Innovations for social and digital transformations for health systems

Impact on Universal Health Coverage with focus on urban context

Isabelle Wachsmuth
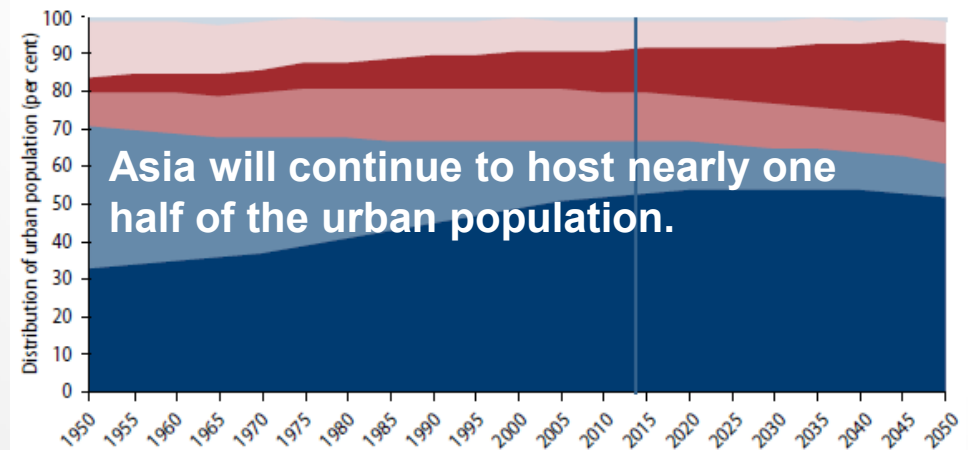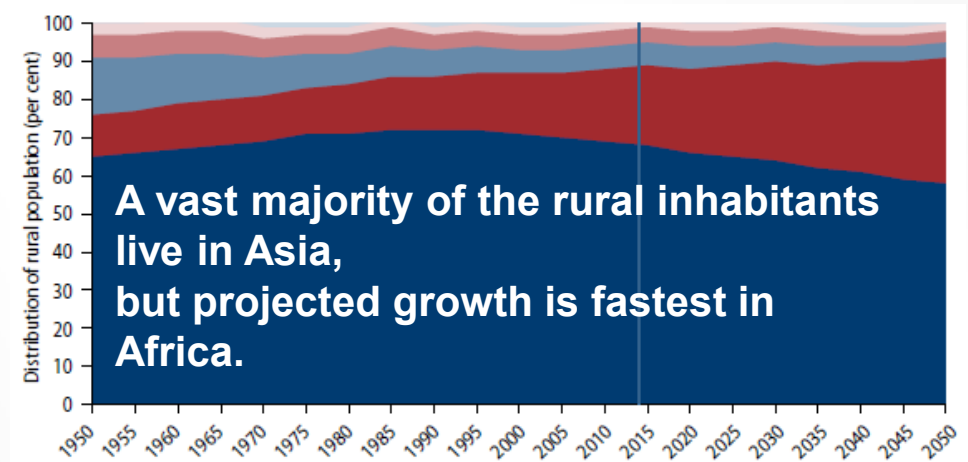Universal Health Coverage and Health systems
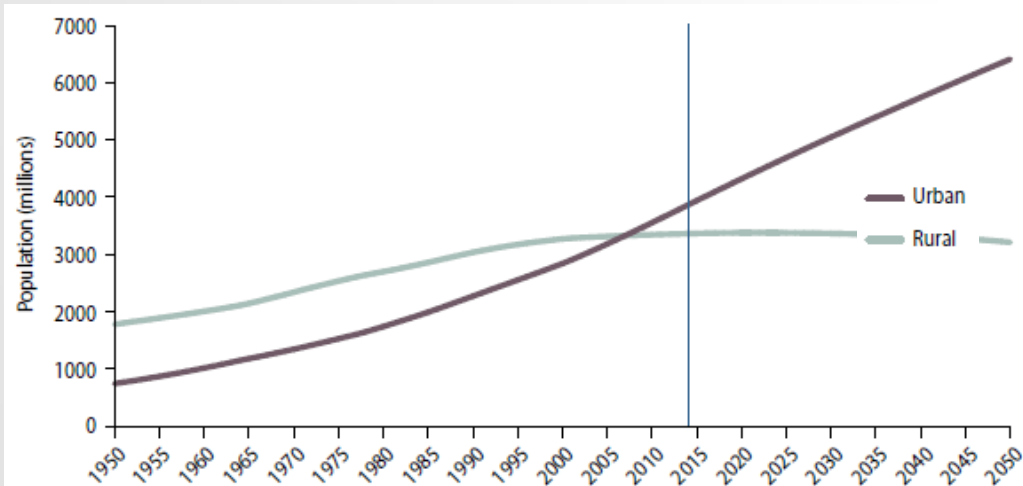
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A PLANET OF (BIG) CITIES

In 2007, for the first time in history, the majority of the world's population—3.3 billion people—lived in cities. By 2050, city dwellers are expected to make up 70% of Earth's total population, or 6.4 billion people.

WORLD URBANIZATION PROSPECTS

Legend:
- Africa
- Asia
- Europe
- Latin America and the Caribbean
- Northern America
- Oceania

A vast majority of the rural inhabitants live in Asia,
but projected growth is fastest in Africa.

Asia will continue to host nearly one half of the urban population.

Abidjan, Cote d'Ivoire

EPIDEMIOLOGIC TRANSITION

- Burden of CD: 57% of all deaths in 2005, will account for approximately 73% of all deaths by 2030.
- Tectonics of demography in aging societies: 80% of age 60+ suffering from one or more Chronic Conditions CC (as do many of the poor).
- CD deaths are projected to increase by 30% globally between 2005 and 2030.

Mortality rate

Acute diseases, Communicable & environment related, etc.

Chronic diseases, Life style related diabetis, obesity, respiratory, cardio-vascular, etc.
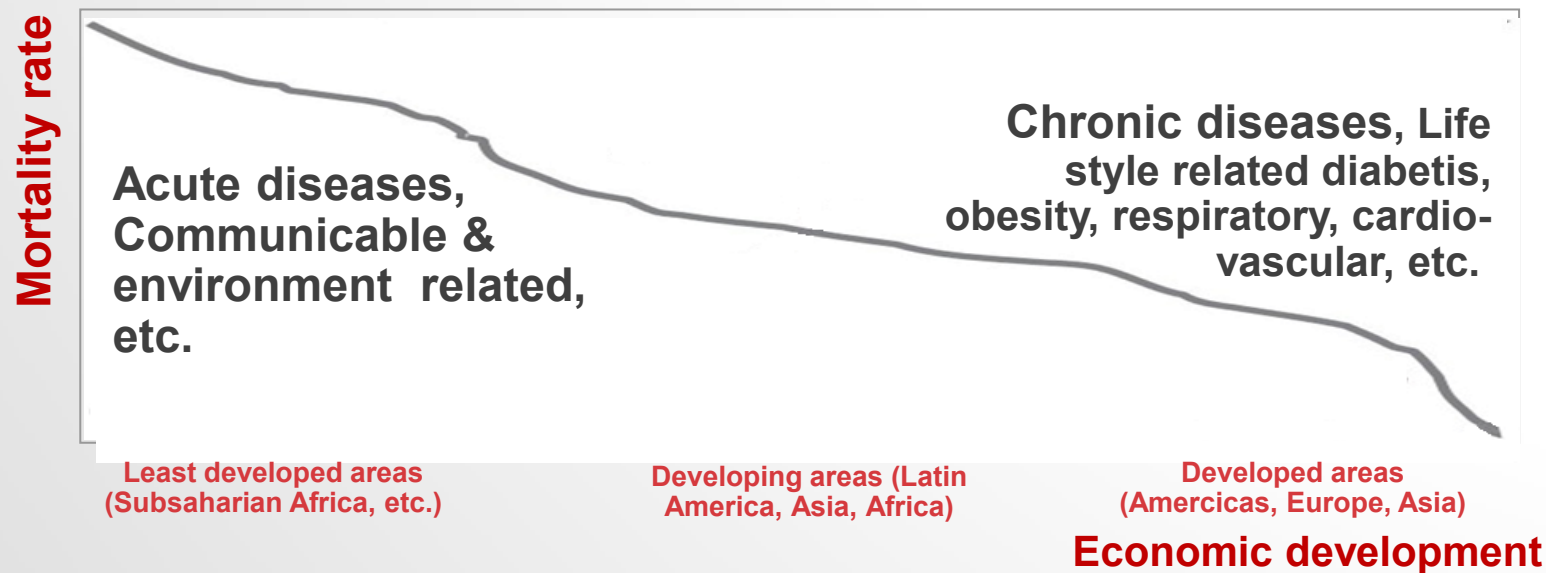
Source: World Health Organization "World health statistics 2015", WHO Geneva, 2011. "The global burden of disease: 2004 update Geneva, WHO, 2008.

Least developed areas (Subsaharian Africa, etc.)

Developing areas (Latin America, Asia, Africa)

Developed areas (Amercicas, Europe, Asia)

Economic development

GROWTH OF HEALTH CARE SPENDING

- Health care spending is growing faster than national income.
- Since 1970, total health care expenditures have grown by an average of 2.5 percentage points faster per year than the nation's GDP (Gross Domestic Product)

% GDP
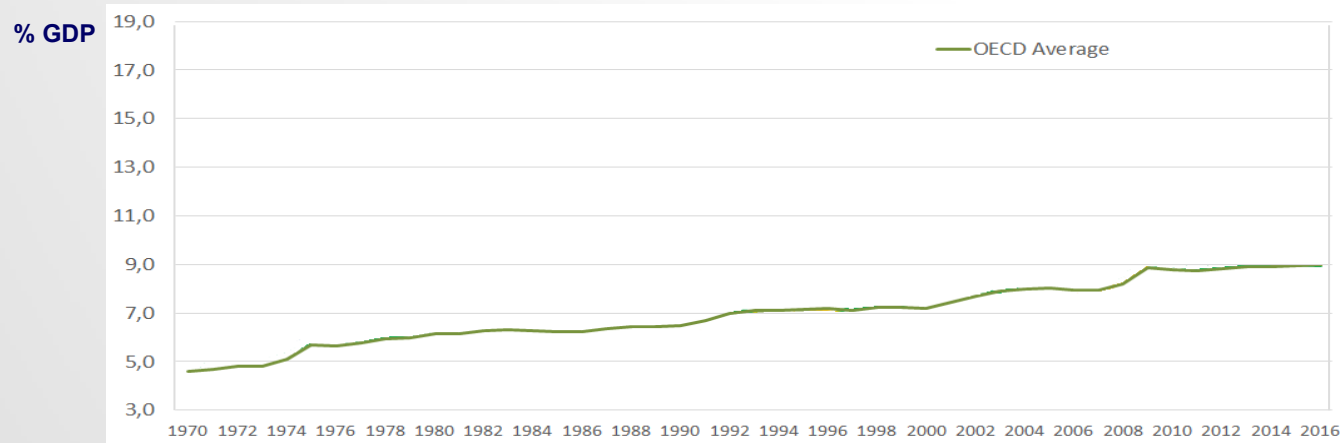
Since 2009, the share of GDP allocated to health has stabilised or decreased as health spending grew

Source: OECD Health Statistics 2016; Eurostat Database; WHO, Global Health Expenditure Database

EXPOSOME VERSUS GENOME IMPACTS
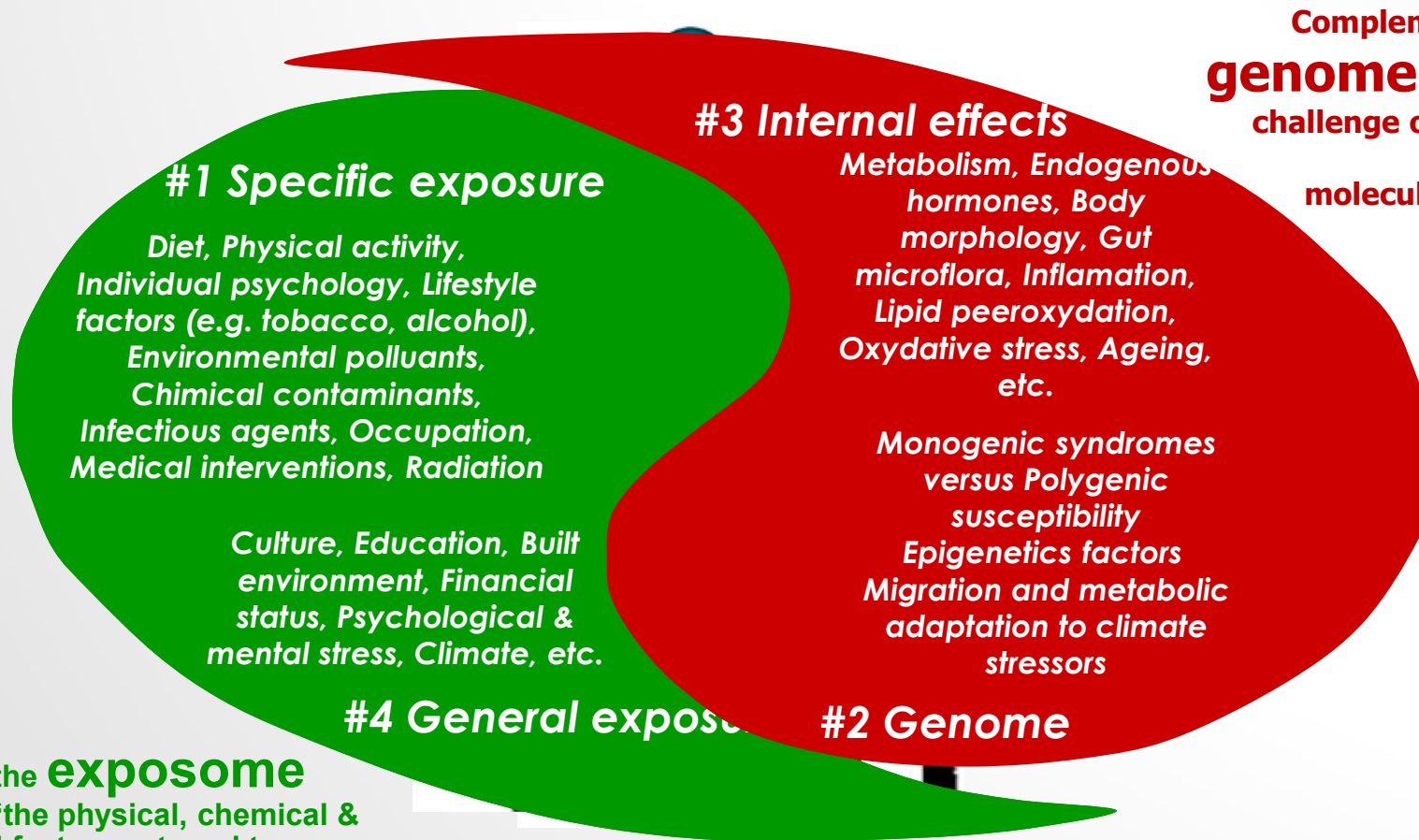
Complementing with the genome: an outstanding challenge of environmental measurement in molecular epidemiology

#1 Specific exposure

Diet, Physical activity, Individual psychology, Lifestyle factors (e.g. tobacco, alcohol), Environmental polluants, Chimical contaminants, Infectious agents, Occupation, Medical interventions, Radiation

Culture, Education, Built environment, Financial status, Psychological & mental stress, Climate, etc.

#3 Internal effects

Metabolism, Endogenous hormones, Body morphology, Gut microflora, Inflamation, Lipid peeroxydation, Oxydative stress, Ageing, etc.

Monogenic syndromes versus Polygenic susceptibility Epigenetics factors Migration and metabolic adaptation to climate stressors

#4 General exposure

#2 Genome

Defining the exposome as "the physical, chemical & biological factors external to a person and all the related behaviours (WHO)

International Agency Research on Cancer
World Health Organization

Wild C P Int. J. Epidemiol. 2012;41:24-32

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Why to consider innovation in health systems?

- Address the burden of infectious and chronic diseases

- Address rising health care costs

- Address problems of quality and health outcomes

- Address complexity and design better adaptive and resilient health systems to the local context

- Responsibility of health system to more efficient and sustain improvement efforts

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Definition and Scope

New services, new ways of working and/or new technologies
*[Lansisalmi, et al., 2006]*

Why?

- Way to achieve public health goals with more efficient way

- Designed to significantly benefit the individual, the group, or wider society *[West, 1990]*

- From the patient's point of view, the intended benefits are either improved health or reduced suffering due to illness
[Faulkner and Kent, 2001]

- *Create a high-performing healthcare system available to all*
[Hwang and Christensen, 2016]

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Innovation

Definition (West, 1990)	Types	Impact	Healthcare	Paradoxes (Dixon-Woods M et al, 2016)
Novelty	Technological	Non disruptive	New services	Uptake of the dubious, rejection of the good
Intent	Social	Disruptive	New products	The wisdom and failings of democracy
Application/ Dissemination	Adaptive		New ways of doing things	Health systems are never able to keep up
Benefit	Product			
	Process			
	Marketing			
	Organizational			
Context specificity	Structural			

Figure 1: The links of innovation, learning and scaling up
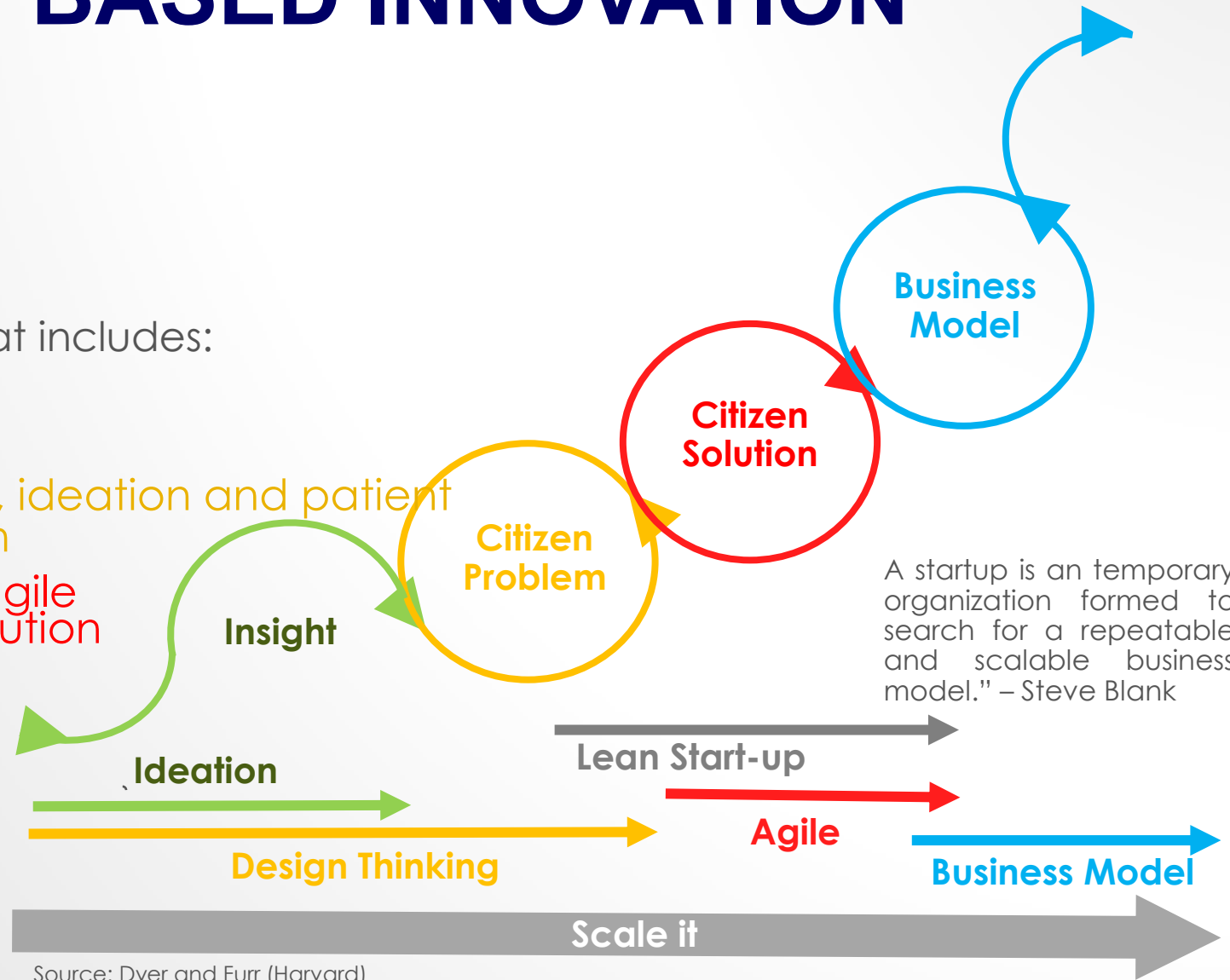
Source: Linn

R4D & MSI, 2014

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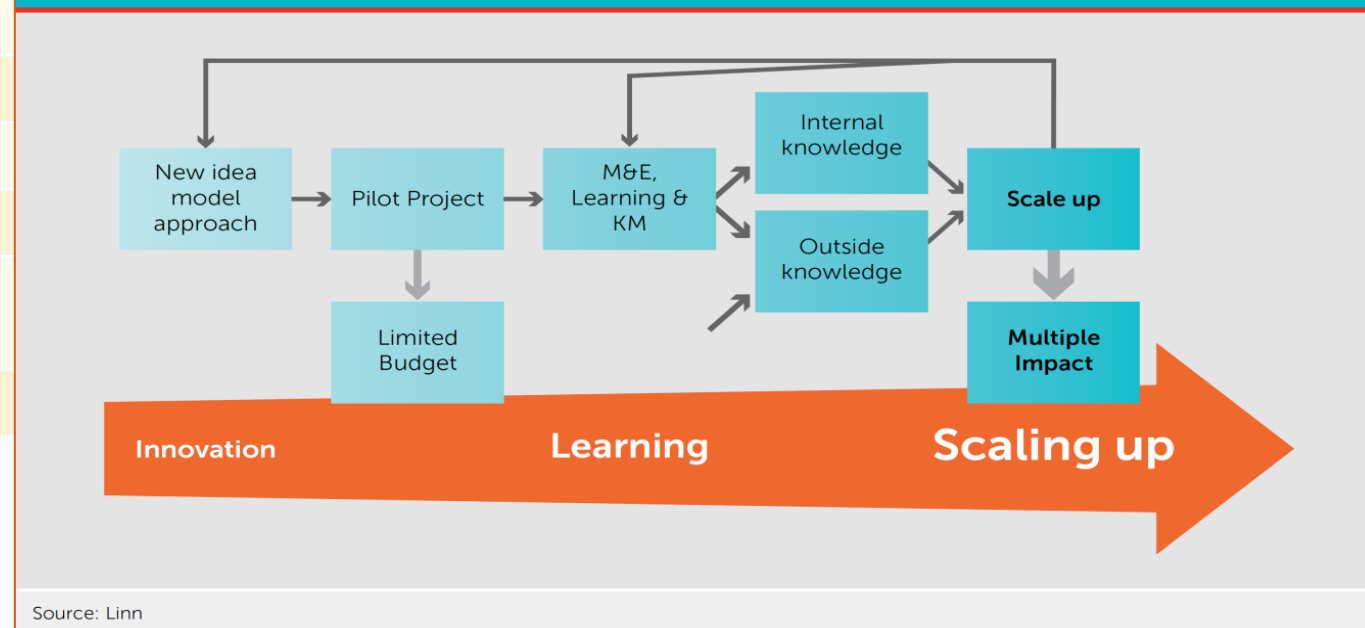
CITIZEN BASED INNOVATION

- An iterative cycle that includes:

  - design thinking, ideation and patient problem design
  - lean thinking, agile and patient solution design
  - business model and the scale-up

Business Model

Citizen Solution

Citizen Problem

Insight

A startup is an temporary organization formed to search for a repeatable and scalable business model." – Steve Blank

Ideation

Lean Start-up

Design Thinking

Agile

Business Model

Scale it

Source: Dyer and Furr (Harvard)

New services

- **Prepare and prevent:** Digital literacy in public health and medical education

- **Data inputs and diagnostics:** Home diagnostics, personalized medicine, genomics

- **Therapy & follow-up:** Inter-disciplinary therapies, telemedecine, mhealth, connected medicine

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New products

- Advances in medical knowledge and precise diagnostics and therapies (drugs, devices, equipment)

- Advances in ICT (broadband communication and wireless integrated microsystems)

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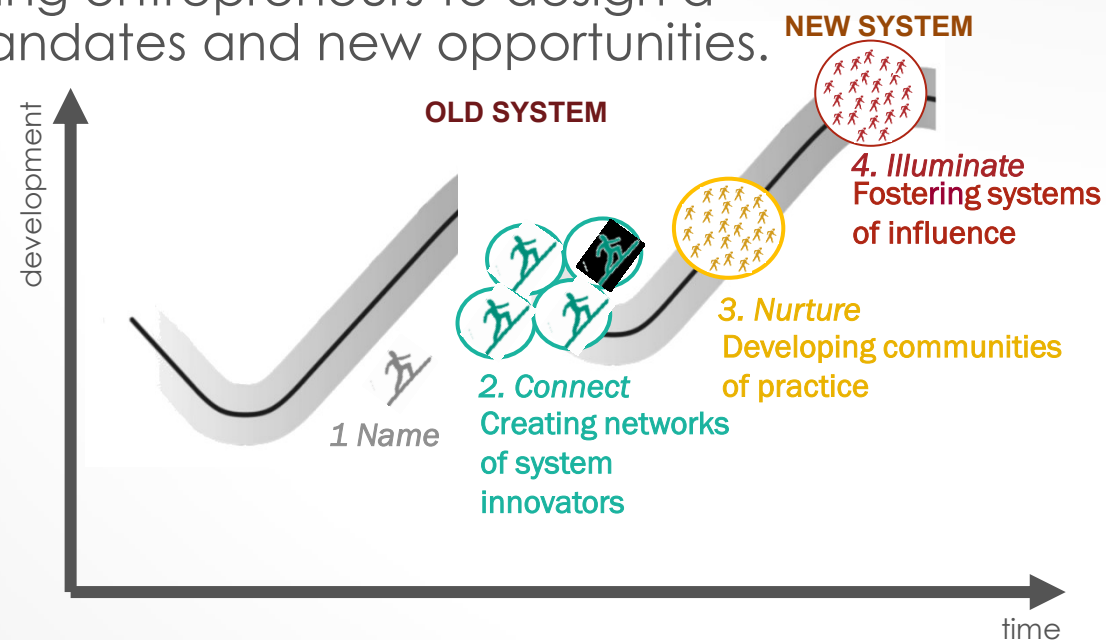# New ways of doing things: new models of care delivery

- New division of labour among health care providers

- Changes in the structure and location of care delivery. Synchronizing services and resources

- Accelerating the development and application of ICT tools and techniques

- Integrate specialist care with primary health care services to deliver quality and cost effective care for patients

- Change of mindset: Convince medical specialists about the benefits and quality of delivering some complex care at Primary health care level

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CAPACITY BUILDING

- Four steps to build capacity helping entrepreneurs to design a new system and to meet new mandates and new opportunities.

- *1. Name* a vision and identify system innovators working on that vision

- *2. Connect* these leaders to one another so that they can work together, with less isolation and more resources

- *3. Nurture* these leaders and networks through rapid cycles of learning-development and access to world class experts

- *4. Illuminate* the experiences of these leaders and tells their stories

development

NEW SYSTEM

OLD SYSTEM

4. Illuminate
Fostering systems
of influence

3. Nurture
Developing communities
of practice

2. Connect
Creating networks
of system
innovators

1 Name

time

Innovation to address complexity

- Valuable source of learning about the complexities of change and the actions of local change agents

- Improve understanding of the context and challenges

- Bring all stakeholders who have intelligence of the situation to co-construct a solution

- Holistic and systemic approach to improve performance of health system (different ways), to address multi-dimensional issue and increase collective efficiency and to establish interaction between dimensions

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New ways of doing things to reach UHC

- Reorienting the model of care

- Defining service priorities based on life-course needs, respecting people's preferences

- Revaluing promotion, prevention and public health

- Building strong primary care-based systems

- Shifting towards more outpatient and ambulatory care

- Disrupting health care systems by replacing complicated, expensive products and services with simple, affordable ones

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Drivers for change and innovations

Population	Organizational	Health system	Programme	Governance/ Management	Individual
Demographics	Preventives measures	Reduction of cost	Patient-orientated education programme	Openness to ideas and to think outside of the box	Patient satisfaction
	Holistic approach	Raise quality of care	Integrated healthcare programme	Seize opportunities	Societal and individual responsibility
	Ability to demonstrate organisational learning	Generate recognition and support for innovation across the public health system	Engagement of stakeholders	Role of champions and entrepreneurs	Empowerment through health evidence information access & understanding
	Demonstration of the utility of implemented innovations			Teamwork and independent thinking	Authenticity of personal experiences

Key messages

- Innovations for better service delivery and health systems are complex

- Need to consider broader systemic factors and the specific context to have sustainable impact on quality of care

- Solution is to encourage disruptive business and delivery models as integrated health systems that can improve quality and safety of healthcare

- Policymakers need to assess regularly what are the relevant innovations in term of technologies, processes, way of working to improve quality and safety of health services with health system perspective

- Need for dedicated resources, creating a culture of learning, allowing risk-taking and experimentation

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