



Expert Panel on Investing in Health



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

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'Towards modern,
responsive and
sustainable health
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renewed in 2017

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**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

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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**



Innovation

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



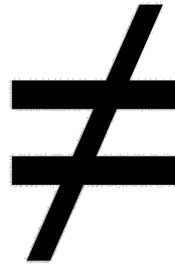
Innovation

INVENTION

Innovation refers to the use of a better and, as a result, novel idea or method

whereas

invention refers more directly to the creation of the idea or method itself



IMPROVEMENT

Innovation refers to the notion of doing something different

rather than

rather than doing the same thing better

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



Empower the patient/person



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



Create new professional roles and capacities



Lead to cost-effective methodologies that improve access



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



Promote person-centred health delivery



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**

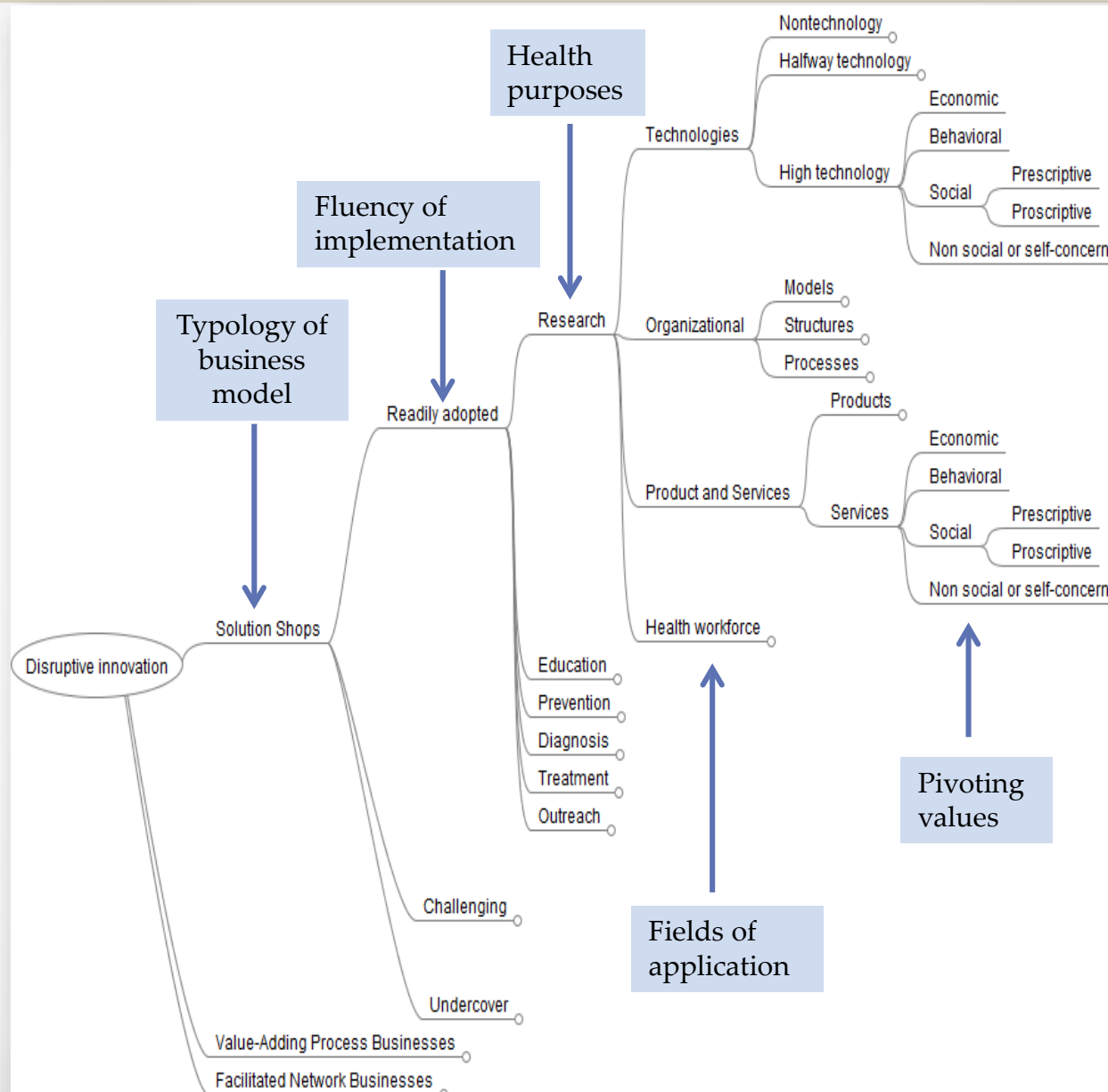


In health care, high value can be defined as **meeting patient expectations at the level of the individual or providing the better outcomes in the most cost-effective way in the short or long-term at the population level.**

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.**

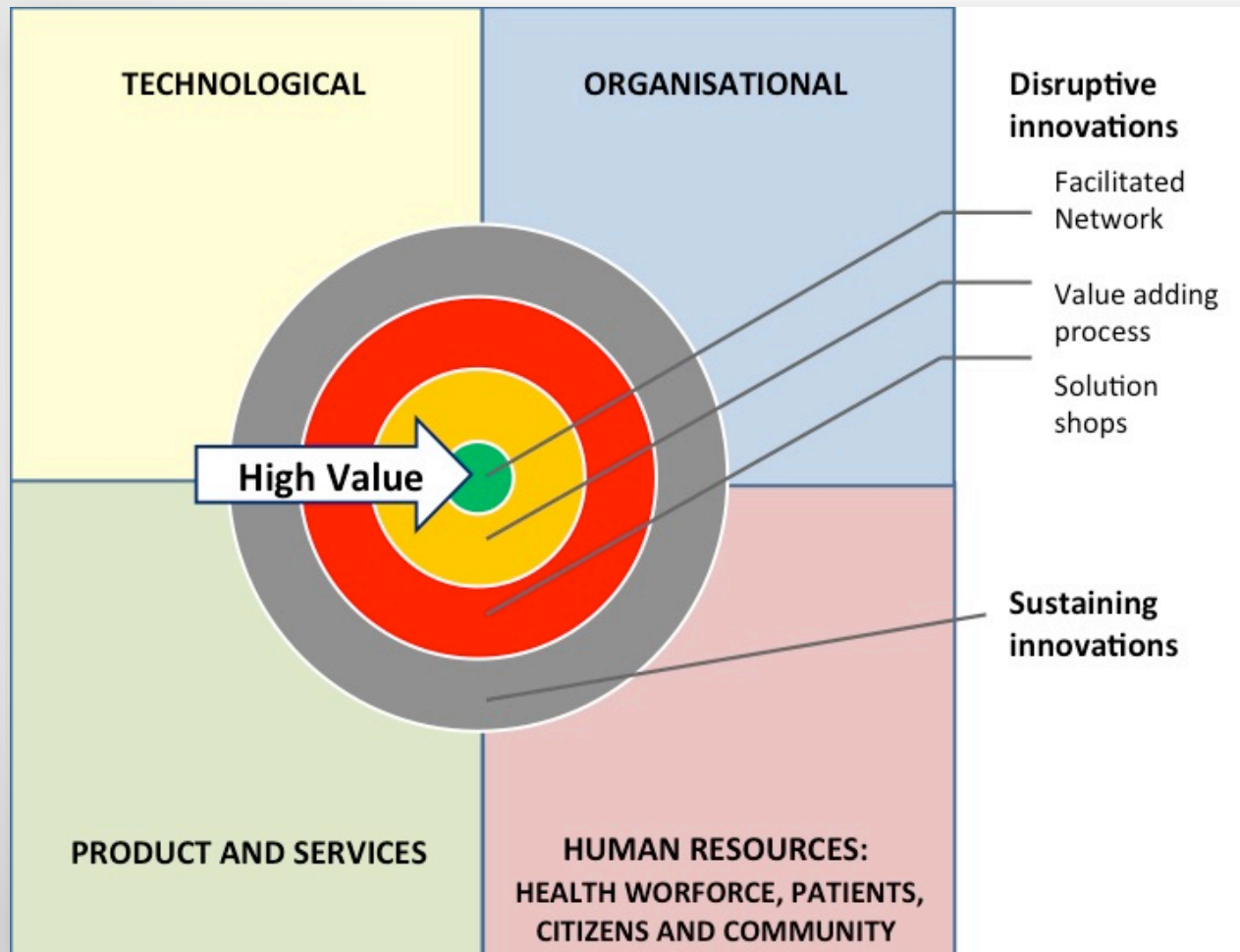


Taxonomy of disruptive innovations



Visual taxonomy of disruptive innovations

BASED ON THEIR **FIELDS OF APPLICATION**



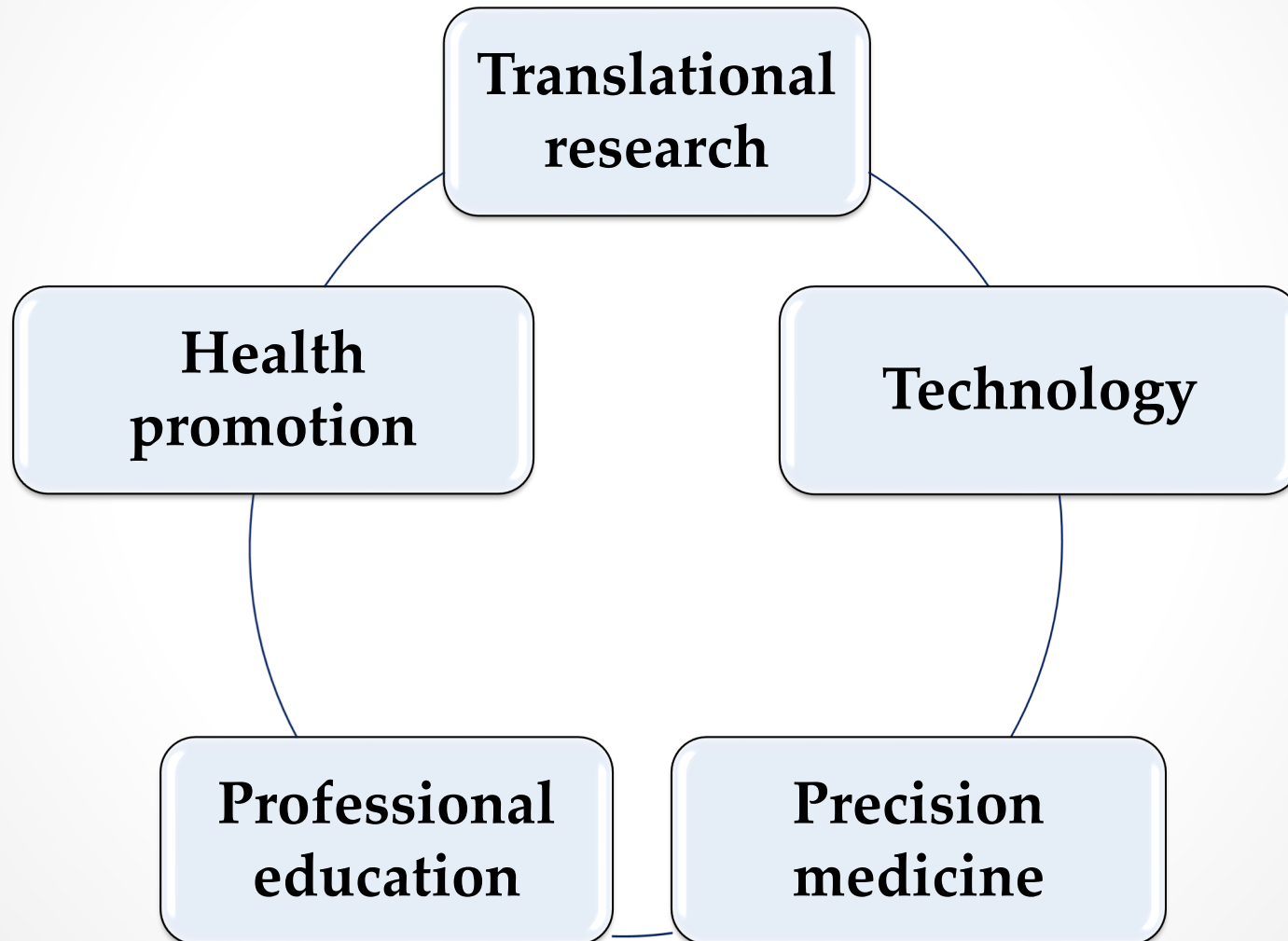
The bull's eye distinguishes the three different typologies of models in health care

When a model substitutes another, the gains in affordability and accessibility are even more profound than when innovations occur within the same type of health care model. This movement between healthcare models usually represents the obtainment of high value.

Examples illustrating the taxonomy

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

5 strategic areas for disruptive innovations



Translational research

EXAMPLES

	Basic Discovery	Proof of concept	Clinical development	Practice adoption: EBM	Community assessment	Global Health
Sustaining	Discovery of ACE- inhibitors	Testing of new drugs	Stenting for CHD	Guidelines for chronic conditions	Task shifting between health professionals	Worldwide access to ARV
- Continuous						
- 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)	Implementatio n 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

Technology in medicine

Technological change or innovation in medicine has been described as three steps:

Non-technology



A situation where there is not very much that can be done to change the course of the disease. However, a lot can be done to help the patients through the episode of illness, and this is a technology that is both commonly used and highly appreciated.

Example: supportive therapy and technical advances that facilitate the care process for the care-giver.

Half way technology



An innovation that makes it possible to influence the course of the disease and improve outcome. The technology is often performed in hospitals and it is usually expensive.

Example: radiotherapy and surgery for some cancers, treatment of polio victims in the iron lung, dialysis and transplantation for chronic renal failure

High technology



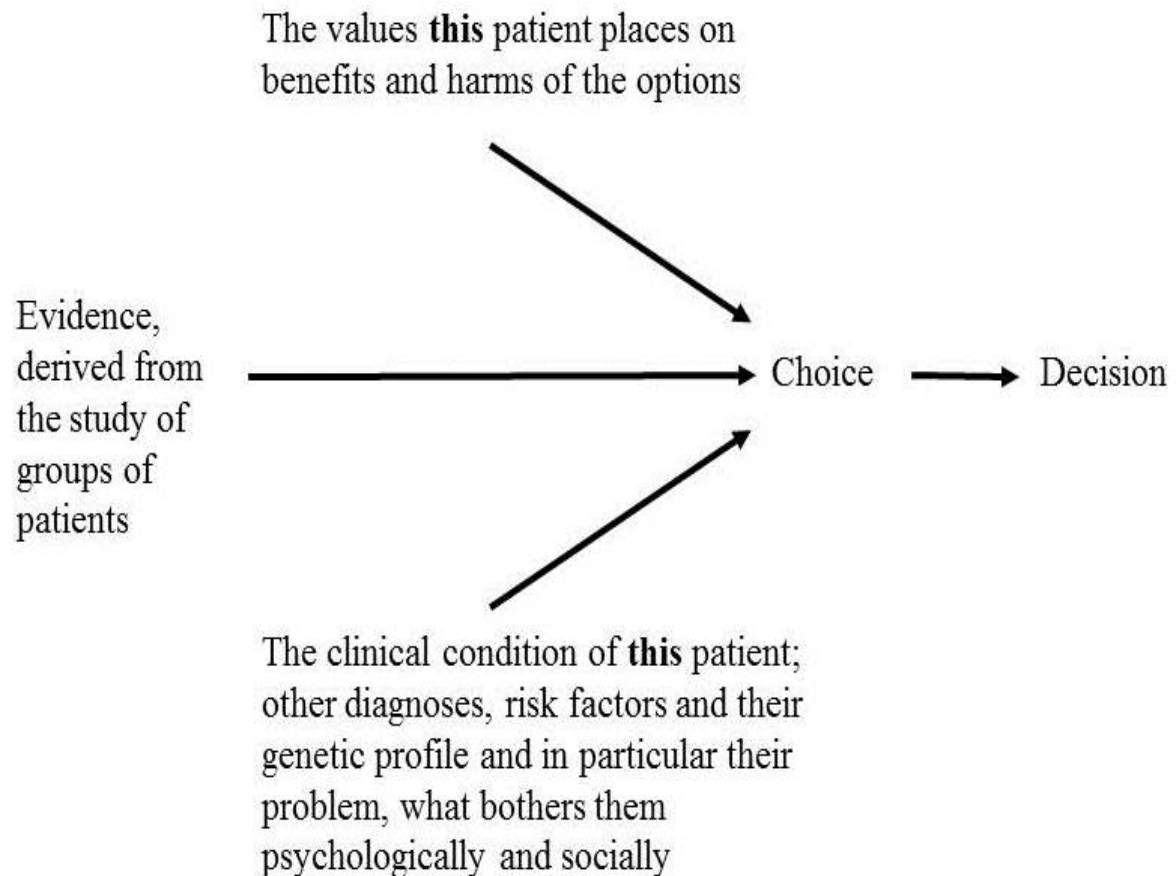
Based on a true understanding of the disease. The technology could offer prevention and cure at a low cost.

Example: the discovery of the role of helicobacter pylori as a leading cause of bleeding stomach ulcers in the 1980s that revolutionised the treatment process and have eliminated the need for surgery for ulcer disease.

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 - **first 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

Innovation triggers

Factors that trigger disruptive innovation in health care systems can be:

Drivers



Factors that cause a particular innovation to happen or develop and are commonly due to existing problems, difficulties or inefficiencies

Enablers



People/things that make the innovation possible

Incentives



Factors that motivate or encourage someone to do something.

Incentives can be

- positive or negative (as in disincentives)
- financial (e.g. research funding programs in Europe) or non-financial (e.g. setting up pilot projects)
- tangible or intangible.

Innovation triggers

DRIVERS (implication)	ENABLERS (implementation)
Thinking of the health of populations rather than individuals	Using health promotion and disease prevention approaches and effective case management to improve population health and reduce illness and emergencies
Leveraging information and decision-making tools	EPRs: electronic patient records; Cultivating a shared awareness of quality guidelines and evidence-based health interventions
Building connections across a continuum of care from promotion and prevention to treatment and recovery for better chronic disease management	Engaging and incentivizing consumers to take health care out of exam room
Managing the overall cost of care, and not departmental profit and loss	Investing less money in high end technology and more in technologies that simplify common health problems
Experimenting with new models of care and funding of care	Health plan database: integration between medical and insurance databases
Establishing a universally accessible high-quality primary health care system for all citizens	Culture: embracing experimentation and organisation-wide learning
Ensuring that everyone has a work role that fully utilises their professional preparation	Promoting systems in which the health care professionals' skill level is matched more closely to the level of the health problem
Health system flexibility to allow new players to emerge and new initiatives	Training with more interprofessional links
Allowing caregivers to focus more efforts on sicker patients	Integration of health and social/welfare care

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 command-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



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:

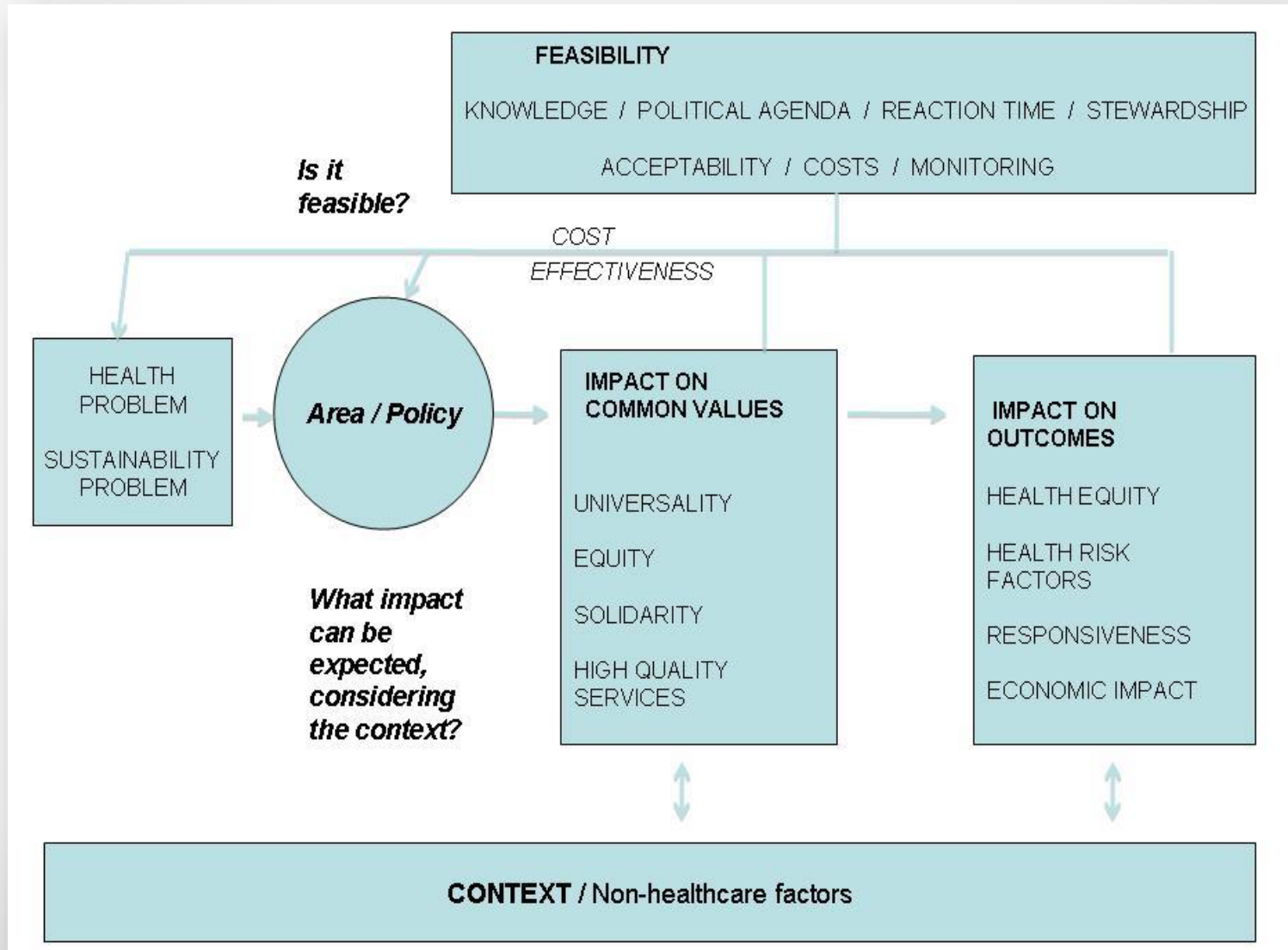
- Projected Impacts
- Context
- Feasibility

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

Policy issues

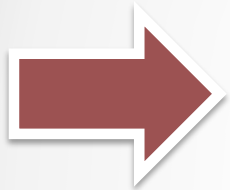
Elements for selection/prioritisation of policies/interventions



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

the development of research focusing on "disruptive innovation", both in basic and applied research

invest

- more in translational research
- in trans-disciplinary education and research at a pan-European level

take into account

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

be informed on

possibilities to improve the care working in decentralised communities, better stimulating them towards innovation

support

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



**THERE ARE NO
“ONE-SIZE-FITS-ALL”
SOLUTIONS**

Thanks for your attention