EXPH

Opinion on
Disruptive Innovation

Expert Panel on Investing in Health

Provides independent non-binding advice on effective ways of investing in health

Established by Commission Decision 2012/C 198/06 following the Council conclusions of June 2011 'Towards modern, responsive and sustainable health systems'; renewed in 2017.

Expert Panel Opinions to date	Requested by	Adoption
Best practices when commissioning from private providers	ECFIN	May 2016
Typology of health policy reforms	ECFIN	May 2016
Disruptive Innovation	SANTE	Feb 2016
Access to health services	SANTE	Feb 2016
Cross-border Cooperation	SANTE	July 2015
Competition among health care providers in the EU	ECFIN	May 2015
Quality of health care / Patient safety	SANTE	Oct 2014
Definition Primary Care	SANTE	July 2014
Criteria to assess performance of health systems	WPPHSL - Sub-group on HSPA	Feb 2014
Assessment of a PPP study	SANTE	Feb 2014

The Panel recently has finalised opinions on benchmarking access to healthcare, performance assessment of primary care, and innovative payment models for high-cost innovative medicines.

http://ec.europa.eu/health/expert_panel/home_en

European Commission

EXPERT PANEL ON EFFECTIVE WAYS OF INVESTING IN HEALTH

(EXPH)

Disruptive Innovation

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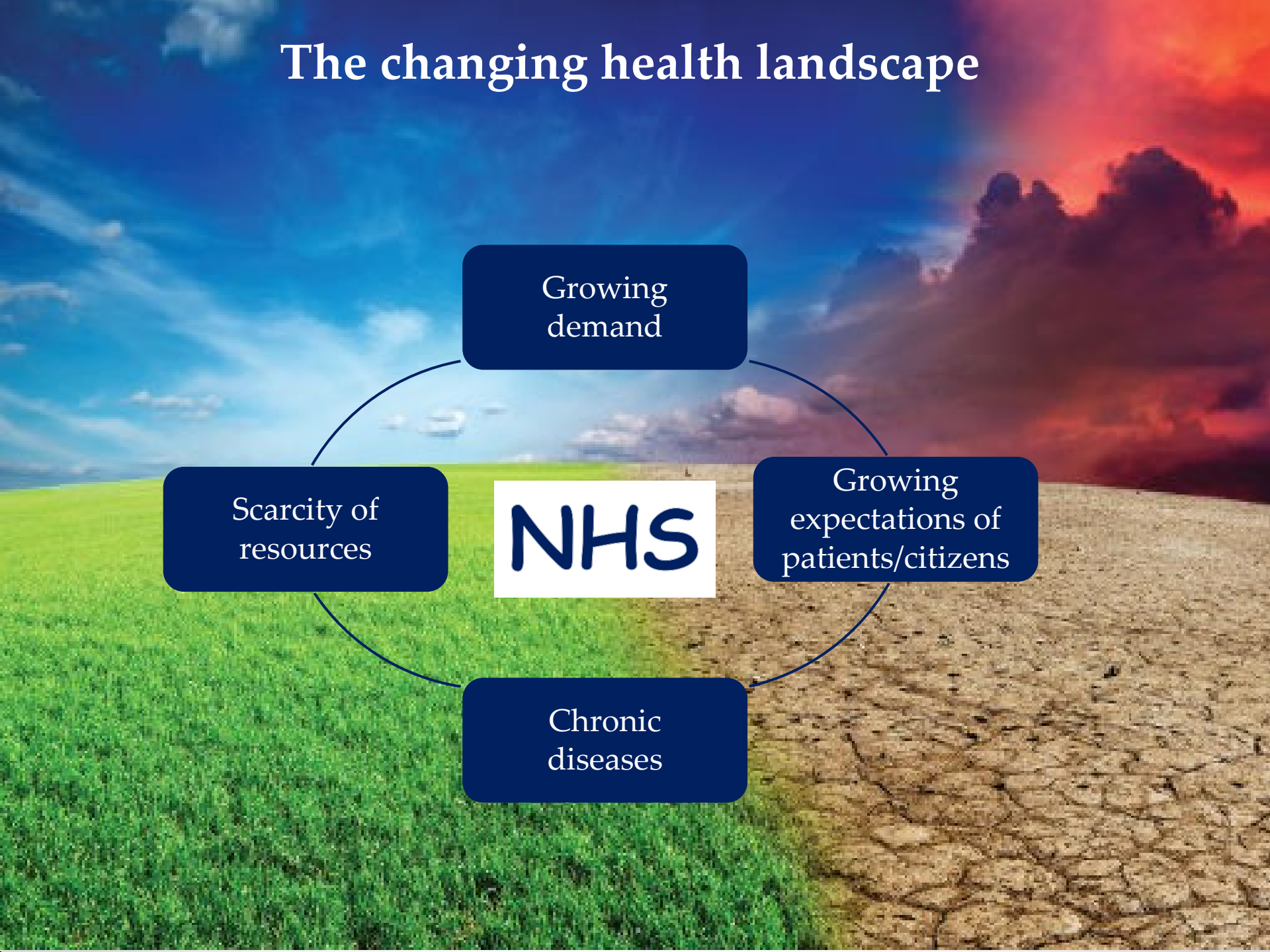
Considerations for health and health care in Europe

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

Jan De Maeseneer, Chair EXPH
Walter Ricciardi
Rapporteur

The changing health landscape



70s

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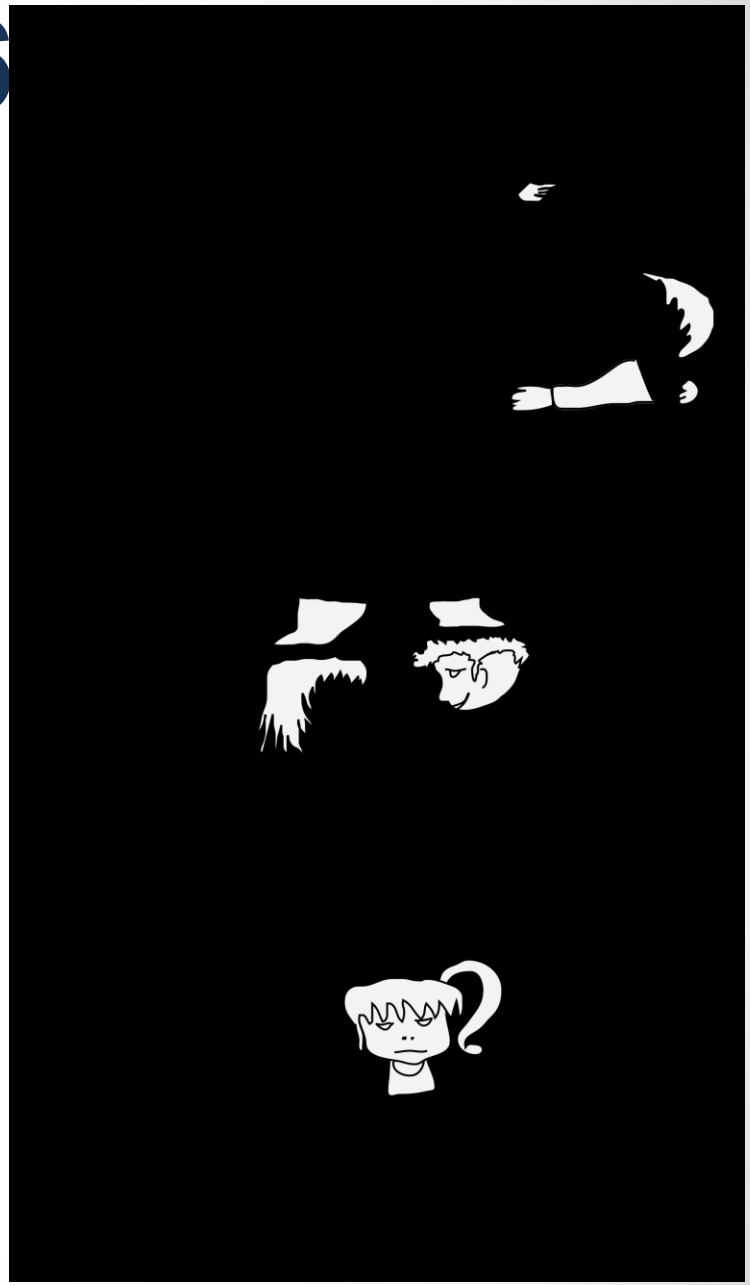
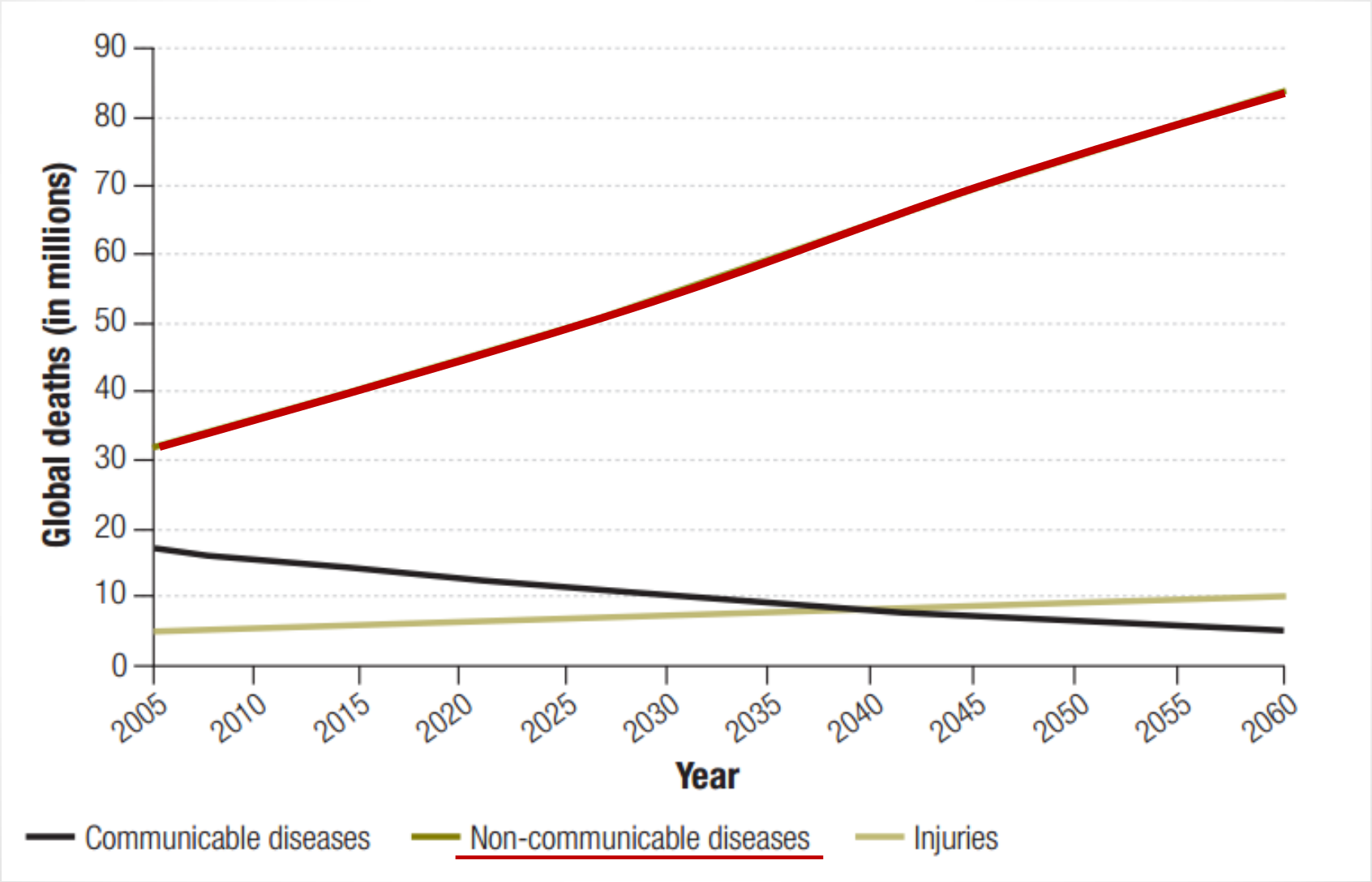


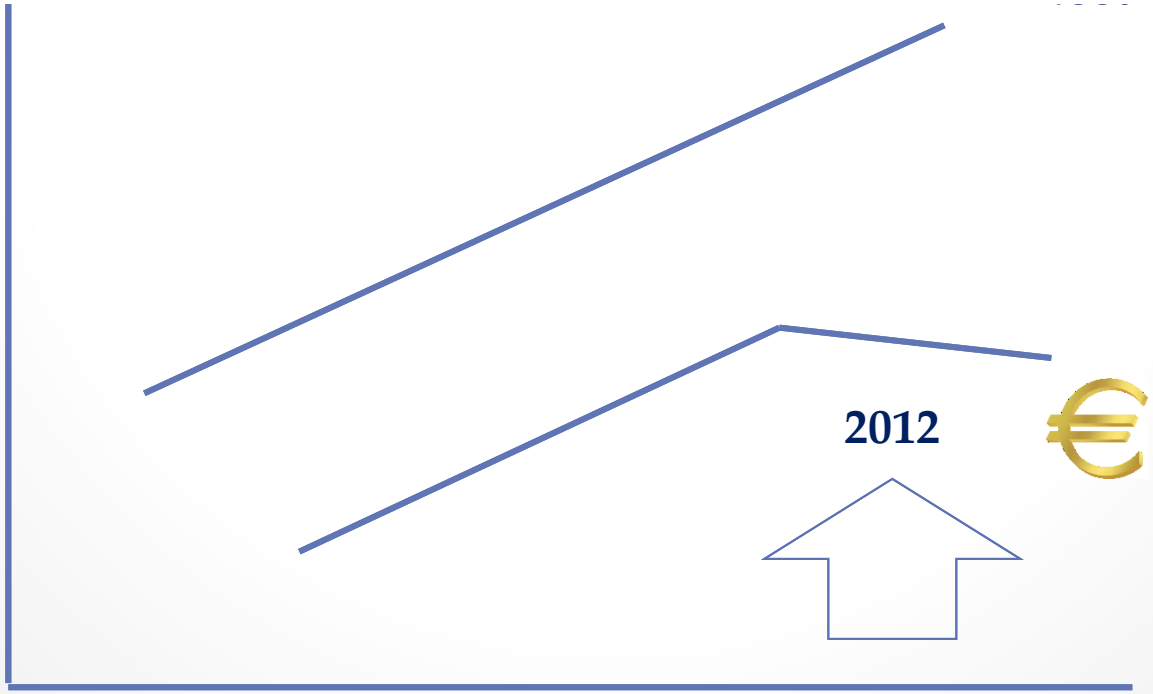
Chronic diseases



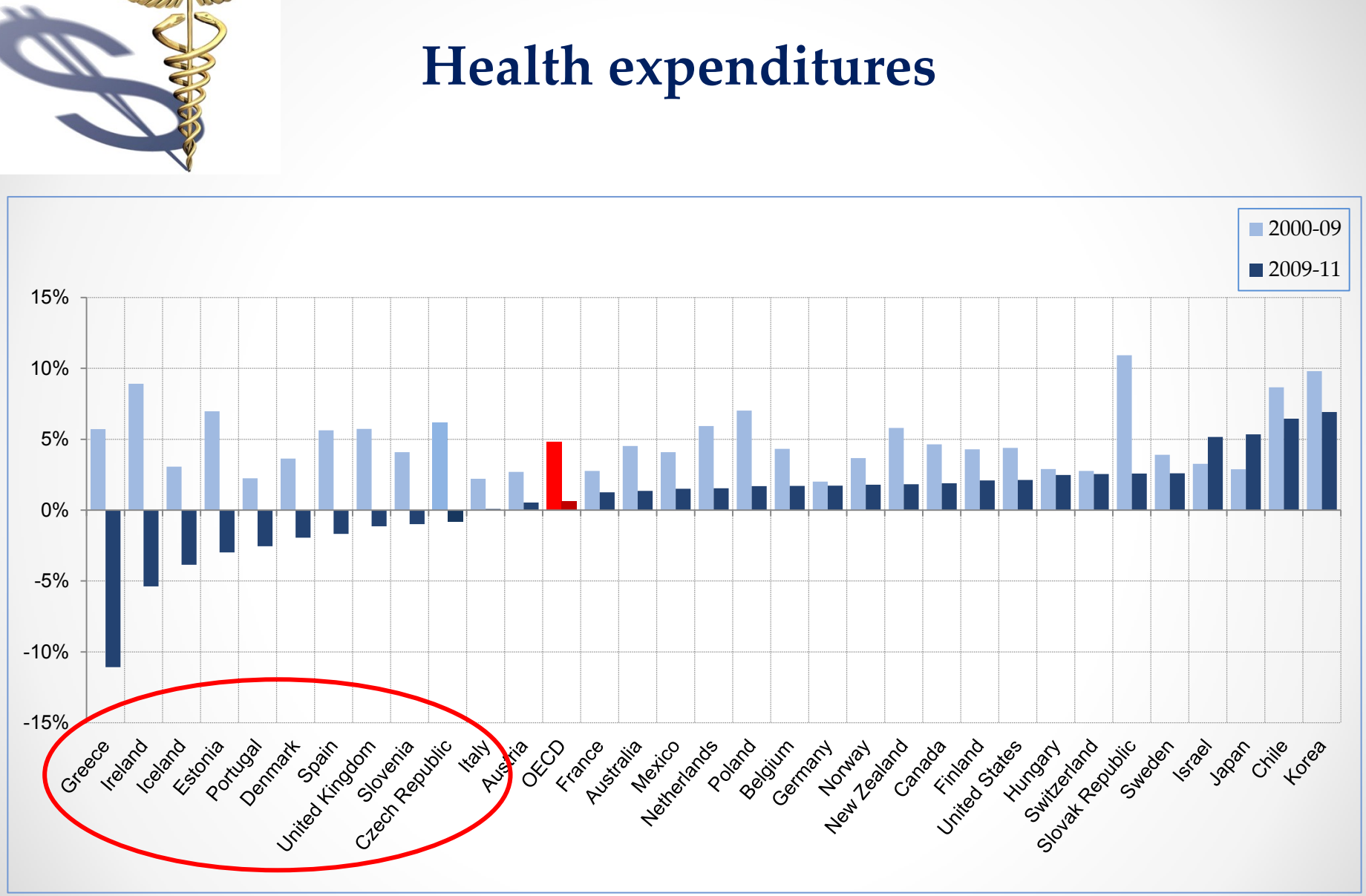
Source: Projections of global health outcomes from 2005 to 2060 using the International Futures integrated forecasting model. WHO bullettin 2011.

Scarcity of resources

and



Health expenditures



Fonte: OECD Health Data 2013

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

Innov

The process of translating an idea or invention into a product/service that creates value or for which customers or society or insurance will pay

The application of better solutions that meet new requirements, unarticulated needs, or existing population needs

Something original and more effective and -as a consequence- new, which "breaks into" the market or society

Types of 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

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

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.

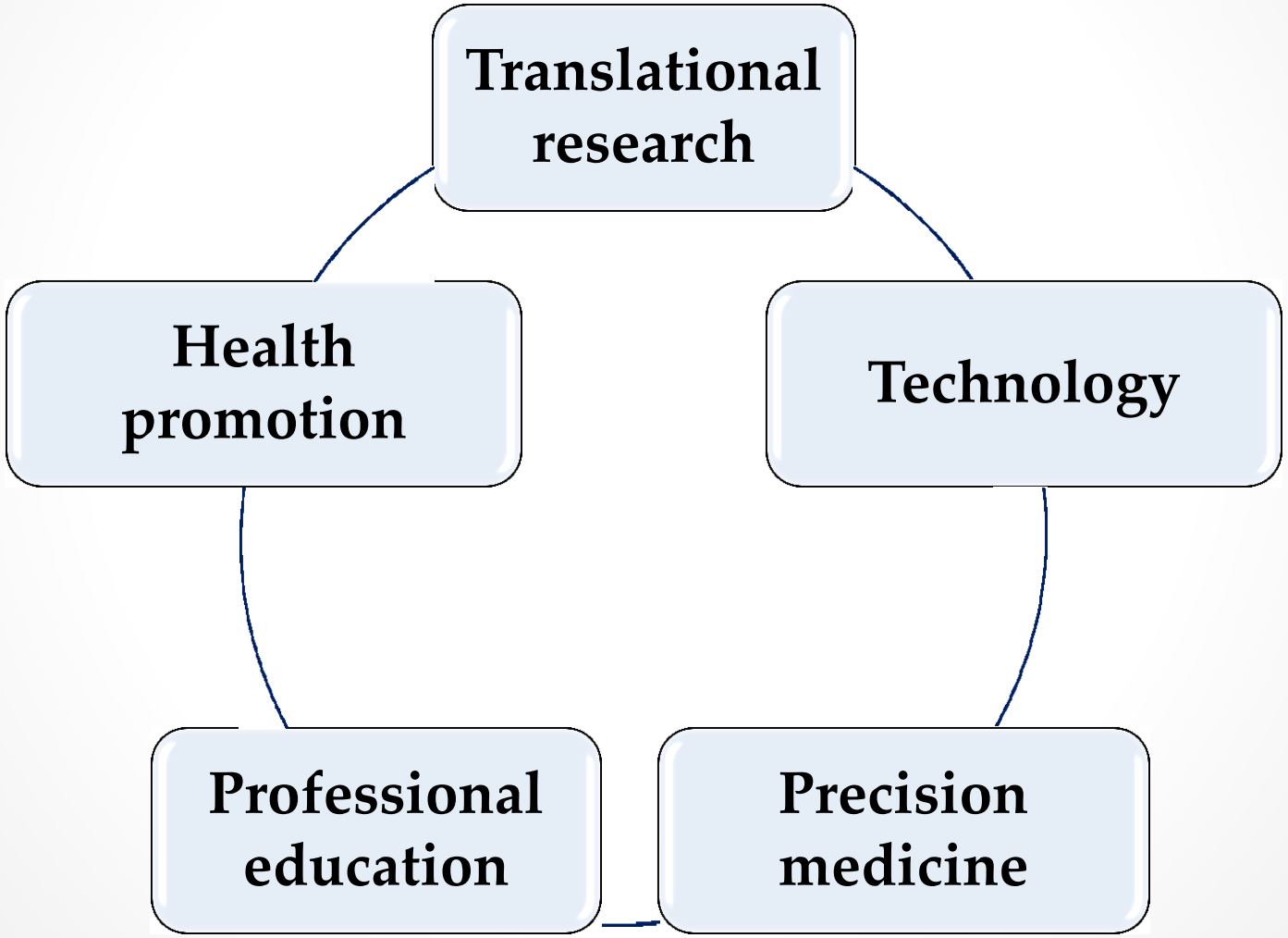
Examples illustrating the taxonomy

TECHNOLOGICAL	ORGANISATIONAL
• Antibiotic development • Anti-ulcer drugs • Minimal invasive surgery • New and more effective treatment for HCV	• Community-based mental health • Population based accountable organisations • Integrated care
PRODUCT AND SERVICES	**HUMAN RESOURCES**
• Development of palliative care • Patient-centred care	• Diabetic patient self-management

Policy implication

		DIFFICULTY OF ADOPTION		
		Easy adoption	**Average adoption**	**Difficult adoption**
EXPECTED DESIRABILITY OF INNOVATION	**Low desirability**	No policy action required	No policy action required	No policy action required
	Average desirability	Monitor adoption, stimulate adoption	Stimulate adoption, focus on main barriers	Strong stimulation of adoption, reducing/removing main barriers
	High desirability	Monitor and actively stimulate adoption	Strongly stimulate adoption, actively reducing/removing barriers	Very strong policy action required to overcome all barriers to adoption

5 strategic areas for disruptive innovations



Translational research

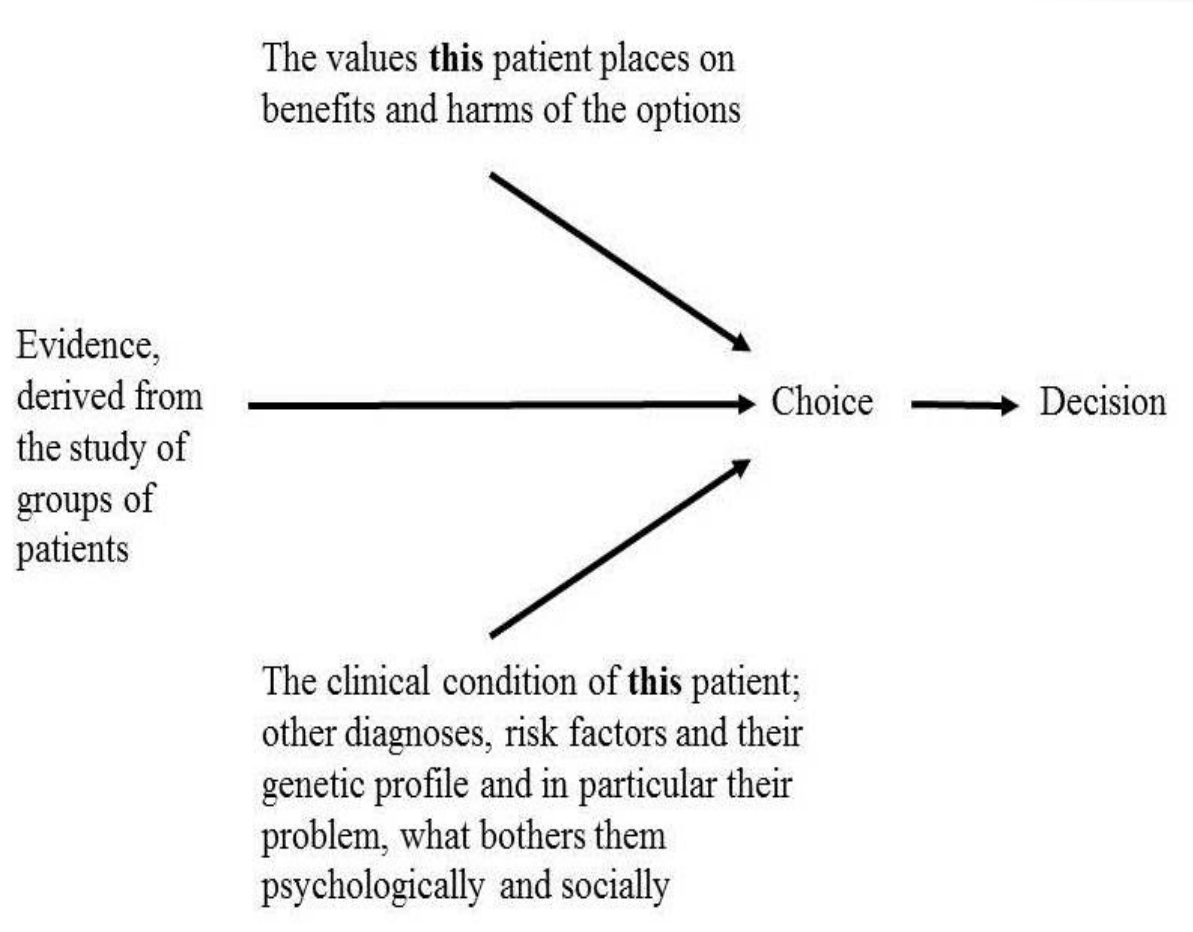
EXAMPLES

	Basic Discovery	Proof of concept	Clinical development	Practice adoption: EBM	Community assessment	Global Health
Sustaining - Continuous	Discovery of ACE-inhibitors	Testing of new drugs	Stenting for CHD	Guidelines for chronic conditions	Task shifting between health professionals	Worldwide access to ARV
- Discontinuous	Discovery of penicillin	First heart transplantation	Mobile health, patient led	First meta-analysis	Citizen/patient participation in health care	Health care as a human right
Disruptive	Insights in DNA-mRNA-Protein synthesis	Testing of general anaesthesia in humans	Shift from disease-oriented to goal-oriented care (Mold et al, 1991)	Implementation of guidelines as the basis for quality care: from experience to evidence	Intersectoral action for health equity	Eradication of smallpox
Characteristics	create new market	create new players; create new markets	disorder old systems; improved health outcomes	new professional culture	disorder old systems	improved health outcomes

Precision medicine

Precision medicine is defined as **customised health care based on individualised genomic risk information (biomarkers) which is referenced against population genomic data (biobank) and used to prevent, diagnose, and treat disease** (James JE, 2014).

The model for personalised decision making



Health and care professional education

Two perspectives:

Disruptive innovations have profoundly changed the history of health and care professional education

- At the beginning of the 20th century - f**irst generation of disruptive innovations**: more science-based curriculums for bio-medical sciences and public health related sciences
- After World War II - **second generation of disruptive innovations**: new pedagogic approaches such as student-centred learning and the use of "standardised patients" to train and assess students in practice
- Nowadays - **third generation of disruptive innovations**: focuses on patient and population centeredness, competency-based curricula, inter-professional and team-based education, IT-empowered learning (internet data-bases for knowledge exploration, interactive e-learning for problem-solving using virtual cases/simulation, game-based learning, etc.), policy and management leadership skills.

Health and care professional education as a potential enabler of disruptive innovations

Health promotion

The introduction of new health promotion approaches has brought a **transformational change** in how population health is understood and the range of mechanisms and strategies that can be used to promote health and well-being and reduce health inequities.

- Political commitment to implementing such approaches has been lagging in many countries
- The investment in health promotion typically pales in comparison to the resources and budgets allocated to health care
- Further capacity development in implementing evidence-informed actions into routine everyday practice is needed for disruptive innovations in health promotion to reach their full potential

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

Case studies

1. NEW AND MORE EFFECTIVE TREATMENT FOR HCV
2. COMMUNITY-BASED MENTAL HEALTH
3. POPULATION BASED ACCOUNTABLE ORGANISATIONS
4. ANTI-ULCER DRUGS
5. DIABETIC PATIENT SELF-MANAGEMENT
6. MINIMAL INVASIVE SURGERY
7. PATIENT-CENTRED CARE
8. THE SWEDISH REHABILITATION GUARANTEE

[The EXPH underlines that these case studies are used as relevant examples and should be intended as such. For each case study the problem, the innovation, the disruption, the benefit, triggers, adverse effects and costs have been described.]

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

Policy makers should also consider the importance of exploring new models of commissioning and financing for health services in the context of expanding some clinical roles to certain health professionals when those tasks and services are increasingly being assigned to them.

Research on disruptive innovations

MS and EU should

stimulate	invest	take into account	be informed on	support
the development of research focusing on "disruptive innovation“, both in basic and applied research	• more in translational research • in trans-disciplinary education and research at a pan-European level	the future challenges of the demographical and epidemiological transition stimulating research in multi-morbidity and person-centred care is of utmost importance, looking for ways to put the goals of the patient at the centre of the care delivery	possibilities to improve the care working in decentralised communities, better stimulating them towards innovation	the creation of "laboratories" for innovation, that study ways to include disruptive innovations at the level of primary, secondary and tertiary care

Conclusions

Disruptive innovations…

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

There may not be a "one size fits all" solution for monitoring, managing and stimulating the adoption of disruptive innovations

EXPH Opinion on Innovative payment models for high-cost innovative medicines

Paying for innovation that matters…

Three objectives to be achieved by payment model

- innovation “that matters” - incentives for innovation, with a growing concern with areas in need of new products
- that patients have access to innovation as soon as possible in a safe way
- health systems are financially sustainable.

Role of directing R&D

- Under decentralized R&D model based on patents: “compensation for the value of the innovation to encourage the development of products that are more highly valued than others because they address a more important therapeutic gap”
- In case of specific therapeutic gaps being identified, set different procedure (more centralized) to guide innovation on the gap
- Recognize that unplanned innovation will result from decentralized efforts
- Do not pay based on R&D costs incurred, as it stimulates process costs without guiding efforts to therapeutic gap

Summary

- The recognition that the current path of growth cannot be continued indefinitely leads to the search of new ways to ensure that innovation “that matters” is produced, that patients have access to innovation and that health systems are financially sustainable.
- It is unlikely that a single payment model will be optimal for all situations.
- broad principles should be observed (taking advantage of many discussions and documents)

What solutions does the Expert Panel propose?

As setting the price for new, innovative medicines is a dynamic process involving various factors, it requires a **revised health system design and more than one type of payment.** The expert panel therefore suggests defining a set of **basic principles**.

PRINCIPLES	ACTIONS
Using several mechanisms to **promote and reward** high value innovations	Identify **neglected areas** and launch international price initiatives
Setting better rewards for **higher therapeutic value** of new medicines in the context of health technology assessments (HTA)	**Assess value** of new products of uncertain benefit
Guaranteeing a better price and cost information and promote **transparency**	**Assess performance** of existing payment methods and ask for R&D costs, marketing costs and production costs
Strengthening the **bargaining power** of health systems	Fully tap the possibilities from innovative procurement; set buyers' clubs; and step up efforts **to encourage and reward innovation**

Thanks for your attention