

# CENTRE FOR MENTAL HEALTH RESEARCH

## Research School of Population Health

### *College of Medicine, Biology and Environment*



**Prof. Luis Salvador-Carulla , MD, PhD**

*Centre for Mental Health Research*  
[luis.salvador-carulla@anu.edu.au](mailto:luis.salvador-carulla@anu.edu.au)



**Australian  
National  
University**



Australian  
National  
University

PUBLIC SEMINAR

## **Seminar Series 1: Systems thinking approach to Mental Health planning**

**Wednesday 9 – Friday 11 August**

### **Seminar A: Mapping Mental Health Care using the DESDE-LTC Classification System (1.5 days)**

9 August 2017, 9am – 5pm

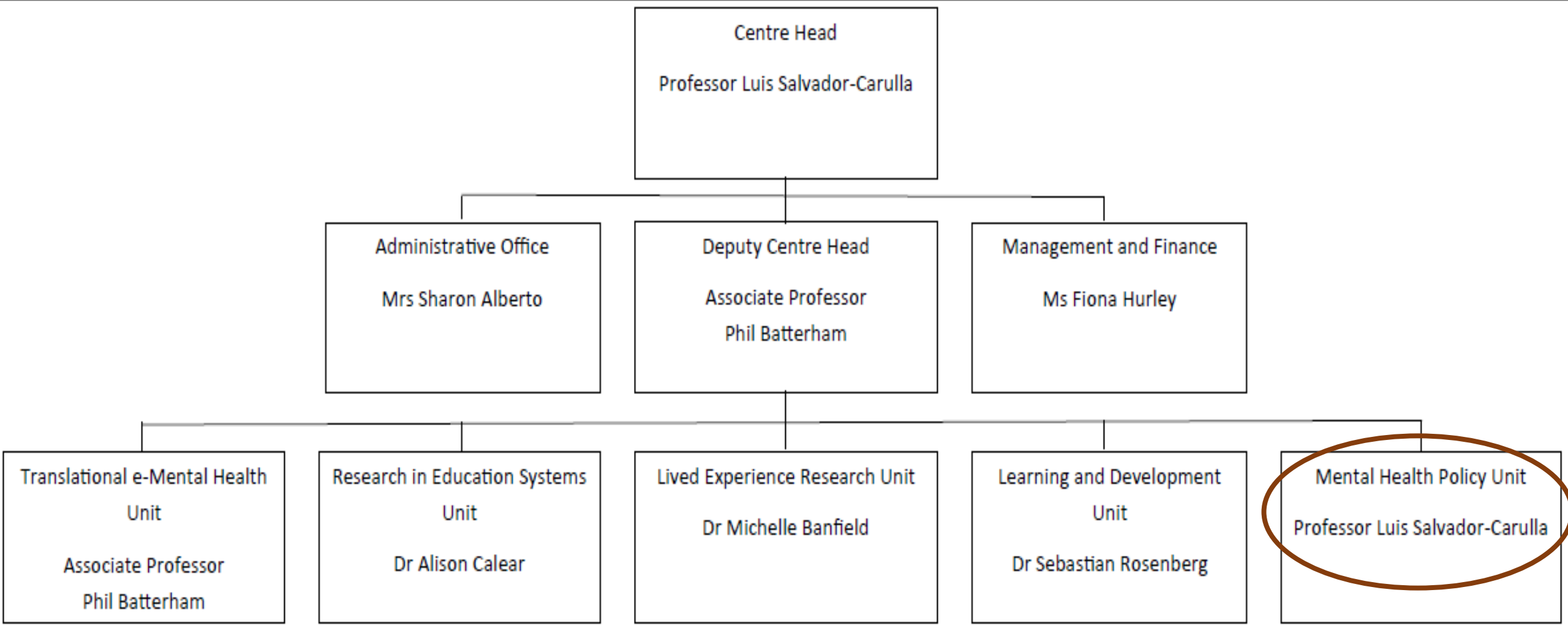
10 August 2017, 9am – 1pm

### **Seminar B: Translating mental health care research into policy in the real world (1 day)**

10 August 2017, 1:30 – 5pm

11 August 2017, 9am – 1:30pm

# CMHR



“

**NOBODY KNEW  
THAT HEALTH  
CARE COULD BE  
SO COMPLICATED.**

— PRESIDENT DONALD TRUMP



Arthur C Evans  
Commissioner of Philadelphia's  
Department of Behavioral  
Health & ID (DBHIDS)



Academia  
Implementation  
Policy and Practice



Michael Marmott  
President World Medical Association  
Director Institute of Health Equity

## POPULATION HEALTH:

- Adoption of the complexity and systems thinking approach
- The shift from EBM to Evidence informed policy: context and environmental factors, prior expert knowledge and experiential knowledge
- WHO Strategy: People-centred integrated care with a focus on EQUITY and EFFICIENCY (waste reduction)

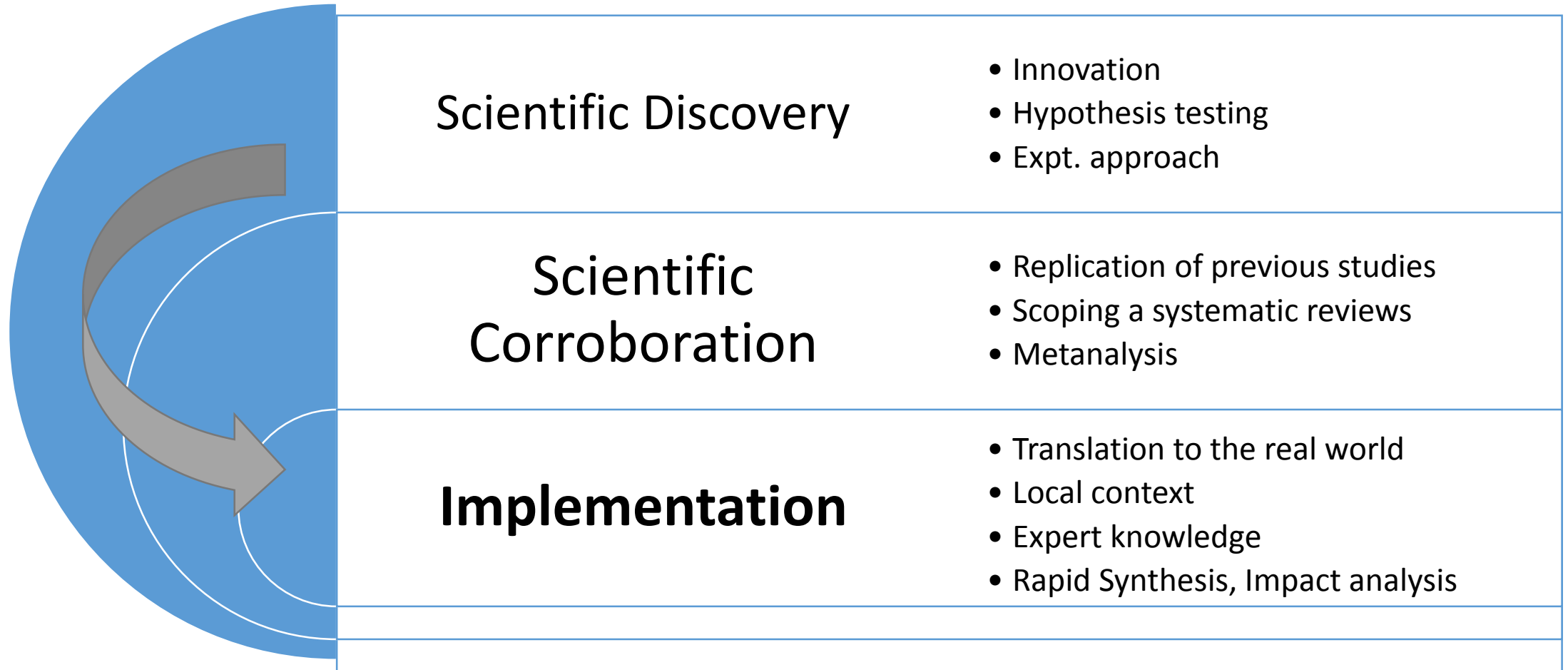
## HEALTH CARE SYSTEMS IN CRISIS (major challenges for MH)

- Increasing costs, market inefficiencies, impact of IT, lack of relevant information for evidence-informed planning
- New payment mechanisms to replace ABF and fee-for-service: bundle payments, population based payment (capitation)
- New organisational approaches: Patient medical homes, accountable care organisations, recovery
- new alliances private/public, health/social
- New models of care

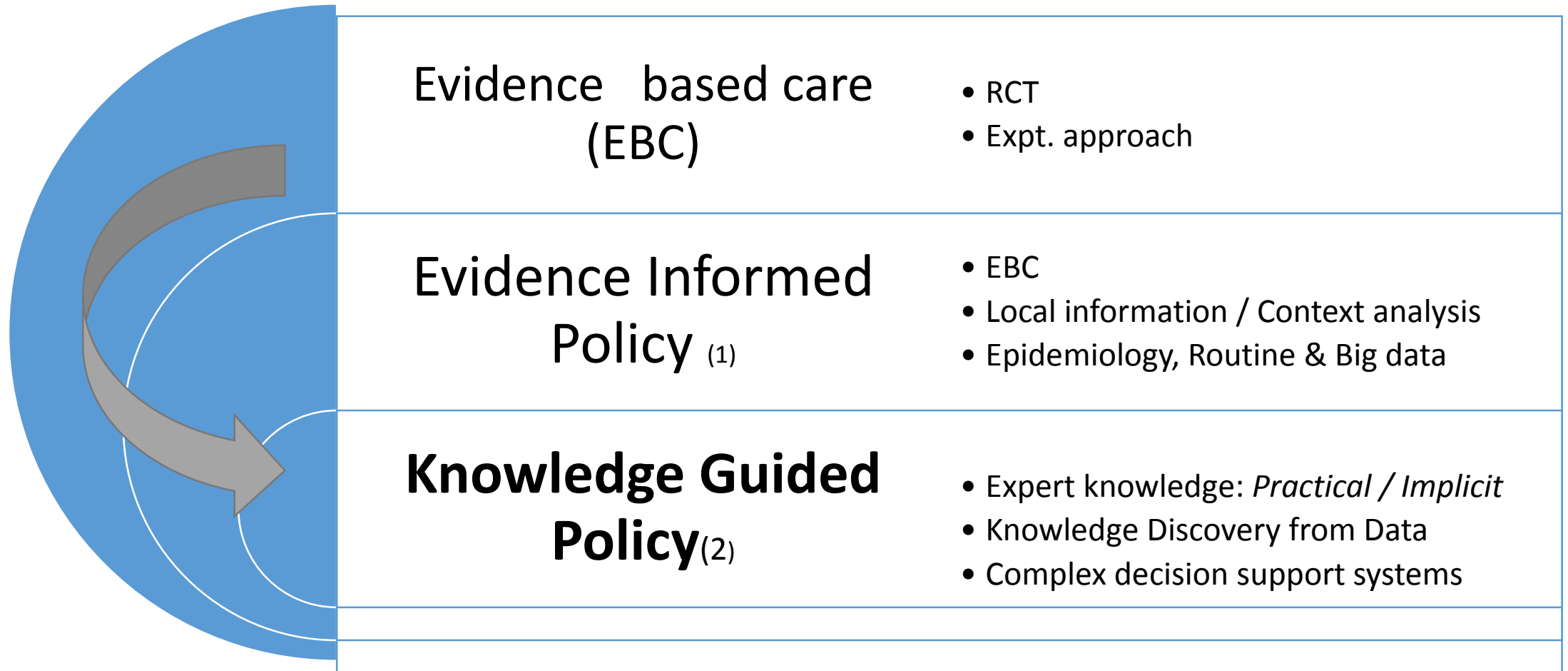
## NEW DEMANDS ON ACADEMIA: IMPLEMENTATION RESEARCH

- Managerial epidemiology, Impact analysis, Context analysis, Spatial analysis
- Move from classical EBM/Qualitative research: Research in local areas, big data analysis, cross design synthesis, modelling and Knowledge Discovery from Data
- Collaborative research: multidisciplinary teams with extensive partnership with public health agencies, providers, stakeholders and health care companies

# The Journey to Implementation Sciences



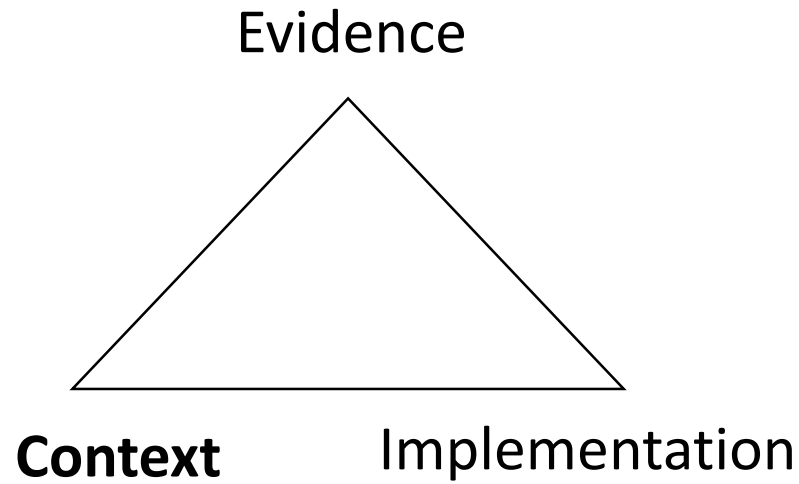
# Paradigm shift: Systems thinking in Policy Decision Making



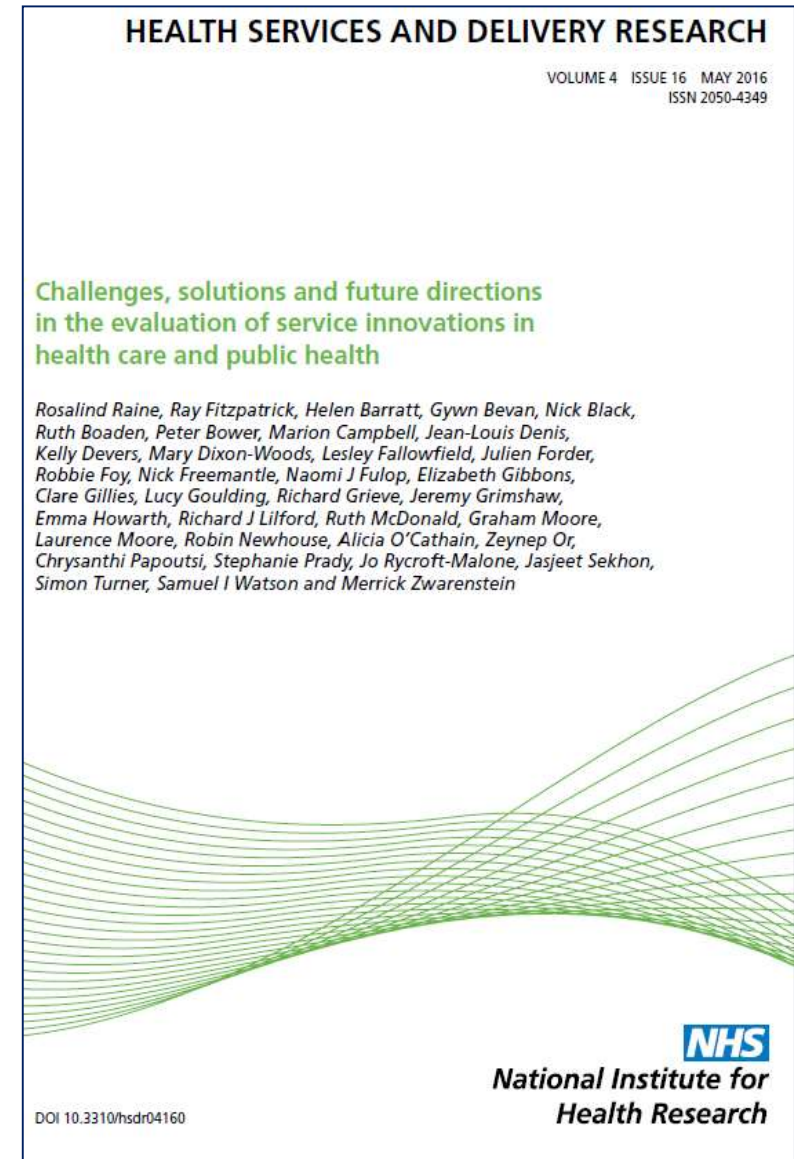
1. Lavis et al, *Health Research Policy and Systems* 2009 (SUPPORT MODEL )

2. Gibert et al, *Health Research Policy and Systems* 2010 (EbCA MODEL)

# Context Analysis



# Expert Knowledge





# Journey of MH Reform:

- Is the Australian Health System efficient?
  - Is there enough awareness on its current problems?
  - Are there guiding drivers for its reform?
- 
- *MH is more complex and vulnerable than other health areas*
  - *MH is already under the major reform in three decades (social and health care)*
  - *MH would be more affected than other health care areas*
- 
- ❖ *We cannot make a journey if do not know where we are:*      **MAPPING & ACCOUNTABILITY...**
  - ❖ *There are no failures if there is monitoring: by doing and knowing we increase organisational learning*      **.....SYSTEMS THINKING...**
  - ❖ *Moving from pendulum to balance strategies*      **... FOR BASIC UNIVERSAL PROVISION OF BALANCED CARE**

# NEW TOOLS FOR MONITORING AND DECISION MAKING

## PHN Grant Programme Guidelines v1.2 2016

- Description of service availability, gap analysis, and an action plan to address these gaps where needed
- “National Health Services Directory (NHSD)” A consistent directory of key primary health services.... capability to view health needs, overlaid with the location of the health services identified from the NHSD; and PHN websites with centralised content and “reporting dashboard”



Kitchin et al.  
Knowing & Governing Cities through Urban Indicators . *Regional studies, regional science*, 2: 6-28, 2015



SYSTEMS THINKING

YOUNG

Distinguishing High vs. Low LEVERAGE?

A BIG PROBLEM in HIGHLY POLITICAL ISSUES

Working  
Re

"SYS  
think of

Somet  
outcome  
wants

Attentio  
What are we  
attention to?

Coca Cola ...  
Goal: reduce  
water  
use  
WATER  
Scarcin

The  
CEO water  
Mandate:  
how  
wat

Political  
Clo

= Balancing  
Loop  
R= Reinforcing  
Loop

ne most  
vious symptomatic  
tions are the  
effective ones

natic fixes  
l with  
ng causes

mental Solutions  
inger ... they're  
gher Risk

fects either  
ings worse  
whole new  
s

OUR  
?

**SYSTEMS THINKING IS AIMED AT IMPROVING DECISION  
MAKING IN A COMPLEX ENVIRONMENT BY INCREASING THE  
KNOWLEDGE-BASE AND REDUCING UNCERTAINTY**

*It does not provide simple-single solutions but it contributes  
to organisational learning*

# *System thinking perspective for health care planning*

- **HEALTH SYSTEMS** *are dynamic social organizations of people, institutions and resources that deliver health care to meet the health needs of target populations mainly by providing health interventions.*
- **SYSTEM THINKING:** provides a means of analysing organisations as a integrated, complex composition of many interconnected agents (human and non-human) that need to work together for the whole to function successfully
- **DYNAMIC SYSTEMS** can be described in terms of their goals, their components , their connections and interactions; and their functions are characterised by
  - HIGH Variability
  - HIGH Uncertainty
  - HIGH Ambiguity
  - DIFFERENT Levels of Organisation: Simple / Complicated / *Complex*
    - *Non-linear, self-adapted, interdependent, context-dependent, time-dependent*

# DECISION SUPPORT SYSTEMS (DSS)

Computer systems that improve, complete, and refine the suggestions of the decision maker and send them back for validation in an iterative process to support the solution

- Intelligent DSS: support experts (do not replace them)
- Machine learning: representation of the input data and generalization of the learnt patterns for use on future unseen data
- Deep learning: automated extraction of complex data representations (features) at different levels of abstraction

# SYSTEMS THINKING vs LINEAR HEALTH CARE PLANNING: *MIND THE GAP!*

*Epidemiology and Psychiatric Sciences* (2015), 24, 42–44. © Cambridge University Press 2014  
doi:10.1017/S2045796014000596

COMM

## The role of geographic context on mental health: lessons from the implementation of mental health atlases in the Basque Country (Spain)

A. Iruin-Sanz<sup>1</sup>, C. Pereira-Rodríguez<sup>2</sup>

Evaluación de la eficiencia técnica de la atención primaria pública en el País Vasco, 2010–2013

ARTICLE in GACETA SANITARIA · DECEMBER 2015

LHS  
26,3

Leadership in Health Services  
Vol. 26 No. 3, 2013

## Deming's systems thinking and quality of healthcare services: a case study

Robert M. Gerst

## Complexity and whole-system change programmes

Brice Dattée, James Barlow

*Journal of Health Services Research & Policy* Vol 15 Suppl 2, 2010: 19–25

TheKingsFund

Ideas that change  
health care

## Place-based systems of care

A way forward for the NHS in England

Authors

Chris Ham

Hugh Alderwick

NHS arm's length bodies and regulatory networks in England: quantitative analysis

Richard McManus<sup>\*†</sup>

*Int J Health Plann Mgmt* 2014; 29: 225–243.

BASQUE COUNTRY (SPAIN) / SCOTLAND NHS (UK)

ALBERTA / ENGLAND (CQC)

# Complex health systems: COMPONENTS

## Environment

Systems, subsystems,  
nested systems  
Boundaries and  
Population determinants

## Agents

Consumers  
Professionals,  
Teams,  
Organisations

## Frameworks & Drivers

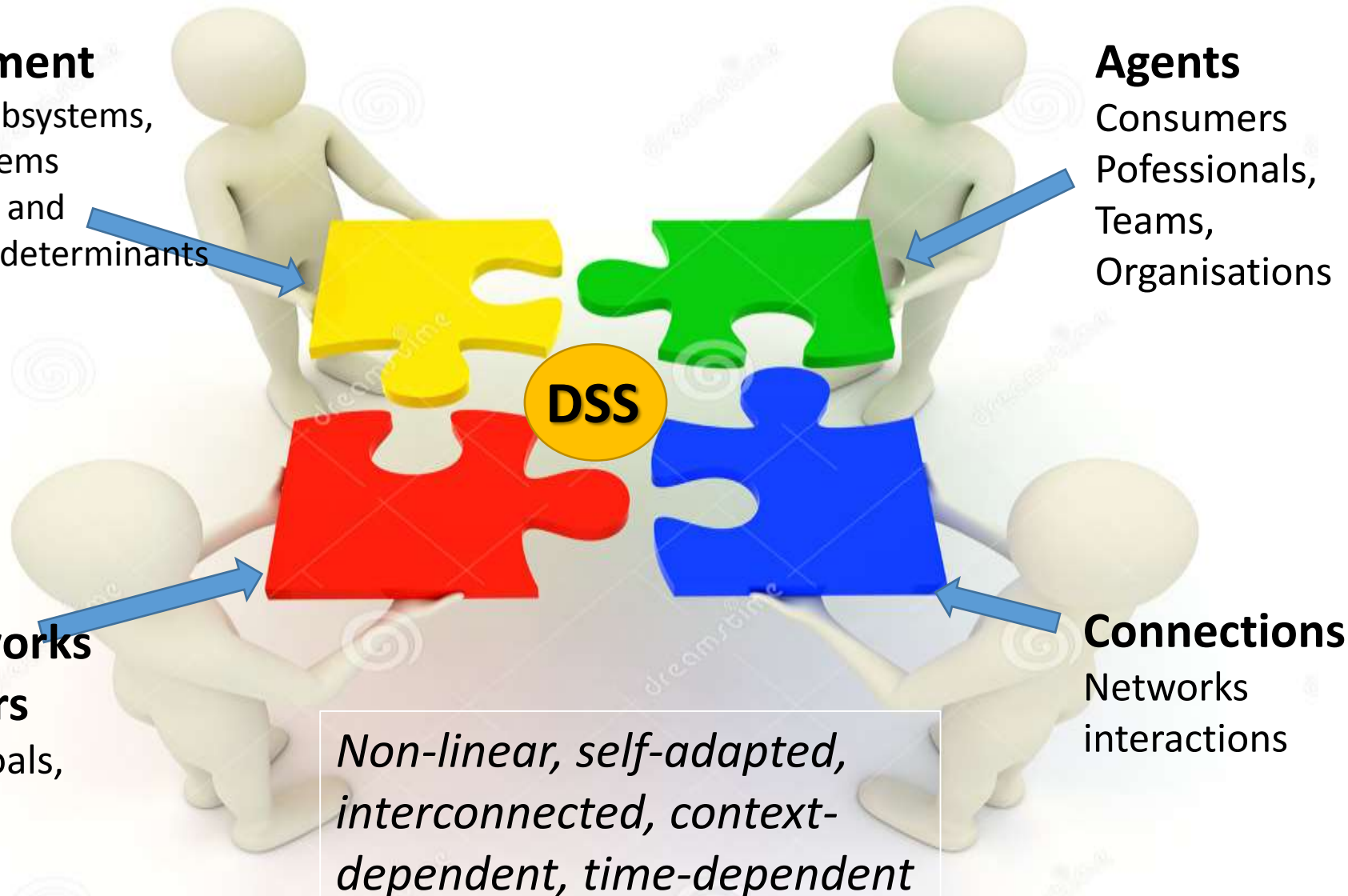
Values, goals,  
targets

## Connections

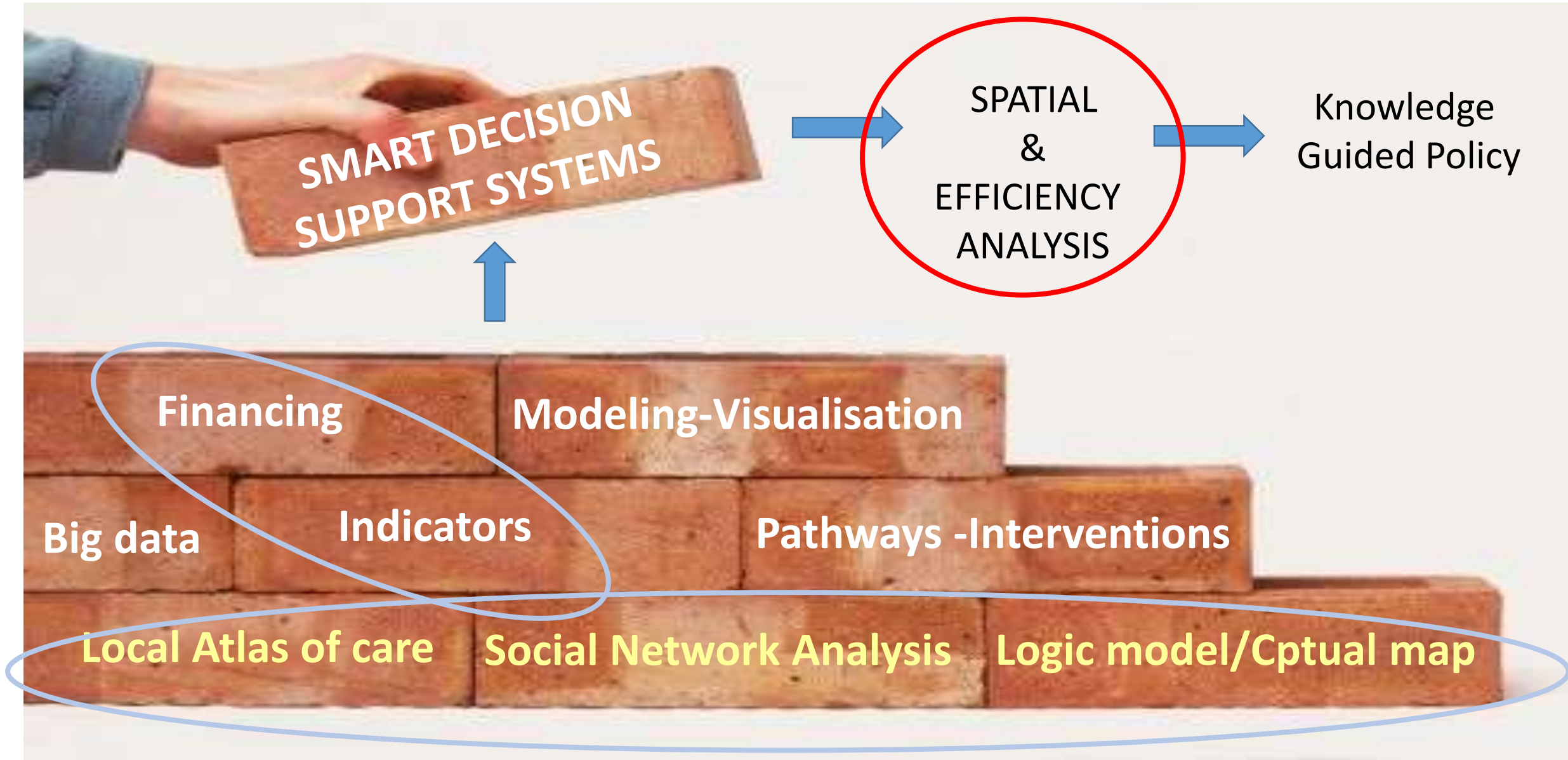
Networks  
interactions

DSS

*Non-linear, self-adapted,  
interconnected, context-  
dependent, time-dependent*



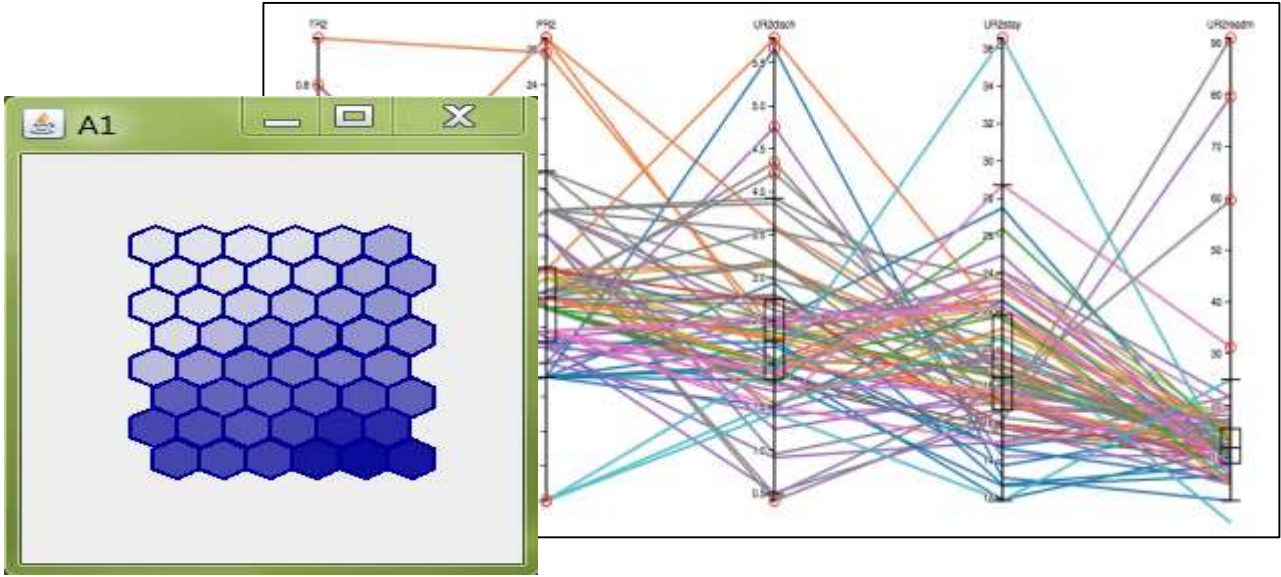
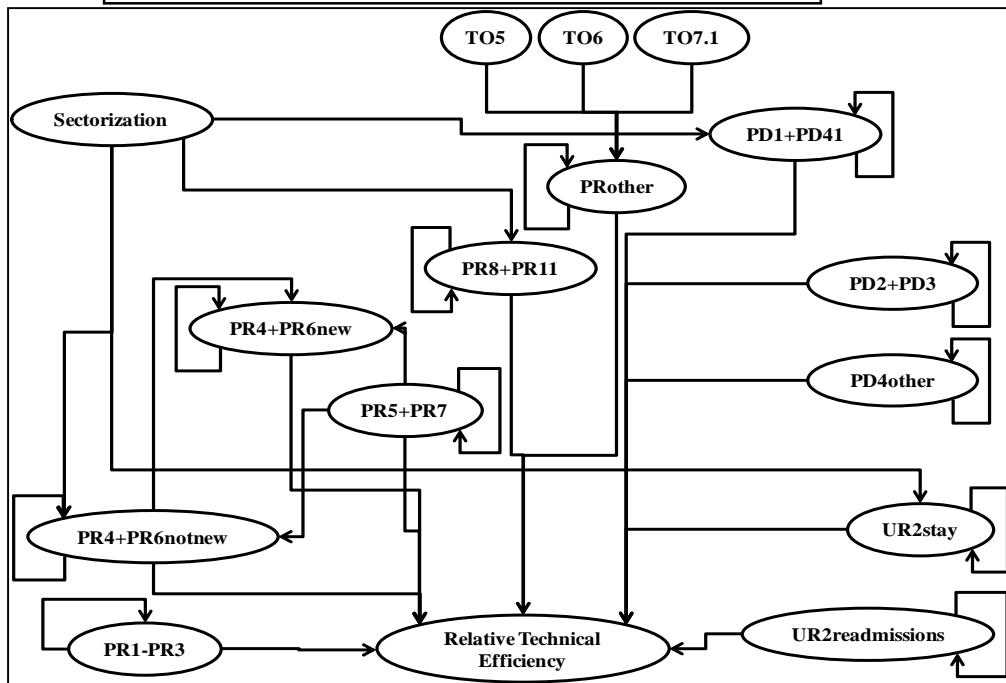
# System thinking in MH Planning



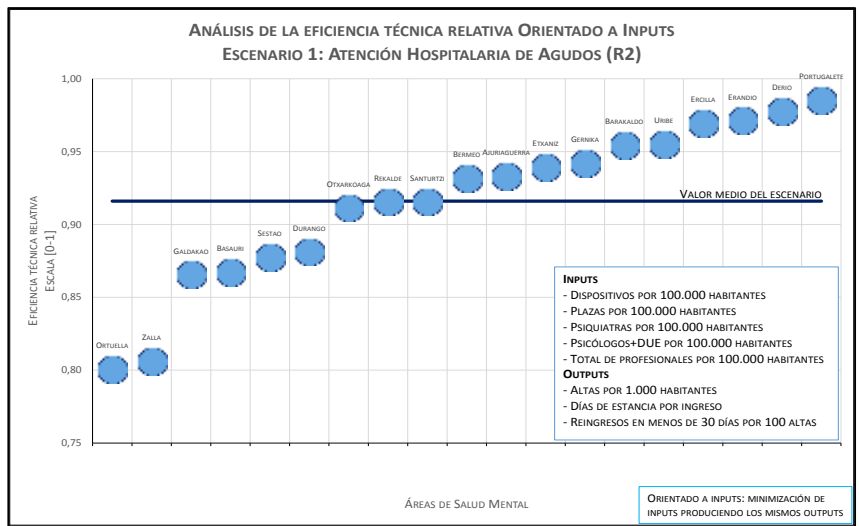


# New visualisation tools for analysis of KPIs

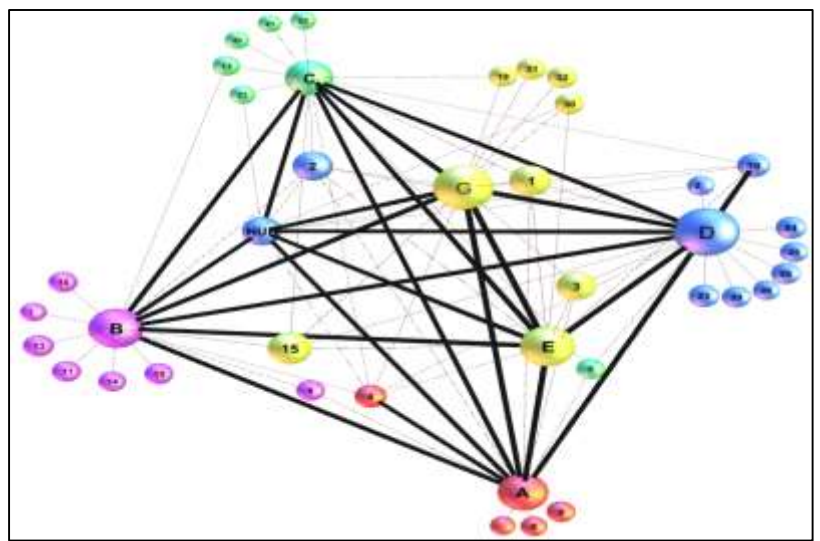
## Modeling Community MH Care



## Relative Efficiency & Benchmarking



## Social Network Analysis

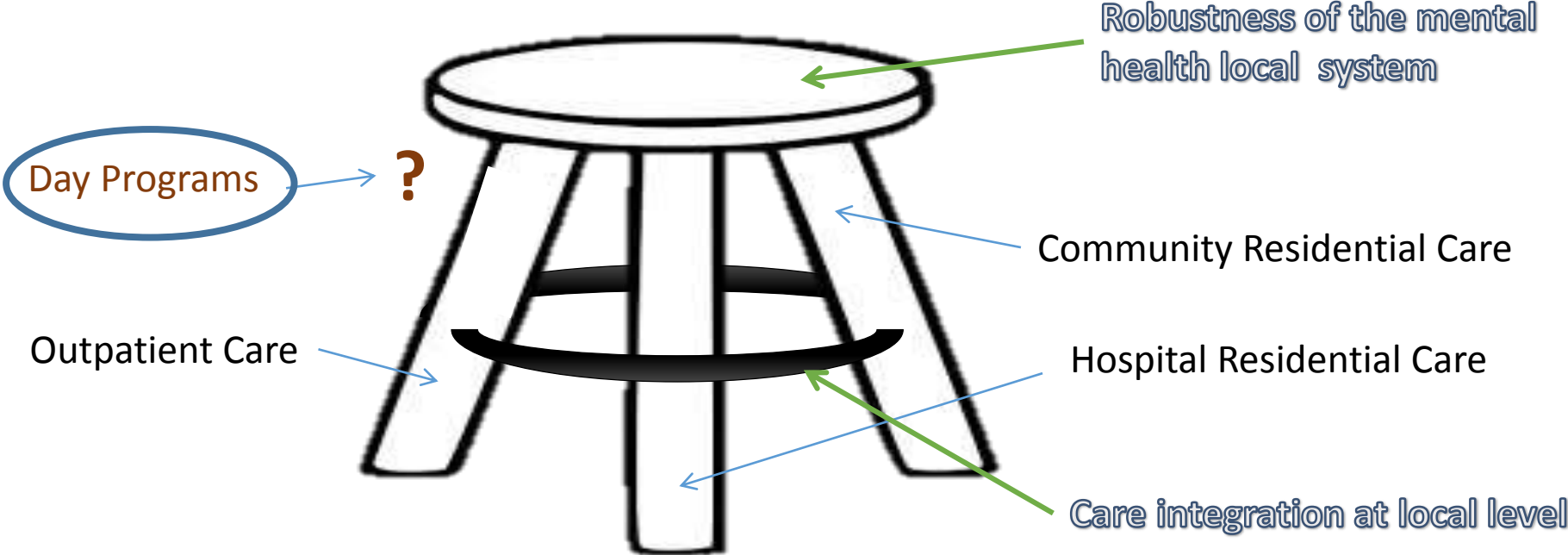




A SYSTEM GAP ANALYSIS DOES NOT IMPLIES SOLUTIONS: IT ONLY GENERATES  
**NEW GUIDED QUESTIONS:**  
*What is the impact of NOT having day care services on the local MH system's efficiency?*



**STOOL MODEL  
COMMUNITY MENTAL HEALTH CARE**



**..... AND ADDS KNOWLEDGE ON THE LOCAL SYSTEM FOR DECISION MAKING**

- *WESTERN SYDNEY: Problem in the structural organisation of service availability*
- *FAR WEST (rural): Problem in the workforce capacity of the local MH system*



# I-CARE



**DESDE-LTC:  
EVALUATION AND  
CLASSIFICATION OF  
SERVICES FOR  
LONG TERM CARE IN  
EUROPE**

Luis Salazar-Carrillo, Eiriko Oshison, Gerardo Walker, David McElduff, Brett Murray, Leif Gunn Språk, Catalina Escobar, Rosalia Esté, Giuseppe Tibaldi and Sarah Johnson for ESCPE-LTC group (Eds.)

OX Catalunya Obra Social



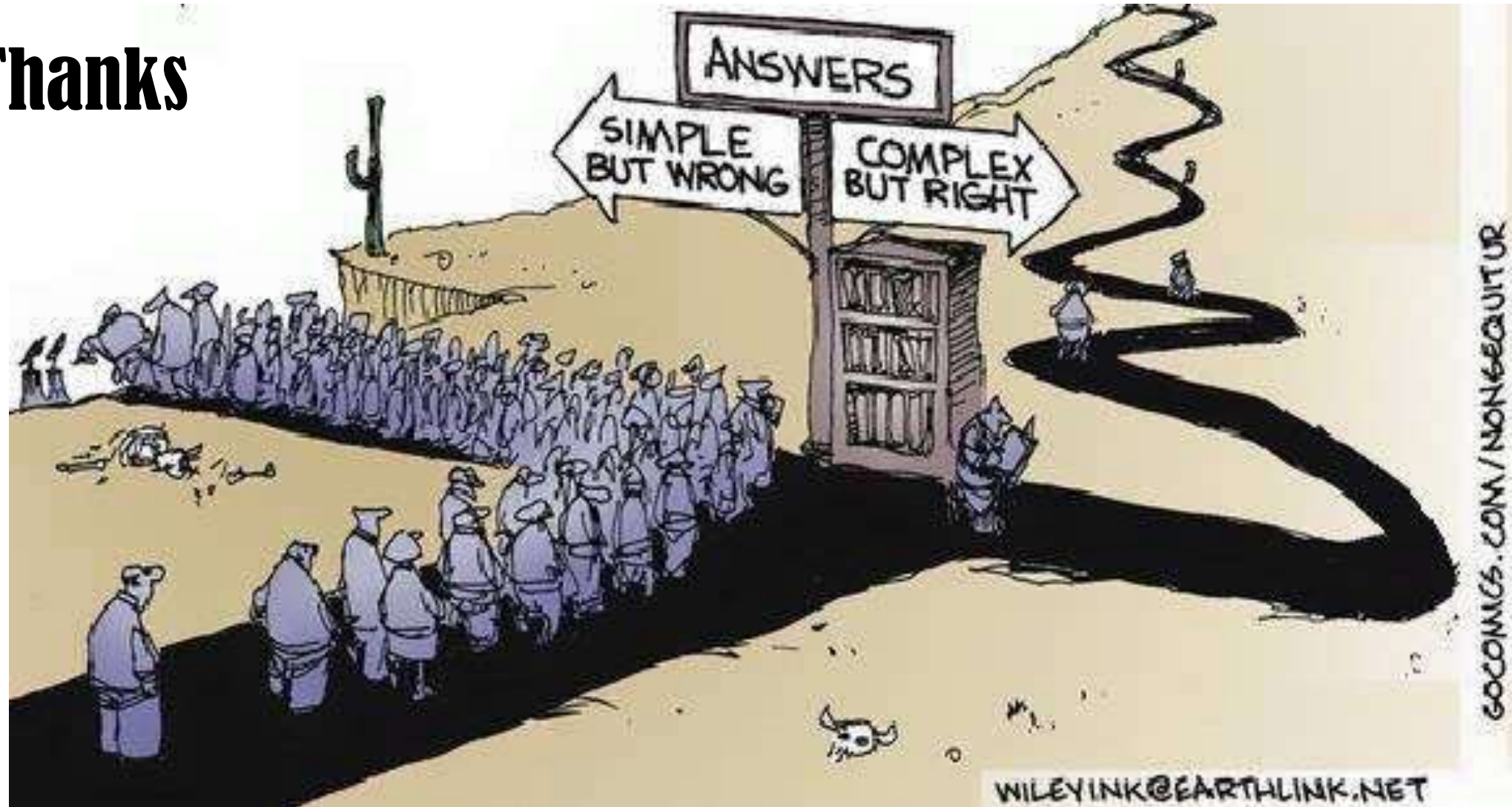
# NEW LINKS BETWEEN ORGANISATIONAL/BUSINESS RESEARCH AND HEALTH CARE RESEARCH

## Four Questions of leadership, quality and efficiency

- Do you know how good you are?
- Do you know where you stand relative to the best?
- Do you know where the variation exists?
- Do you know the rate of improvement over time?



# Thanks



[luis.salvador-carulla@anu.edu.au](mailto:luis.salvador-carulla@anu.edu.au)