Shaping sustainable health care

A framework on impact of PM in National Health Systems

Walter Ricciardi

President
Istituto Superiore di Sanità Italy
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

<table>
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<tr>
<th>SUSTAINING</th>
<th>An innovation that does not affect existing markets</th>
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<tbody>
<tr>
<td>Continuous</td>
<td>An innovation that improves a product in an existing market in ways that customers are expecting.</td>
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<tr>
<td>Discontinuous</td>
<td>An innovation that is unexpected, but nevertheless does not affect existing markets.</td>
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<tr>
<th>DISRUPTIVE</th>
<th>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</th>
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<td>Main features are:</td>
<td>a) improved health outcomes</td>
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<td>b) create new professional culture</td>
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<td>c) serve new groups or have new products/services</td>
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<td>(“create new markets”)</td>
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<td>d) create new players</td>
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<td>e) disorders old systems</td>
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EXPERT PANEL ON EFFECTIVE WAYS OF INVESTING IN HEALTH

(EXPH)

Disruptive Innovation

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.”
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

- Translationa l research
- Health promotion
- Technology
- Professional education
- Personalised medicine
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
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.

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

Demographic and epidemiological transition

Technological innovation

Health Systems

Professional differentiation

Populations needs and demand
Chronic diseases

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

Need & Demand

2012

Euro
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

Healthcare systems need to be reorganized, and sustainability framework represents a prominent option to guide new policies, plans and programs.

Aim: Gaining health

Policy Maker = Investment

Citizen = Gaining health

Prevention and Early Intervention

Empowered and responsible citizens

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

‘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 without considering the economic implications.’
Phillips KA, 2004

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 restructuring 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
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