PARIS SCHOOL OF ECONOMICS
ÉCOLE D'ÉCONOMIE DE PARIS

École des Ponts
ParisTech

Health Economics and Health Policy

Introduction

Part 1 : Pr. Lise Rochaix

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

Outline

Six questions to start with …

1 – Can economists contribute in this field?
2 – Is health care SO special?
3 – What do health economists worry about?
4 – What are the determinants of health/health care growth?
5 – What have we learned from health economics research for macro-level policies?
6– Which tools for the economic analysis of health policies?

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

Preamble

- Health economics is a relatively new field of application (Arrow 1963 +)
- Initial differences in issues between developed and developing countries become less marked over time
- Its scope has extended rapidly from a microeconomic focus on health care systems design to both macro regulation and individual behaviors
- Equity issues have led to increasing research
- A small and decreasing set of theoretical papers, a large and fast increasing set of econometric papers, a huge amount of publications on Health Technology Assessments (HTA) with the three subsets working in silos

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

1 - How does health policy influence research programmes? And vice versa

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

How does health policy influence research programmes? And vice versa

An 'existential' question shared by most disciplines...

Prevalent amongst economists ...

- Walliser (1994):
- A small share of theoretical ideas gives rise to recommendations;
- an even smaller share of these is followed by decisions...

And even more so amongst health economists !

- 1 - Is it a legitimate question? …
- 2 - Is so, why?
- 3 - Can we do something about it?

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

How does health policy influence research programmes? And vice versa

1 - Is it a legitimate question?

Some of the 'contributions' of economic analysis of health care policy:

- Macro-economic analysis of the determinants of health care expenditure growth
- Micro-economic analysis of providers' behaviour and the role of incentives
- International comparisons of equity in health and health care and the role of income

Yes:

Ex: Recommendations drawn from economic analyses to reform the French healthcare system (Dormont, Geoffard, Tirole, CAE, 2014) are not systematically used

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

How does health policy influence research programmes? And vice versa

2 - If yes, why?

Two possible explanations:

1) The economists' tool box is *perhaps* inappropriate for health and health care analysis …

2) The decision-making process itself needs to be questioned

Disentangling explanations requires peeping into the tool box

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

How does health policy influence research programmes? And vice versa

The economists' production line...

'Positive' analysis

⇨ Describing the relationship between agents.

'Evaluative' analysis

⇨ Assessing performance (Where are we?)

'Normative' analysis

⇨ Defining system goals ('Where should we go from here?')

'Prescriptive' analysis

⇨ Setting the path to achieve these objectives (which way?)

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

How does health policy influence research programmes? And vice versa

Strengths and weaknesses

- Generality of model predictions … at the price of assumptions such as the 'representative individual'…
- Power of econometric analysis to handle endogeneity/heterogeneity issues but at the price of approximations (often due to inadequate data)
- The inescapable value judgements when moving from positive to normative analysis

The applicability to health and health care policy analysis

- => Combination of market failures makes it both more difficult but also more interesting!

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

How does health policy influence research programmes? And vice versa

And what about the decision-making process?

Shiao, 2007

'Economic policymakers often measure their success solely by their country's economic growth. As a result, they devote most of their time and efforts to thinking about macroeconomic policy issues, overlooking the way in which macroeconomic policy is influenced by and influences the social sectors— education, health, and income security'.

W. Hsiao &P. Heller, What macroeconomists should know about health care policy, International Monetary Fund, 2007

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

How does health policy influence research programmes? And vice versa

And what about the decision-making process?

- Political time frame is shorter from research
- Regulators can be captured: Need to follow Jean-Jacques Laffont's recommendations to study the **political economy of public economics**
- Trade-off between scientific evaluations requiring time and the need to adapt interventions in view of the results

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

How does health policy influence research programmes? And vice versa

3 - What can we do about it?

On researchers' side: policy-oriented research

- Tailor economic tools to special features of health-healthcare
- Adopt more flexible evaluation methods (adaptive evaluation, quasi-experimental designs)
- Learn how to communicate results better;
- Develop bridges between research and policy positions

On decision-makers' side: evidence-based policy

- Independent regulatory bodies to evaluate policies
- Fund scientific evaluative research over longer time spans

=> *From interface to interaction*

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

2 - Is health care SO special?

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

Is health care SO special?

=> Different objects of analysis

- Health: use value
- Health care: indirect (derived) utility
- Health care insurance

=> Healthcare combines various market failures

- Mixed public goods
- Externalities (including altruism)
- Information asymmetries
- Option value (Weisbrod, 64)
- Uncertainty

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

Is health care SO special?

Multidimensional uncertainty

- Patient's uncertainty about
  - Occurrence of illness
  - Severity of illness
  - Quality of supplier
- Supplier's uncertainty about
  - Diagnostic
  - Treatment's efficacy in real life
  - Patient's reaction to treatment
  - Patient's compliance

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

Is health care SO special?

Asymmetric information

- Technically complex
- Unobserved quality
- Delays in access to treatment may lead to higher costs
- Medical error may cause irreversible health damage
- Dual nature of information: about need for treatment (diagnostic) and level/type of treatment
- Emotional dimension leading to choice delegation to supplier

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

Is health care SO special?

Health care as a quasi-market?

Economists now agree that it it the combination of these market failures that is characteristic of health care

- It is at best a quasi-market
- It definitely requires an adaptation of economists' tool box
- It justifies the existence of an autonomous field of application: health economics

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

3 - What do health economists' worry about?

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What do health economists' worry about?

Four basic questions

1: Macro-efficiency

What combination of nonmedical and medical goods and services should be produced in the macroeconomy ?

Ex. 1: Should the government spend more on fundamental research or on better reimbursement of prescription drugs for the elderly?

Ex. 2: Give another example

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What do health economists' worry about?

Four basic questions
2: Allocative efficiency

Given a budget earmarked to health care, what particular medical goods and services should be produced?

Ex. 1: Should the governement spend more on prescription drugs for the elderly or on home health care?

Ex. 2: Should the governement spend more on research to cure cancer or on cancer screening programs?

Ex. 3: Give another example.

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What do health economists' worry about?

Four basic questions

3: Productive efficiency

What specific health care resources should be used to produce the final medical goods and services?

Ex. 1: Task delegation: should ambulatory patients be cared for by nurse practitioners rather than physicians?

Ex. 2: When is medical versus surgical management of a health condition appropriate?

Ex. 3: Give another example.

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What do health economists' worry about?

Four basic questions

4: Equity

Who should receive the medical goods and services, given the budget constraint?

Ex. 1: Should all of the elderly receive prescription drug coverage or only the low income elderly?

Ex. 2: Give another example.

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

4 - What are the determinants of health status and health care expenditure growth?

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What are the determinants of health status and health care expenditure growth?

- Ian McKeown, 70s : the eradication of tuberculosis had more to do with the improvement in living conditions than with medical treatment
- Canadian Institute for Advanced Research (Stoddardt, 96) stressed the multifactorial nature of health status determinants
- WHO's wide definition of health : from the absence of sickness to a complete state of well-being.

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What are the determinants of health status and health care expenditure growth?

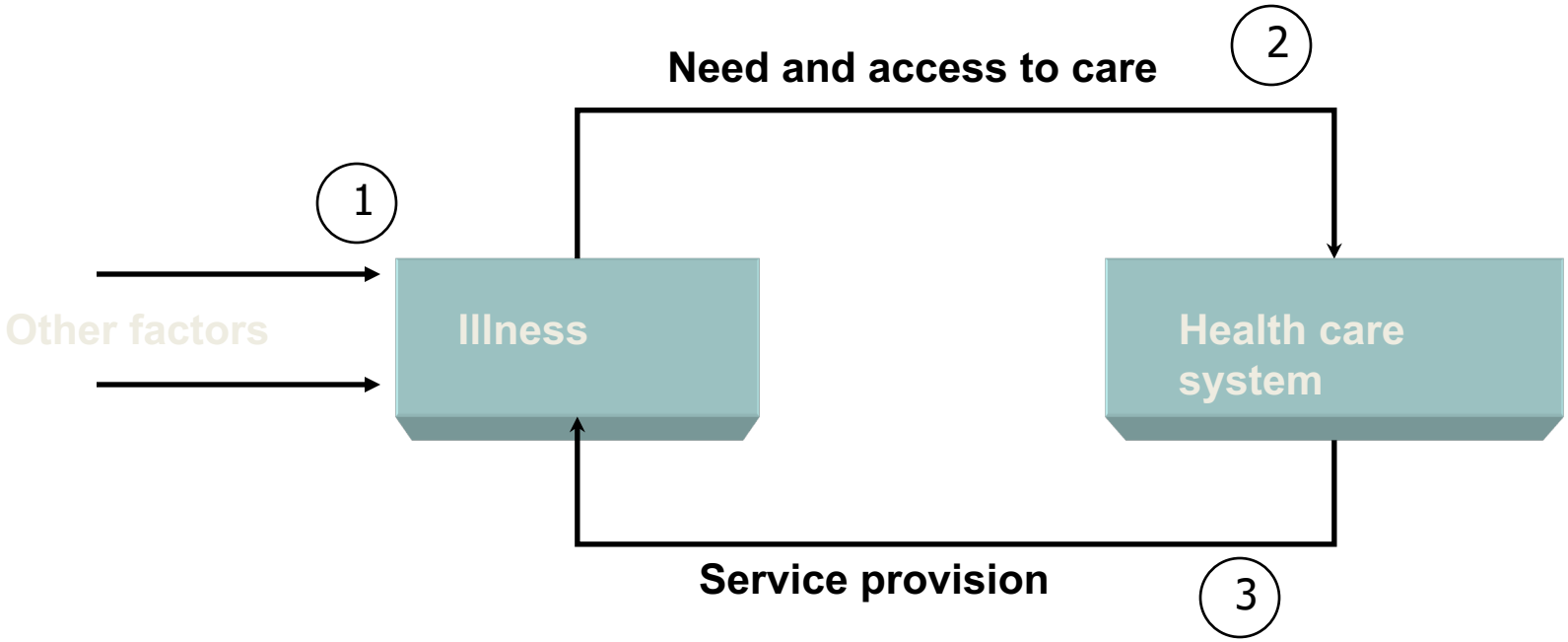
Society's expectations with respect to health care are growing (to the point of becoming unreasonable?)

Health care providers have influential positions in the health policy arena and ensure that health care is perceived as THE main determinant

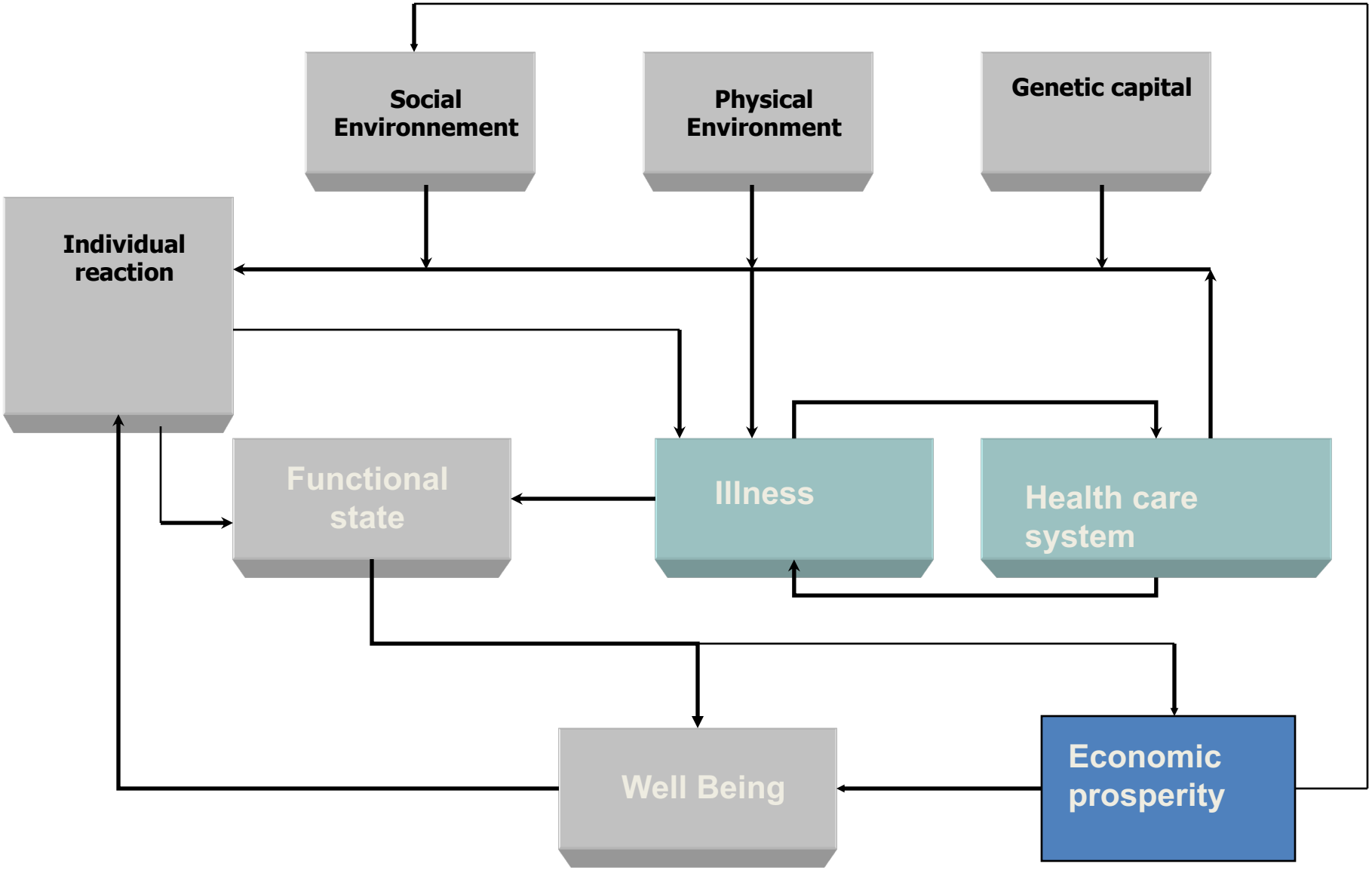
Yet many factors determine individual and population health status

=> Moving from a simple retroactive model to a system approach

What are the determinants of health status and health care expenditure growth?



What are the determinants of health status and health care expenditure growth?

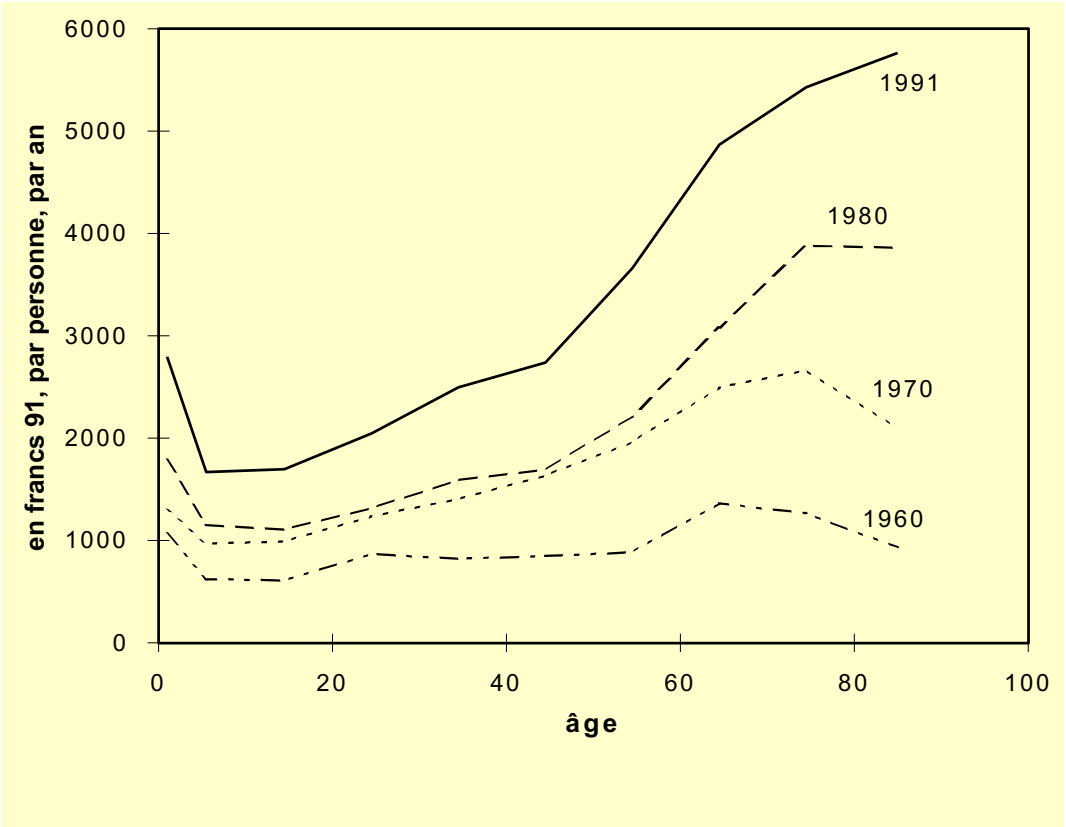


PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What are the determinants of health status and health care expenditure growth?

Beyond demography: Generation effects

From a 'U' shaped to a 'J' shaped curve for health care consumption over the life cycle: generation effects (those aged 80 today consume more than those who were 80 ten or twenty years ago.



PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What are the determinants of health status and health care expenditure growth?

Smith and Yip (2016)

Considerable variation in healthcare organization from one country to another:

- Beveridgian systems (NHS 'type')
- Bismarckian systems (Germany)
- Market orientated systems (US/Switzerland)

Various factors explain expenditure growth

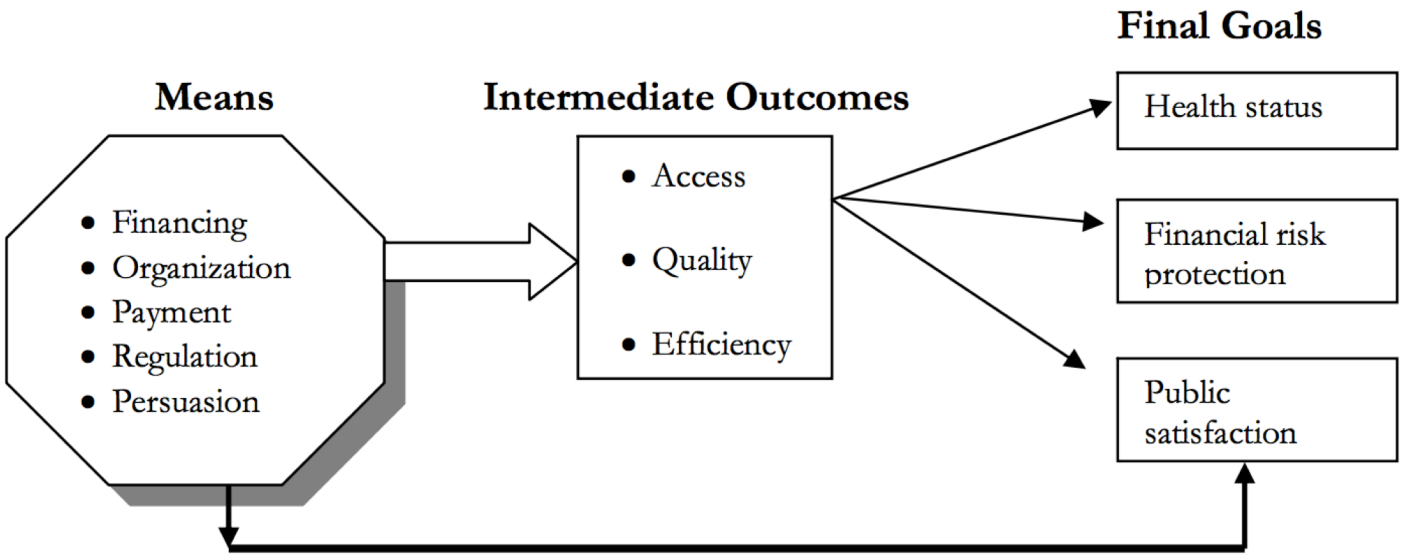
- Insurance coverage
- Provider payment modes
- Conditions of access to care
- Technical progress adoption

Smith P. and W. Yip, 'the Economics of Health Systems Design, Oxford Review of Economic Policy, Volume 32, Number 1, 2016, pp. 21–40

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What are the determinants of health status and health care expenditure growth?

Figure 6. Means, Intermediate Ends, and Final Ends of a Health System



Smith and Yip, 2016, op. cit.

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What are the determinants of health status and health care expenditure growth?

Technology adoption is the most important explanatory factor for healthcare expenditure growth (Cutler et McClellan, 1996)

- **Short term**
  - Increase in technology prices
  - Volume increases (new technology added to existing one)
  - Changes in clinical practice :
    - New diagnostics (prostatic cancer) increase surgery
    - New treatments (osteoporosis) lead to increased tests' use
- **Long term**
  - Technical progress increases health and life expectancy
  - =>increased expenditure, all the more important if life expectancy increases mainly aimed at chronically ill patients

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What are the determinants of health status and health care expenditure growth?

What about low and middle income countries?

Hsiao 2007 on current challenges:

– The **aging of populations** is a development now confronting both advanced economies and a number of emerging market countries

– A "**double disease burden**" faces middle-income countries: they must address both communicable diseases affecting the poor but also the chronic diseases from the rich countries (obesity, …)

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

5 - What have we learned from health economics research for macro-level policies?

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What have we learned from health economics research for macro-level policies?

Shiao, 2017

"Macroeconomists and economic policymakers frequently assume that social sector policies should follow the free market strategy that has worked so well in fostering economic growth. This leads them to simply apply efficient market theory in devising policies related to the social sectors, thus ignoring the ways in which various **market failures** make such an approach undesirable".

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What have we learned from health economics research for macro-level policies?

Hsiao 2007: General findings and actions that can be applied in **most countries** to improve health care:

- The **good health** of a population significantly contributes to human capital development and economic productivity
- Health resources should be allocated to achieve **three objectives**:
  - an optimal level of health status distributed equitably;
  - an adequate degree of risk protection for all;
  - the highest possible level of public satisfaction for the entire population.
- **One size does not fit all**: nations are at different stages of socioeconomic development and have different epidemiological patterns

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

What have we learned from health economics research for macro-level policies?

Hsiao 2007:

- Governments should establish institutions to finance health care and **pool risk**, rather than relying only on the free market
- Because market competition only addresses efficiency, the government has to be responsible for the **equitable financing and distribution** of essential health goods
- Because publicly financed health benefits in developing economies usually favor higher-income households, governments should shift their resource allocations to **target their subsidies** to the poor and to those in the greatest need
- To increase social benefits for the poor, international organizations should promote the use of **affordable technologies** and support investment in **international public goods** (development of vaccines for malaria and HIV/AIDS)

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

6 - Tools for economic evaluation of health care policies

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

Tools for economic evaluation of health care policies

Econometric analyses of policy impacts

'Most applied health economics is not concerned with pure testing of scientific hypotheses: it focuses on estimating economically relevant magnitudes of policy effects and on providing evidence to inform decision-making' (*A. Jones, Chapter 37 'Econometric analyses of policy impacts', in Glied and Smith, 2014; Jones, 2009, 2016*)

Two different approaches:

1 – **Ex-post evaluation** of treatment effects is crucial in understanding the true impact of a treatment or policy.

⇒ comparing outcomes across suitably constructed treatment and control groups

Various techniques are used to infer causality, starting from different situations

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

Tools for economic evaluation of health care policies

Econometric analyses of policy impacts

2 - **Ex-ante evaluation**: the treatment group is simulated to represent the population characteristics of interest as they would appear under the hypothetical policy change.

Microsimulation models consider the changes, at micro level, in the economic circumstances brought about by a policy and the corresponding imputed behavioral responses and outcomes:

- **Arithmetical models** are simply concerned with the gainers and losers from a policy and ignore any behavioral responses
- **Behavioral micro-simulation models** account for the behavioral response of individuals to the policy intervention using structural behavioral models based on a utility maximizing framework subject to a budget constraint

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

Tools for economic evaluation of health care policies

Economic evaluation

Economic evaluation has developed rapidly into a quasi-autonomous field of application, with little interactions with econometrics and economic theory

It is based on economic calculus and aims at producing evidence for decision-makers to set budgets and priorities in healthcare, addressing scarcity issues

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

To sum up

1 - Can economists contribute?

=> Economists are welcome if they learn to communicate with other disciplines and stake-holders

2 - Is health care SO special?

=> Due to multiple market failures, it is at best and only for some segments a quasi-market

3 – What do health economists worry about?

=> Not just cost-containment or efficiency but also equity

4 – What are the determinants of health/health care growth?

=> A system-wide approach is needed here

5 – What have we learned for macro-level policies?

=> One size does not fit all

6 – Which tools for the economic analysis of health policies

=> Combining quantitative and qualitative methods / multidisciplinary approach