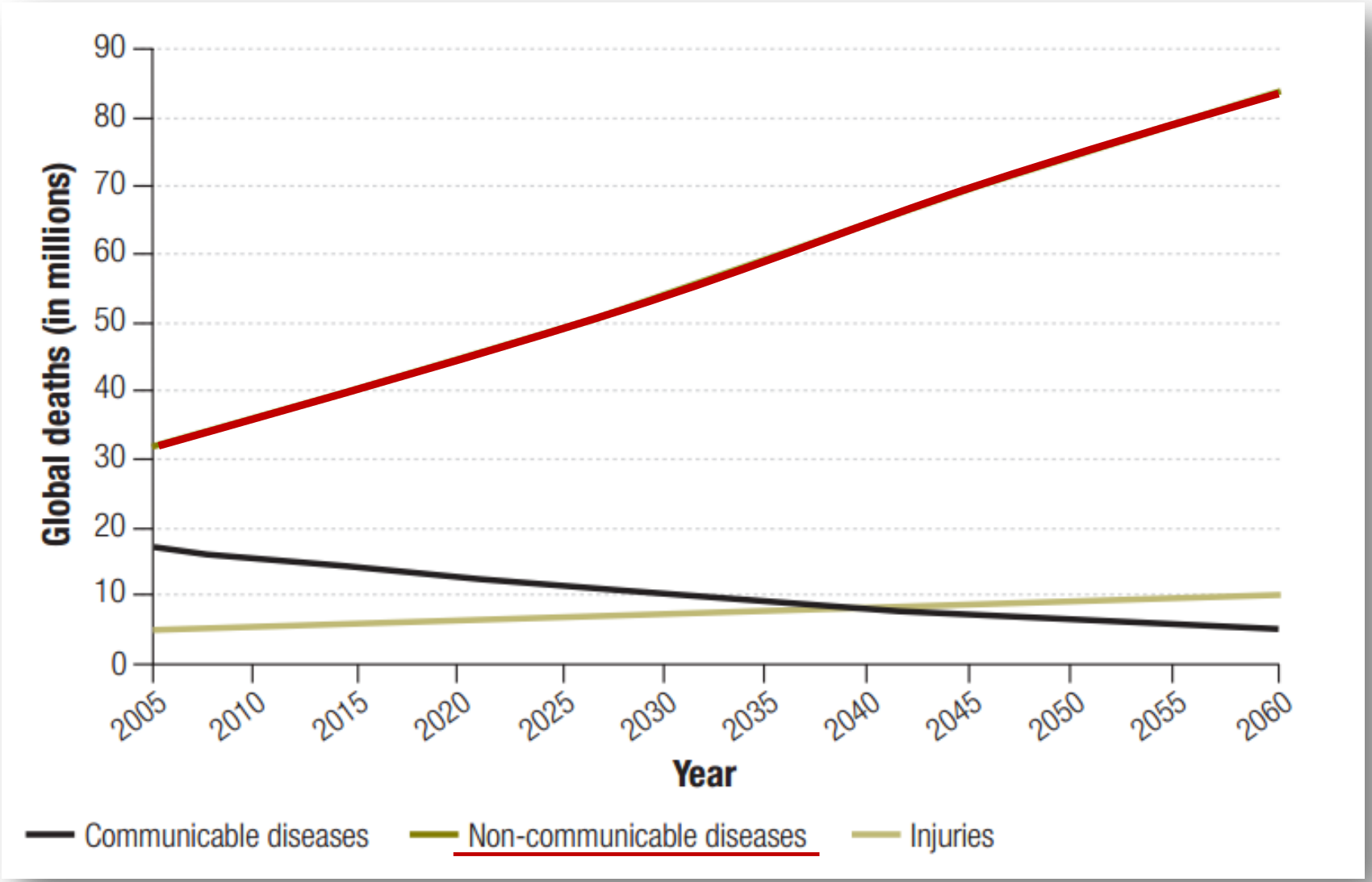
The waves of demand and supply



70s

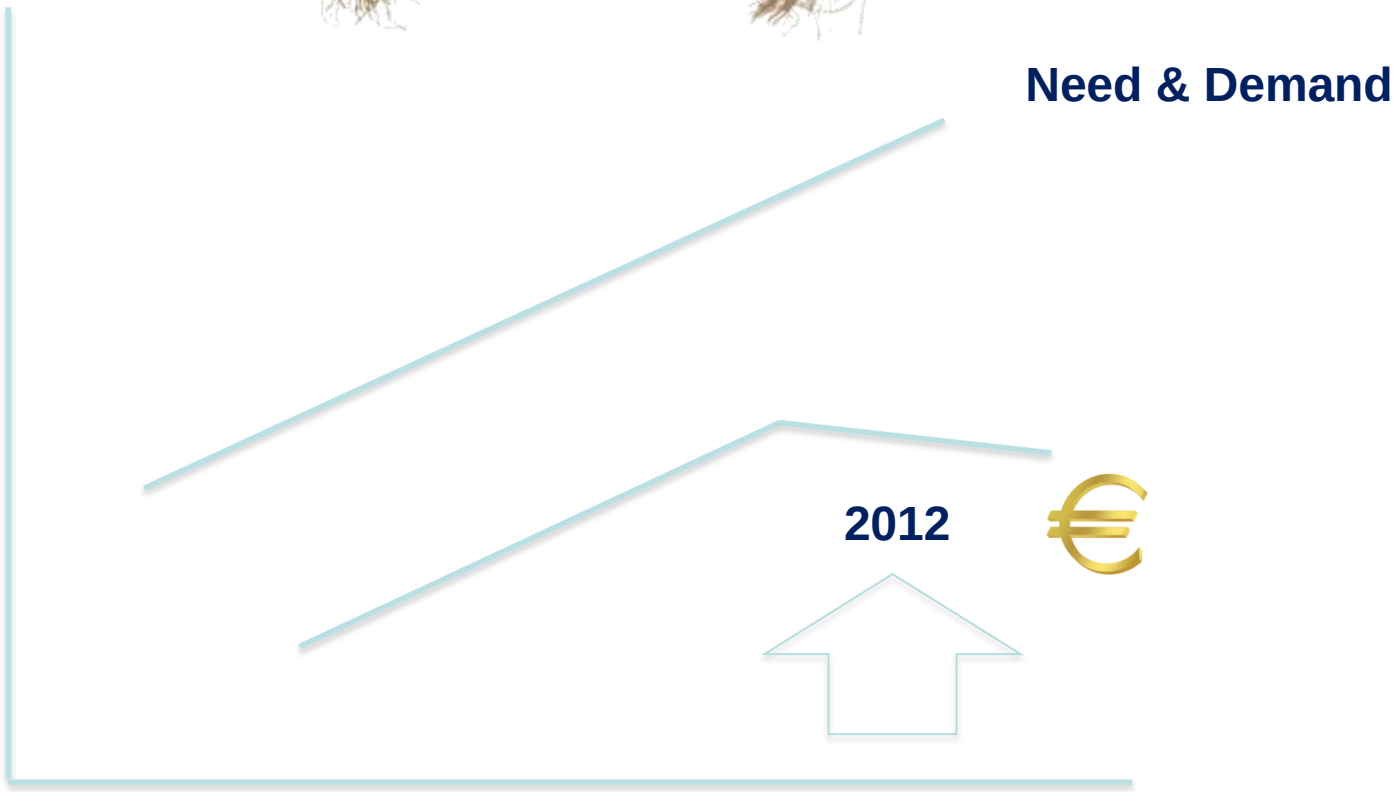
2016

Chronic diseases

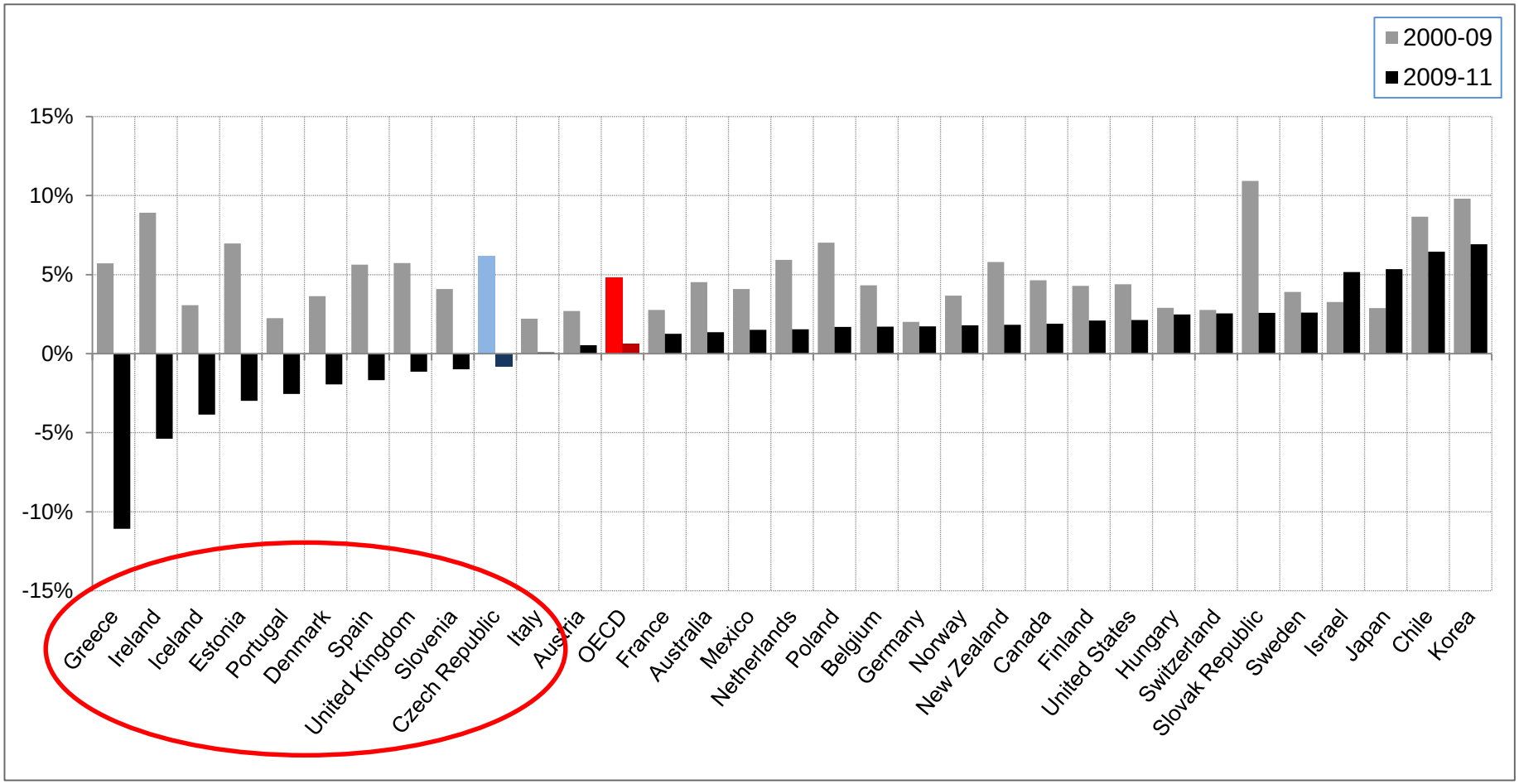


Source: Projections of global health outcomes from 2005 to 2060 using the International Futures integrated forecasting model. WHO bullettin 2011.

Scarcity of resources



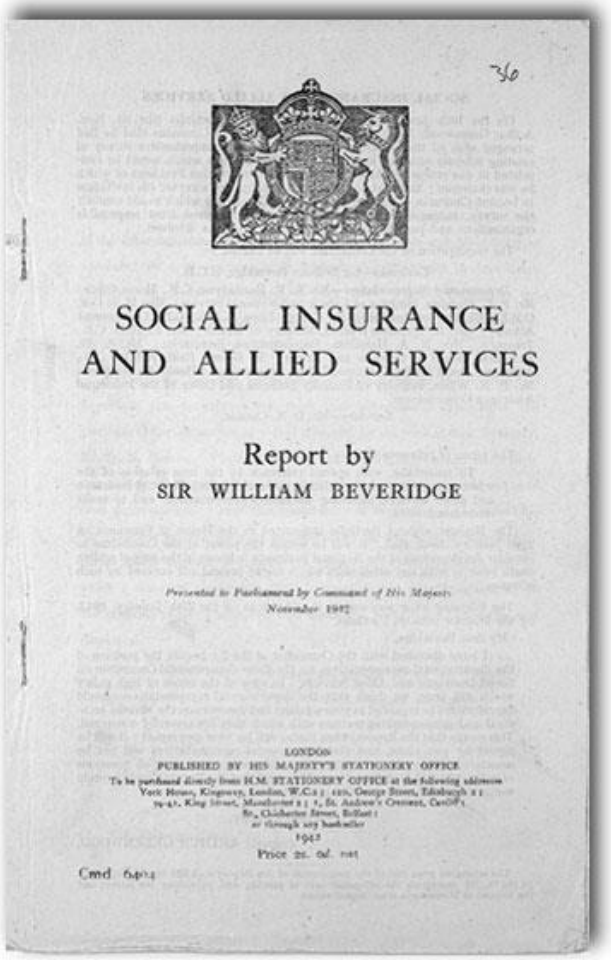
Health expenditures



Fonte: OECD Health Data 2013

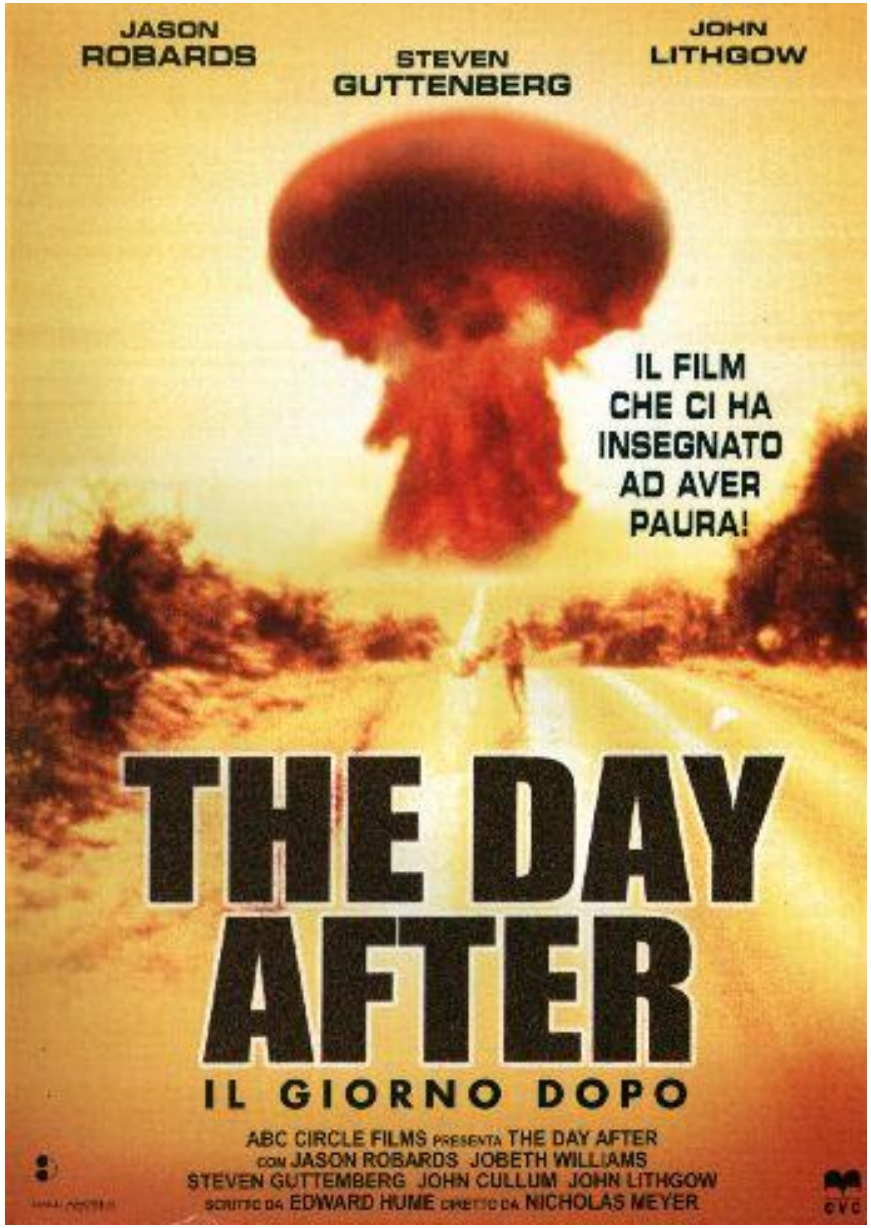
The European social model

- A system of transfers
  - From rich to poor
  - From young to old
  - From employed to unemployed
  - From healthy to ill



The day after

No more European social model

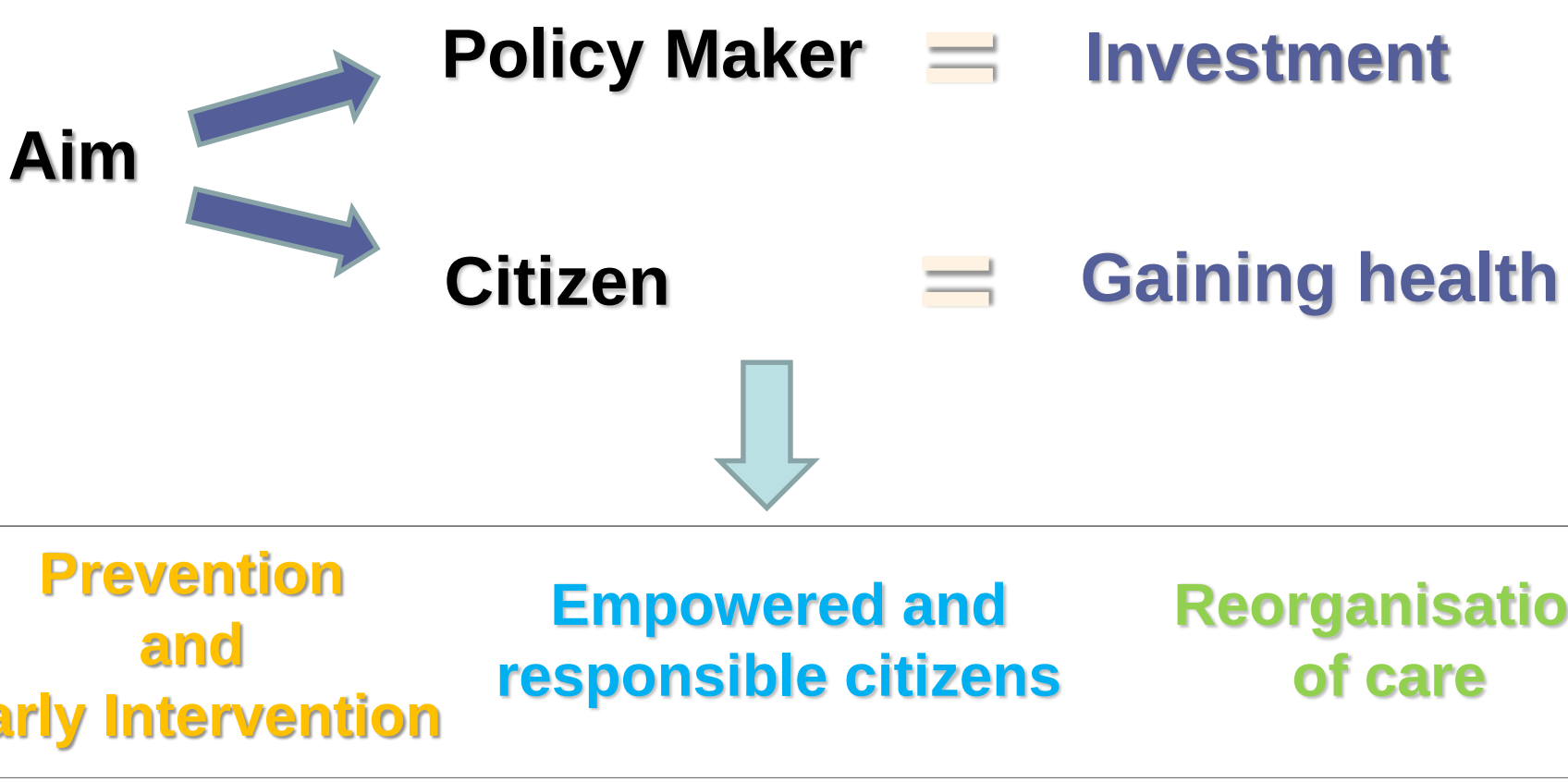


Health sustainability

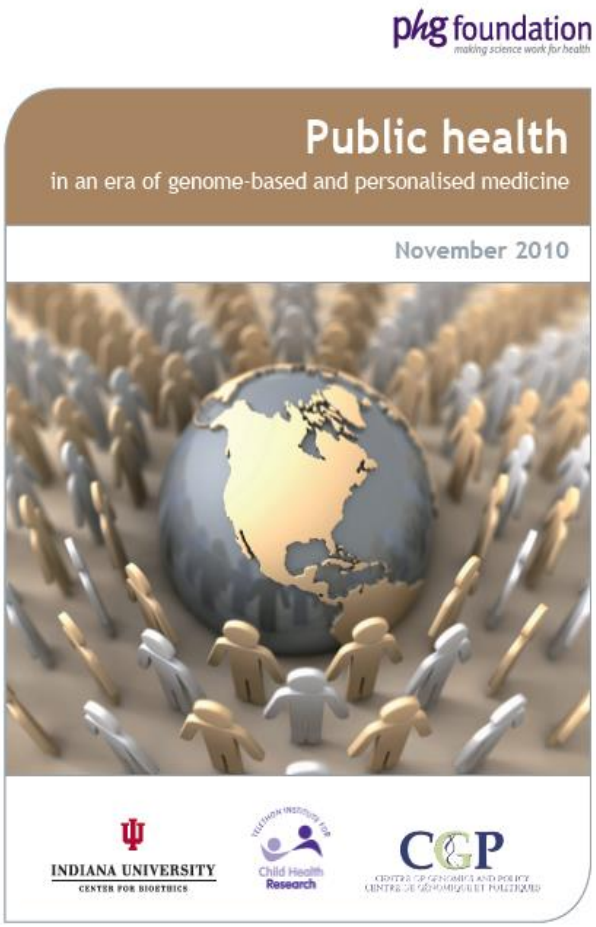
“There are two kinds of problems in life. Big ones and small ones. The small ones money can solve. The big ones money cannot solve”

Will Roberts

Healthcare Sustainability



The report



AIM: To bring together international experts across academic disciplines and geographical divides **to debate how genomic and personalized medicine is likely to impact upon tho development of public health in the 21˚ century, particularly over the next decade.**

This report is based on a meeting convened at Ickworth House in Suffolk, UK, on 10-14 May 2010. We are indebted to the workshop presenters and participants for contributing their time and expertise.

The meeting was co-organised by four partners: the PHG Foundation (Cambridge, UK), the Centre for Bioethics (Indiana University, USA), the Centre of Genomics and Policy (McGill University, Canada) and the Telethon Institute for Child Health Research (University of Western Australia). A full list of delegates is provided at the end of this report.

We gratefully acknowledge the following for their financial support for the Ickworth meeting: PHG Foundation; the Center for Bioethics (Indiana University, Indiana) through a grant from the Richard M. Fairbanks Foundation; the Centre of Genomics and Policy (McGill University, Montreal); and the Telethon Institute for Child Health Research (with support from the Mr Stan and Mrs Jean Perron and the University of Western Australia).

This report can be downloaded from our website:
www.phgfoundation.org

Final remarks

The major challenge for public health genomics is to generate an evidence base to demonstrate when use of genomic information in public health can improve health outcomes in a safe, effective and cost-effective manner.

The implementation of evidence-based genomic applications could:
1. maximise health benefits and reduce disparities;
2. reduce harms and unnecessary health care expenditures from premature and/or inappropriate use of gene/disease information;
3. provide a means of evaluating public health interventions, and;
4. deliberatively foster capacity building, growth and development by convening and sponsoring population-based research (both through biobanking and the creation of large datasets and cohorts).

Who is going to pay?

The NEW ENGLAND JOURNAL of MEDICINE

GETTING READY FOR GENE-BASED MEDICINE

'How much will the expanded use of genetic information further escalate the cost of healthcare, and who will pay for that?'
Varmus, 2002

'Overly enthusiastic expectations regarding the benefits of genetic research for disease prevention have the potential to distort research priorities and spending for health' *Willett W, 2002*

'...in this era of increasing concern about healthcare costs, it will be impossible to consider the implication of genomic medicine withouth considering the economic implications.'
Phillips KA, 2004

THE AMERICAN JOURNAL OF MANAGED CARE

Genetic Testing and Pharmacogenomics: Issues for Determining the Impact to Healthcare Delivery and Costs

Stagnating Economic Growth After 2008

Western Economies Still Stalled (6 years after 2008)

•*Low/No Growth*

•*Low/No Job Creation*

•*Negative Interest Rates/Low Capital Investment*

Revenue Consequences for Health Sector:

- **Tax Revenues Fall/Stop Growing**
- **Health Sector Personnel Unions Respond**

(English junior hospital doctor strikes Spring 2016)

(English GPs to vote on strike vote Spring 2016)

(Finnish labor unions required to work 72 hours more per year)

(French unions reject Hollande's labor market re-structuring reforms)

- **Rising Individual Financial Responsibility**:

Co-payments, Family Responsibility

(Netherlands: 2015 Long Term Care Reform)

Potential Context Challenges Over Next Years

- **Changing Geo-Politics**
  - Europe: Higher Military Expenditures
  - BREXIT
- **Changing Economies**
  - China Slowdown
  - Negative Interest Rates
- **Changing Institutions**
  - Increasing Centralization (to State level)
  - Increasing De-centralization (to Municipal level)
- **Changing Demography**
  - Migration

The perfect healthcare system…

- Does not exist in any one country in the world
- Depends on cultural values and expectations – what is ‘perfect’ in one country may not be so in another
- Is less easy to describe than the long list of challenges and short-comings

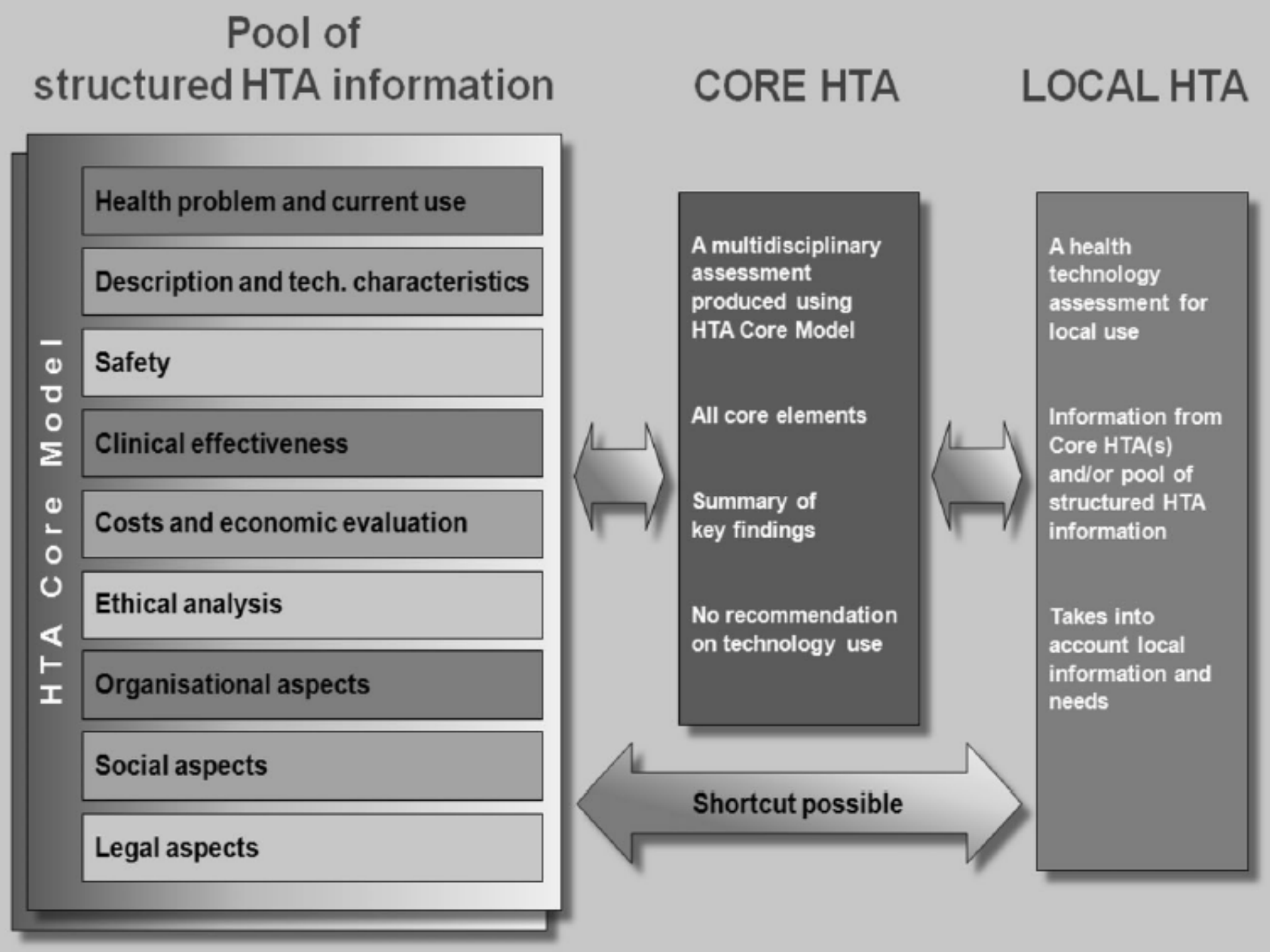
That said, if we could start from scratch, with an empty sheet of paper, the perfect system might look like:

- Values of universal healthcare, as in Italy and the UK
- Health promotion, as in Nordic countries
- Funding levels of Switzerland
- Patient choice, as in France and Germany
- Excellent, innovative primary care, as in Israel
- Fabulous mental health and approach to well-being, as in Australia
- Patient and community empowerment, copied from Nigeria and Kenya
- Brilliant approach to care for the ageing population, as in Japan
- State-of-the art communication, information flows and technology, as found in Singapore
- R&D of the US and innovative thinking of India

(with special thanks to Jenny Simpson and Mark Brittnell, whose book ‘In Search of the Perfect Health System’ set me off on this train of thought)

But, the reality of healthcare means that we do not have:

- The luxury of blank sheets of paper or plentiful resources
- ‘Down time’ to stop doing what we do, think about it and start doing something different
- Freedom from political and economical drive/interference


Pool of structured HTA information
CORE HTA
LOCAL HTA
HTA Core Model
Health problem and current use
Description and tech. characteristics
Safety
Clinical effectiveness
Costs and economic evaluation
Ethical analysis
Organisational aspects
Social aspects
Legal aspects
A multidisciplinary assessment produced using HTA Core Model
All core elements
Summary of key findings
No recommendation on technology use
A health technology assessment for local use
Information from Core HTA(s) and/or pool of structured HTA information
Takes into account local information and needs
Shortcut possible

Policy issues

If there are no incentives for adoption and diffusion of a disruptive innovation, this will not happen.

Cultural change, training and motivation are necessary instruments in adopting an innovation. But the reality is that innovation creates winners and losers, and the losers will be resistant.

For this reason, it is important to involve the health professions in the process of creation and diffusion of (disruptive) innovations

Conclusions

Disruptive innovations as personalised medicine

can be an important instrument in European policies

provide a new and different perspective that tends to reduce complexity in favour of the empowerment of the citizen/patient

should be seen by policy makers as possible new methods of dealing with old issues

Health systems should be responsive to innovations and allow promising disruptive innovations to be tested, evaluated, and implemented. This requires the presence of responsive and open-minded systems

We all face the same challenges…

And if we were to share our strengths we would be better able

to meet the demands of future generations….

Thanks for your attention