



## Overview of Health Systems Science and Systems Thinking for Physicians

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RAHG 702 Health Systems and Health Care Management  
หลักสูตรประกาศนียบัตรบัณฑิตชั้นสูง สาขาวิชาวิทยาศาสตร์การแพทย์คลินิก  
คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี ม.มหิดล

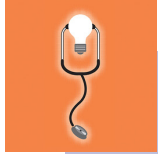
Pix source: ra.mahidol.ac.th



## Outline

1. WHAT:
  - Systems Thinking
  - Health Systems Science
  - Health Care Management
2. WHY: Why Should Physicians Study Health Systems Science?
  - Clinicians vs. Managers
  - Clinicians vs. Changemakers
3. HOW: Learning Health Care Management & Health Systems Science in the Contexts of Thai Medical Schools
4. Case Studies & Discussions (Next Class)

Pix source: online.wsj.com



## What: “Thinking About Thinking” (ชวนคิดเรื่องกระบวนการคิด)

Pix source: online.wsj.com

สร้างจากเรื่องจริง  
BASED ON TRUE STORY

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part1\_Sub

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“But...Am I treating symptoms or diseases?”



Pix source: [www.everydayhealth.com](http://www.everydayhealth.com)



**Solutions are not right or wrong, but better or worse**

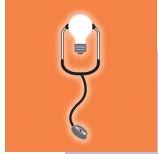
**Solutions can lead to unforeseen consequences**

**Every solution ramifies throughout the systems**

**Multiple stakeholders with conflicted agenda**

**No clear solutions**

Pix Source: <https://qubeshub.org/community/groups/summer2018>



## What: Health Systems Science

Pix source: [online.wsj.com](http://online.wsj.com)

## Physician vs. Health Systems Scientist

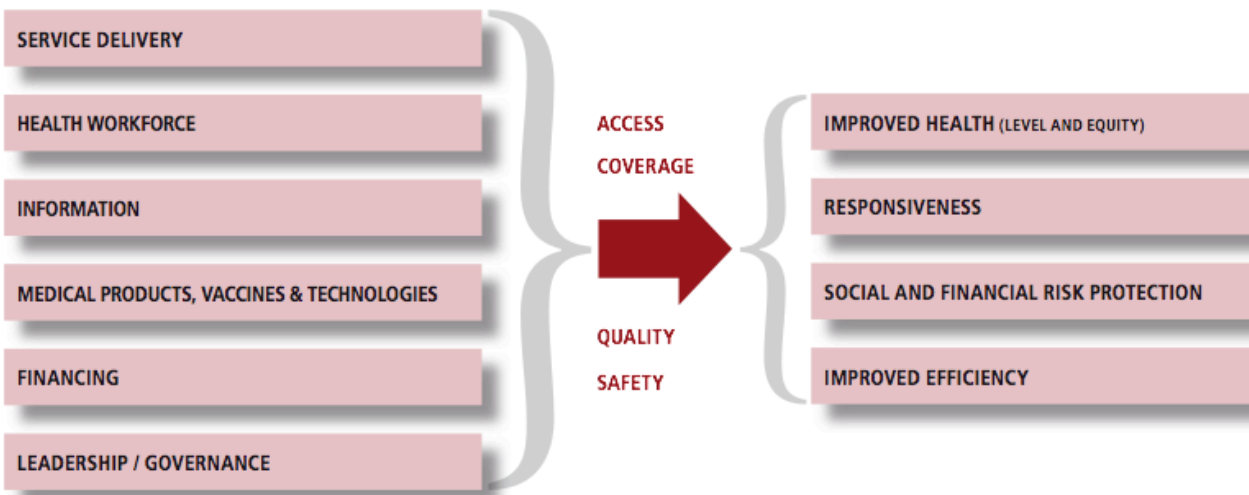


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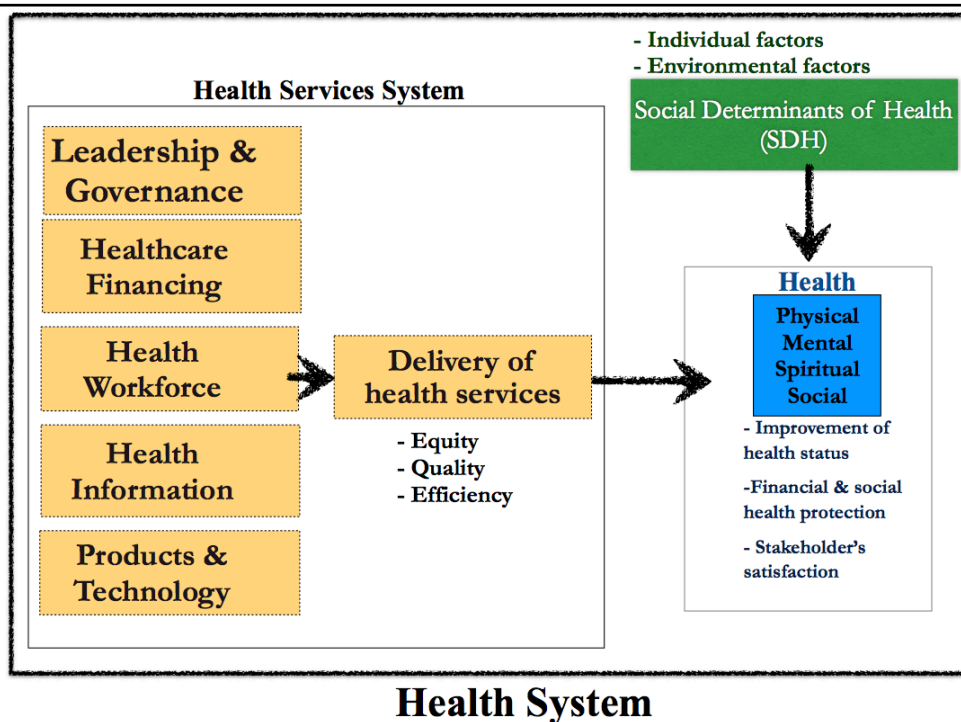
## THE WHO HEALTH SYSTEM FRAMEWORK

SYSTEM BUILDING BLOCKS

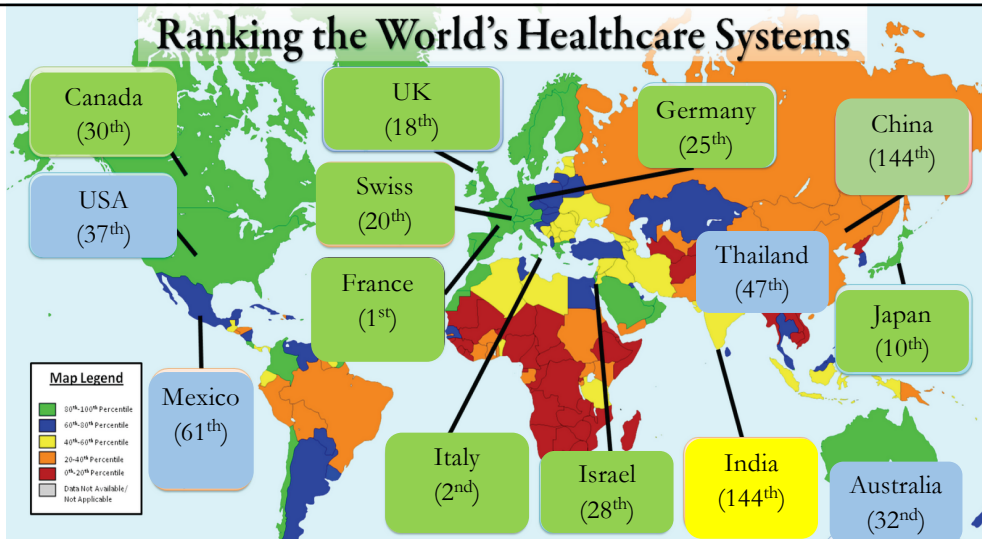
OVERALL GOALS / OUTCOMES



Pix source: WHO's framework for action. (2007)



## Ranking the World's Healthcare Systems

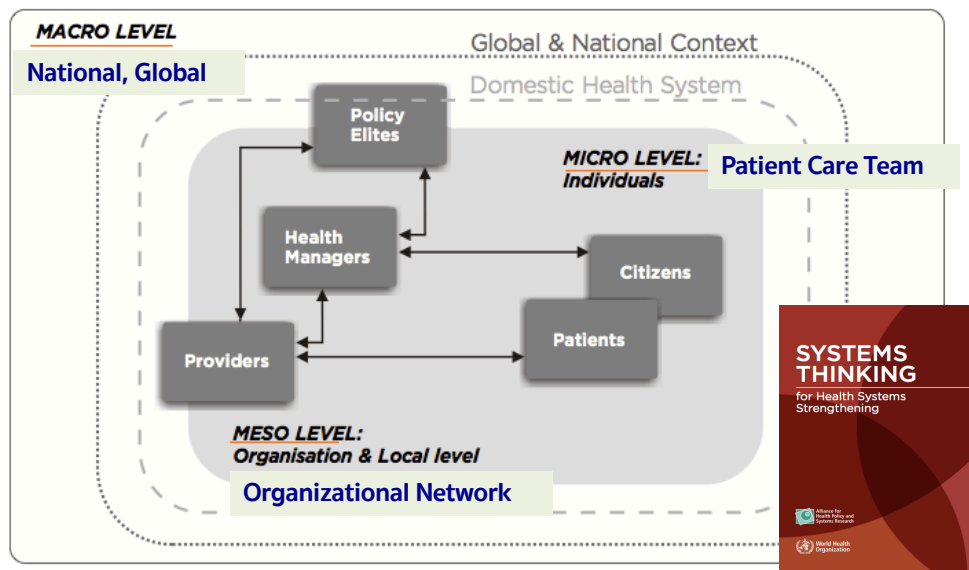


### The World Health Report 2000:

- The WHO's first major analysis of the world's healthcare systems.
- Health systems of all member states were analyzed and ranked by eight measures that explain how health systems perform.
- Thailand was ranked the 47<sup>th</sup> on the overall health systems performance.

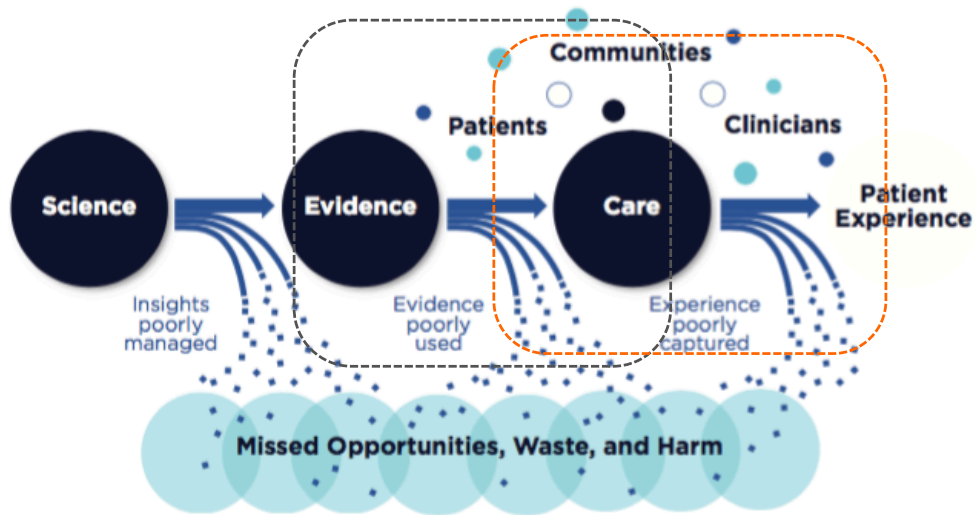
Source: WHO (2000). The World Health Report 2000; Pix source: Modified from: buelahman.files.wordpress.com

## 3 Major Levels of Health Systems



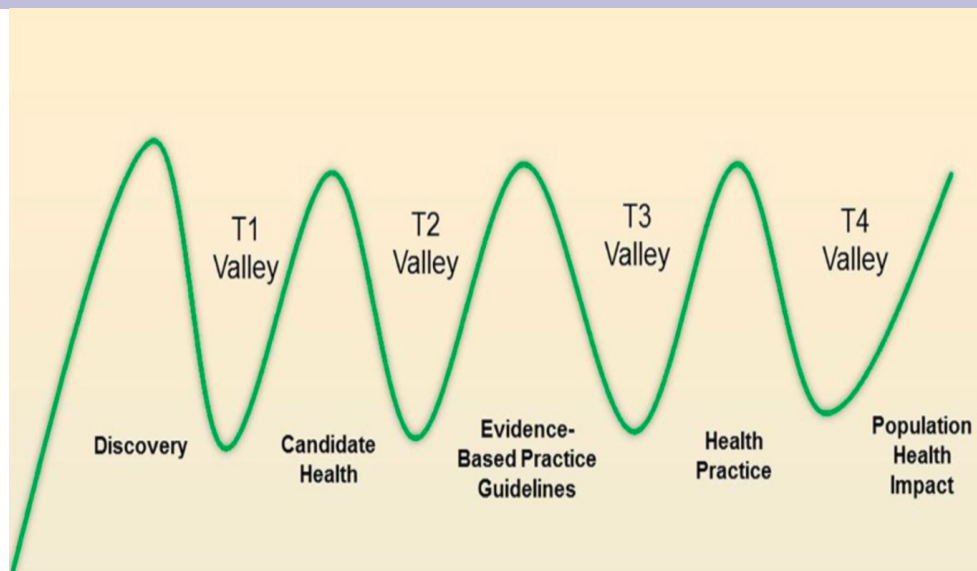
Pix source: de Savigny & Adam (2009)

## Hills & Valleys from Discovery from Science to Population Health



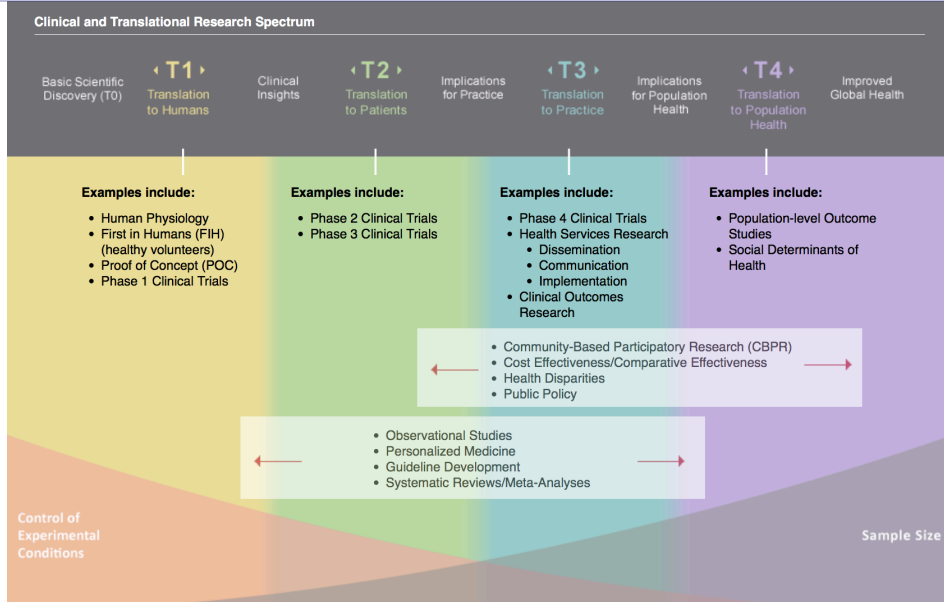
Source: Adapted from the Institute of Medicine (2013), FIGURE S-2 Schematic of the health care system today

## Hills & Valleys from Discovery from Science to Population Health



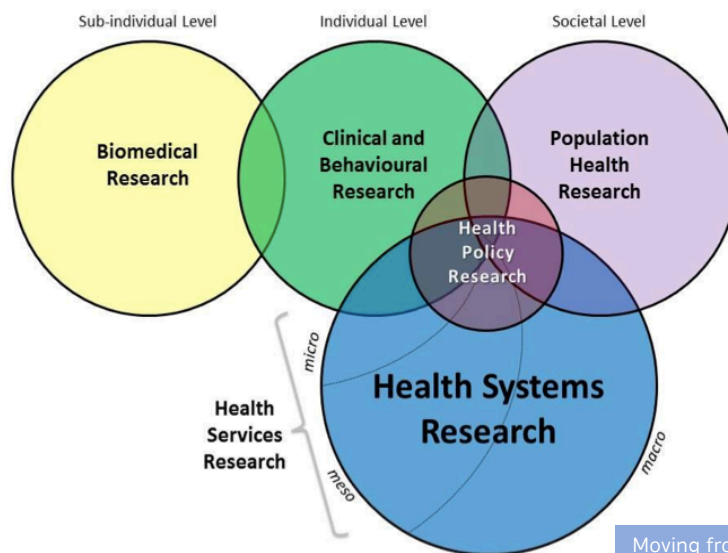
Source: Adapted from Meslin EM, Blasimme A, Cambon-Thomsen A. Mapping the translational science policy 'valley of death'. Clin Transl Med. SpringerOpen; 2013;2:14.)

# Hills & Valleys from Discovery from Science to Population Health



Source: <https://catalyst.harvard.edu/pathfinder/>

# Creating Knowledge for System-based Practice

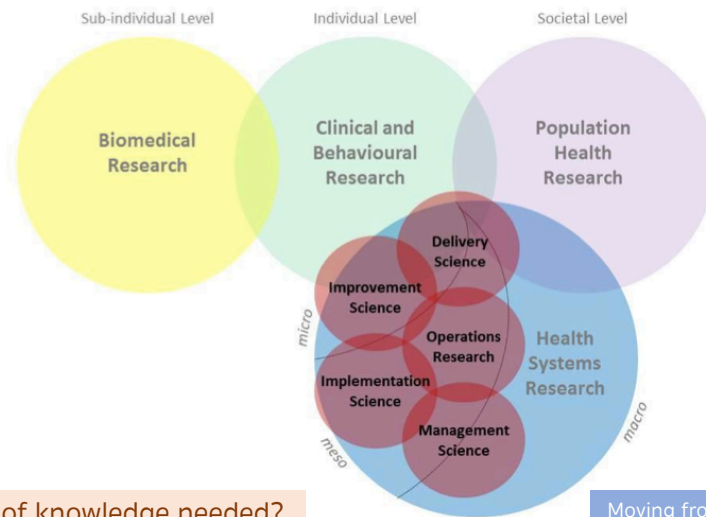


Moving from biomedical & clinical research to health policy & systems research

Figure source: Hoffman (2012) et al.



## Distributing Knowledge for System-based Practice



➤ Q: Different kinds of knowledge needed?

Moving from biomedical & clinical research to health policy & systems research

Figure source: Hoffman (2012) et al.

## "Health Systems Science"

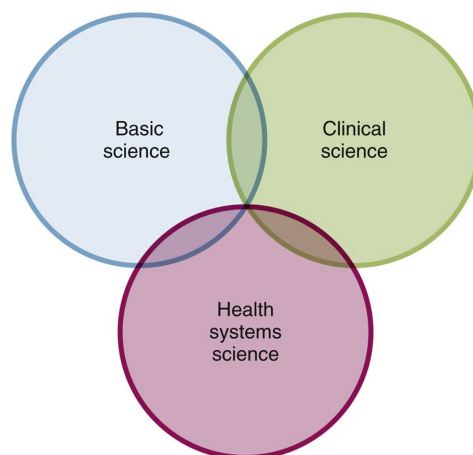
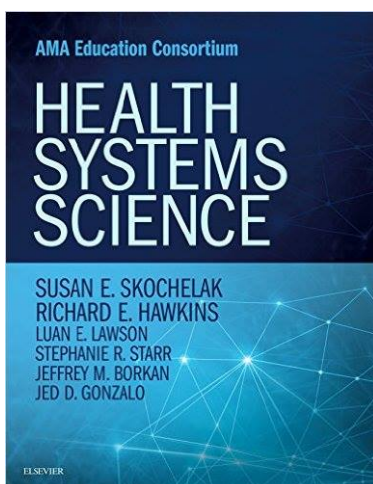
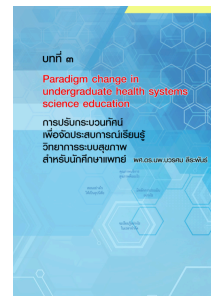
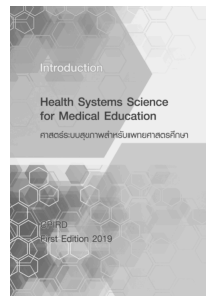
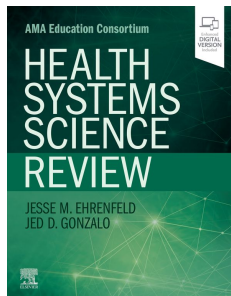


Fig. 1.4 The three pillar model of medical education. Health Systems Science—the "third science"—complements and synergizes with basic and clinical science, and addresses subject areas including value-based care, teamwork, and health system improvement.

Source: Skochelak et al. (2017); Pix source: amazon.com



## เรื่องเล่าที่ความ

### กฎแอดดอกส์สำคัญ ที่ทำให้การเป็น “แพทย์” นั้นมีความหมาย

นพ.ศุภชัย ครอบครองชัย  
พญ.ทักษิณา ครอบครองชัย

“ถ้าแพทย์คนหนึ่งดูแลเอาใจใส่คนไข้อย่างเต็มที่ แต่ผลการรักษาออกมาไม่ดีตั้งหวังอะไรที่ขาดหายไป และเราสามารถพัฒนาให้ดีกว่านี้ได้หรือไม่?”

ฉันนั่งทบทวน ใคร่ครวญตัวเองกับคำถามนี้ ในกลางดึกคืนหนึ่ง หลังจากที่สูญเสียคนไข้ประจำคนหนึ่งที่ผูกพันกันมากว่าห้าปี อะไรที่ขาดหายไปและยังทำให้ดีกว่านี้ได้ ความรู้มุมมอง หรือทักษะ?

เมื่อครั้งเป็นนักศึกษาแพทย์ ฉันเคยเข้าใจว่า การตั้งใจเรียนความรู้ทางการแพทย์เพียงอย่างเดียว การท่องตำรา การตั้งใจดูคนไข้ในคลินิกนั้น จะช่วยให้ฉันมีความสามารถเพียงพอที่จะเป็นที่พึ่งให้กับคนไข้ให้กับประชาชนที่ฉันจะออกไปดูแลได้ วันที่จบการศึกษาออกไปด้วยเกียรติคุณ ฉันเคยคิดว่าตัวเองว่าฉันพร้อมแล้วกับการที่จะช่วยเป็นฟันเฟืองหนึ่งในการพัฒนาระบบสุขภาพไทย ฉันพร้อมแล้ว...

แต่แล้วการที่ได้ออกไปใช้ทุนในโรงพยาบาลชุมชน ก็ทำให้ฉันได้เรียนรู้อะไรใหม่ ๆ และแน่นอนว่าบทเรียนอันล้ำค่า จากคนไข้ อาจารย์ใหญ่ที่มีชีวิต ที่ฉันจะไม่มีวันลืม นั่นคือ “ศาสตร์”

และที่สำคัญที่สุด คือมุมมองการคิดเชิงระบบ (systems thinking) ที่จะช่วยให้แพทย์คิดเชื่อมโยงสิ่งต่าง ๆ ที่เกิดขึ้นอย่างสลับซับซ้อนได้อย่างเข้าใจ ถูกต้องและชัดเจน สามารถปรับมุมมอง การกระทำให้สอดคล้องกับบริบทที่แตกต่างและเปลี่ยนแปลงอยู่ตลอดเวลาได้ ความคิดเชิงระบบนี้คงช่วยให้ฉันเข้าใจศาสตร์และคนไข้คนอื่น ๆ ได้มากกว่านี้ เข้าใจว่าไม่เพียงข้อมูลของคนไข้เท่านั้นที่หมอต้องรับรู้และเข้าใจ ยังมององค์ประกอบอื่น ๆ ที่เกี่ยวข้องอีกหลายส่วน ทั้งครอบครัว สังคม และระบบอื่น ๆ ที่ไม่สามารถแยกคิดจากกันได้

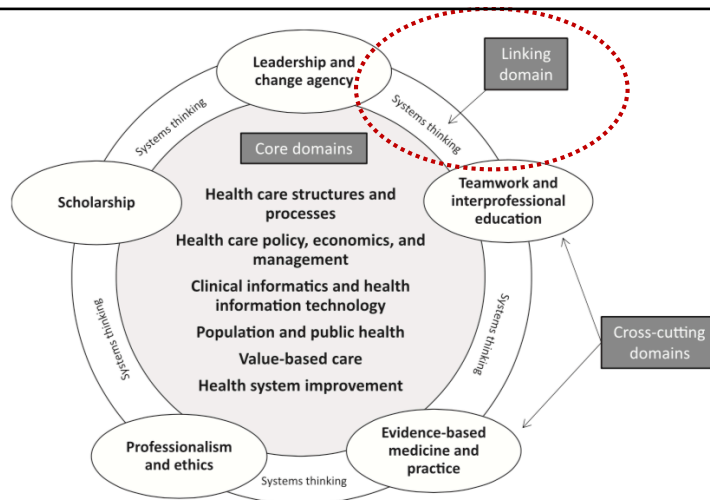
“ศาสตร์ระบบสุขภาพ” (Health Systems Science) จึงเปรียบเสมือนกฎแอดดอกส์สำคัญที่จะช่วยให้ประชาชนใหญ่ ให้แพทย์ได้ออกไปใช้ศาสตร์และศิลป์ในการเป็นที่พึ่งให้กับประชาชน เยียวยาทั้งโรคภัย ผู้คน สังคม และสร้างสรรค์สิ่งดีงามเพื่อพัฒนาระบบสุขภาพไทยอย่างไร้ขีดจำกัด

นี่คือ “ศาสตร์แห่งความหวัง” ศาสตร์แห่งการคลายความทุกข์และสร้างความสุขให้ทั้งผู้รักษาและผู้รับการรักษา ศาสตร์ที่จะสร้างแพทย์ให้เป็นผู้นำแห่งการปรับเปลี่ยนระบบสุขภาพเพื่อเป็นที่พึ่งให้กับประชาชน

นี่คือ แสงสว่างที่ปลายอุโมงค์ ของการพัฒนาประเทศไทยอย่างแท้จริง

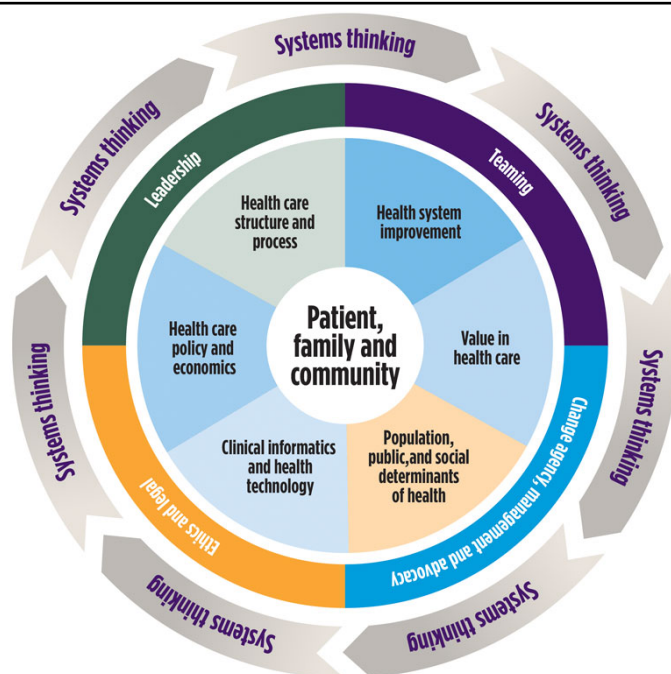
“หากเราเรียนแพทย์อย่างที่ผ่านมา... เราจะต้องพบเจอปัญหาอะไรบ้างในชีวิตการทำงาน และเราจะมีส่วนร่วมแก้ไขอย่างไร และหากเราได้เรียนรู้ HSS เพื่อนำไปปรับใช้...ชีวิตการทำงานของเราจะเปลี่ยนไปอย่างไร?”

เนื้อหาภายใน HSS handbook เล่มนี้มีคำตอบ



**Figure 1** Core, cross-cutting, and linking domains for a health systems science (HSS) curricular framework. Core curricular domains are content areas that align directly with HSS. The cross-cutting domains are content areas that traditionally may have been included in undergraduate medical education curricula, but have a new context in the HSS. The one linking domain, systems thinking, unifies or links the core curricular or cross-cutting domains to other core curricular or cross-cutting domains (internal linking, depicted in this figure) and to other areas of the curriculum, such as the basic and clinical sciences (external linking, not depicted in this figure).

Source: Gonzalo JD, Dekhtyar M, Starr SR, Borkan J, Brunett P, Fancher T, et al. Health Systems Science Curricula in Undergraduate Medical Education: Identifying and Defining a Potential Curricular Framework. *Acad Med. Academic Medicine*; 2017;92:123–31.



Pix source: [www.ama-assn.org/education/accelerating-change-medical-education/teaching-health-systems-science](http://www.ama-assn.org/education/accelerating-change-medical-education/teaching-health-systems-science)

## What this Curricular Framework Really Mean?

### ➤ Core, Cross-Cutting, and Linking Domain Definitions for HSS

#### 1. Core curricular domains:

- content areas that **align directly** with HSS.

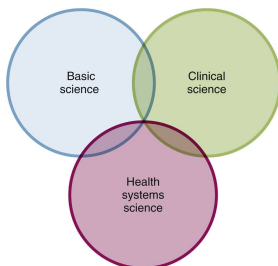
#### 2. Cross-cutting domains:

- content areas that may have been **traditionally included** in an undergraduate medical education curriculum, but in this analysis, these domains were emphasized within the context of the HSS.

#### 3. Linking domain:

- content that **unifies or links** the core curricular or cross-cutting domains to other core curricular or cross-cutting domains (internal linking) and to other areas of the curriculum, such as the basic and clinical sciences (external linking).

## Physicians as Problem Solvers for Patients & Populations: Not Just Another Separated Area of Study, Not Just A Specialty of "Health Systems Scientists"



### If we are looking from a Problem-Solving Perspective...

#### 1. *Basic Science*

- Physicians understanding and solving the unknown by scientific methods

#### 2. *Clinical Science*

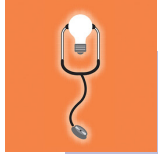
- Physicians solving patient's clinical problems by using clinical competencies

#### 3. *Health Systems Science*

- Physicians solving health problems of patients and populations by using competencies beyond clinical skills

Fig 1. The Venn diagram model of medical education. Health systems science is the intersection of basic and clinical science, and the intersection of basic and clinical science is the intersection of basic and clinical science.

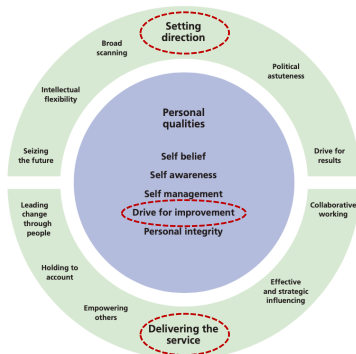
Pix source: Skochelak et al. (2017). [www.wamathai.com/listened/dilemma](http://www.wamathai.com/listened/dilemma)



## What: Health Care Management

Pix source: online.wsj.com

## Manager as Problem Solvers for Organizations: Management is a function of leaders, not just a rank of authorities.



### If we are looking from a Problem-Solving Perspective...

#### 1. Health Care Managers

- Not just the hospital directors
- Not just MOPH policymakers
- Not just the authorities who run healthcare organizations

#### 2. Changemakers/Change Agents

- Any physicians who lead the healthcare teams to solving complex health problems of patients and populations by using competencies beyond clinical skills

Pix source: Skochelak et al. (2017). The NHS Leadership Qualities Framework. Source: NHS Institute for Innovation and Improvement (2010).

RESEARCH ARTICLE

Open Access

## Clinicians in management: a qualitative study of managers' use of influence strategies in hospitals

Ivan Spehar<sup>\*</sup>, Jan C Frich and Lars Erik Kjekshus

### Abstract

**Background:** Combining a professional and managerial role can be challenging for doctors and nurses. We aimed to explore influence strategies used by doctors and nurses who are managers in hospitals with a model of unitary and profession neutral management at all levels.

**Methods:** We did a study based on data from interviews and observations of 30 managers with a clinical background in Norwegian hospitals.

**Results:** Managers with a nursing background argued that medical doctors could more easily gain support for their views. Nurses reported deliberately not disclosing their professional background, and could use a doctor as their agent to achieve a strategic advantage. Doctors believed that they had to use their power as experts to influence peers. Doctors attempted to be medical role models, while nurses spoke of being a role model in more general terms. Managers who were not able to influence the system directly found informal workarounds. We did not identify horizontal strategies in the observations and accounts given by the managers in our study.

**Conclusions:** Managers' professional background may be both a resource and constraint, and also determine the influence strategies they use. Professional roles and influence strategies should be a theme in leadership development programs for health professionals.

**Keywords:** Norway, Professions, Power, Roles, Managers, Health care, Doctor, Nurse

RESEARCH ARTICLE

Open Access

## Clinicians' experiences of becoming a clinical manager: a qualitative study

Ivan Spehar<sup>\*</sup>, Jan C Frich and Lars Erik Kjekshus

### Abstract

**Background:** There has been an increased interest in recruiting health professionals with a clinical background to management positions in health care. We know little about the factors that influence individuals' decisions to engage in management. The aim of this study is to explore clinicians' journeys towards management positions in hospitals, in order to identify potential drivers and barriers to management recruitment and development.

**Methods:** We did a qualitative study which included in-depth interviews with 30 clinicians in middle and first-line management positions in Norwegian hospitals. In addition, participant observation was conducted with 20 of the participants. The informants were recruited from medical and surgical departments, and most had professional backgrounds as medical doctors or nurses. Interviews were analyzed by systemic text condensation.

**Results:** We found that there were three phases in clinicians' journey into management; the development of leadership awareness, taking on the manager role and the experience of entering management. Participants' experiences suggest that there are different journeys into management, in which both external and internal pressure emerged as a recurrent theme. They had not anticipated a career in clinical management, and experienced that they had been persuaded to take the position. Being thrown into the position, without being sufficiently prepared for the task, was a common experience among participants. Being left to themselves, they had to learn management "on the fly". Some were frustrated in their role due to increasing administrative workloads, without being able to delegate work effectively.

**Conclusions:** Path dependency and social pressure seems to influence clinicians' decisions to enter into management positions. Hospital organizations should formalize pathways into management, in order to identify, attract, and retain the most qualified talents. Top managers should make sure that necessary support functions are available locally, especially for early stage clinician managers.

**Keywords:** Leadership, Administration and organization, Health services administration, Nurse manager, Doctor, Qualitative research

# Clinicians' contributions to healthcare management

ROBERT BULL

Robert Bull is the Clinical Leader of Occupational Therapy at Gisborne Hospital, New Zealand. This paper was completed as part of the postgraduate diploma in health service management at Massey University, Palmerston North, New Zealand.

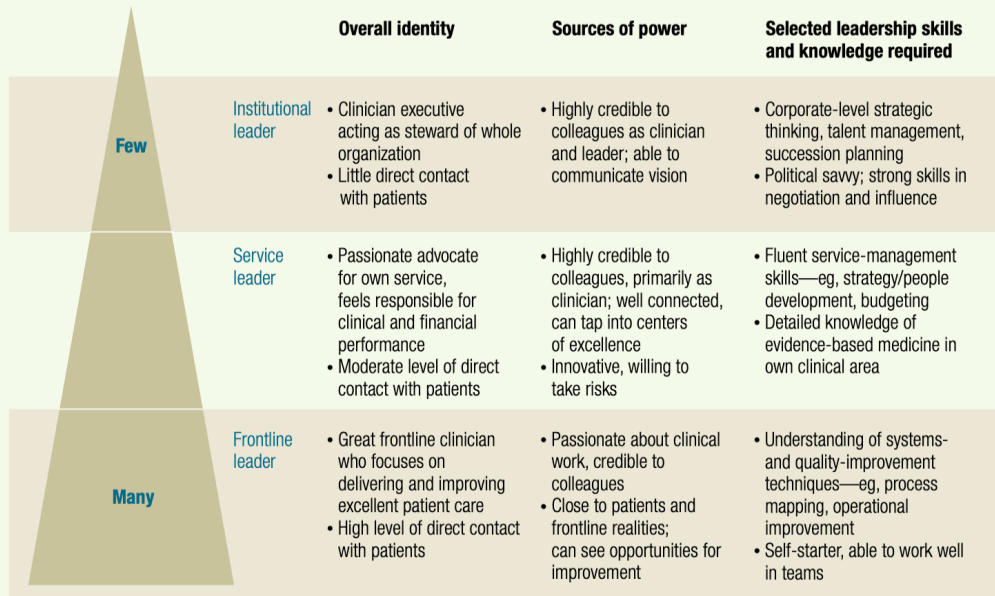
## Abstract

*Primary tasks for clinical directors are to disseminate information to colleagues, provide feedback to senior professional managers, and to play key roles in strategic planning and resource allocation in health services. These tasks are seen to reduce barriers between clinicians and management. The application of clinical directorates across healthcare organisations is inconsistent and ambiguous. When set clear guidelines, clinical directors can impact on the decision-making process within senior management. As further applications of clinical directors in management occur, development of the role is required to realise the potential.*

EXHIBIT

### Three ways to lead

Research suggests that at least three distinct types of clinical leaders exist.



Source: <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/when-clinicians-lead>



## When clinicians lead

Health care systems that are serious about transforming themselves must harness the energies of their clinicians as organizational leaders.

Source: <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/when-clinicians-lead>

## Supporting real learning

Any effort to encourage clinical leadership has to include support for professional development. But (perhaps surprisingly) the best starting point is not to create or commission a training course. Health care organizations must first define what they want from their clinical leaders—what skills and attitudes they hope to encourage, whether there are differences across professions or roles, and where the need to develop leadership is greatest. They can then target their efforts wisely and help clinicians identify and overcome any shortcomings.

The US Army's West Point Leadership Academy, for example, recruits, trains, and develops leaders in accordance with the explicitly defined leadership model of the army and its threefold "be, know, do" philosophy. From the moment new trainees arrive at West Point, this model is emphasized, along with the need for trainees to demonstrate that it has an ongoing influence on their development. Some health care organizations with a development focus have made their expectations similarly explicit: Heart of England NHS Foundation Trust, in Birmingham, UK, and New York Presbyterian Hospital have worked hard to define their expectations of clinical leaders at different levels. This enables them to target their development programs very precisely and to create enough leaders to meet their organizational needs.



## What: Systems Thinking

Pix source: [online.wsj.com](https://www.online.wsj.com)



# Interdisciplinarity and Systems Science to Improve Population Health

## A View from the NIH Office of Behavioral and Social Sciences Research

Patricia L. Mabry, PhD, Deborah H. Olster, PhD, Glen D. Morgan, PhD, David B. Abrams, PhD

**Abstract:** Fueled by the rapid pace of discovery, humankind's ability to understand the ultimate causes of preventable common disease burdens and to identify solutions is now reaching a revolutionary tipping point. Achieving optimal health and well-being for all members of society lies as much in the understanding of the factors identified by the behavioral, social, and public health sciences as by the biological ones. Accumulating advances in mathematical modeling, informatics, imaging, sensor technology, and communication tools have stimulated several converging trends in science: an emerging understanding of epigenomic regulation; dramatic successes in achieving population health-behavior changes; and improved scientific rigor in behavioral, social, and economic sciences. Fostering stronger interdisciplinary partnerships to bring together the behavioral-social-ecologic models of multilevel "causes of the causes" and the molecular, cellular, and, ultimately, physiological bases of health and disease will facilitate breakthroughs to improve the public's health.

The strategic vision of the Office of Behavioral and Social Sciences Research (OBSSR) at the National Institutes of Health (NIH) is rooted in a collaborative approach to addressing the complex and multidimensional issues that challenge the public's health. This paper describes OBSSR's four key programmatic directions (next-generation basic science, interdisciplinary research, systems science, and a problem-based focus for population impact) to illustrate how interdisciplinary and transdisciplinary perspectives can foster the vertical integration of research among biological, behavioral, social, and population levels of analysis over the lifespan and across generations. Interdisciplinary and multilevel approaches are critical both to the OBSSR's mission of integrating behavioral and social

Source: Mabry PL, Olster DH, Morgan GD, Abrams DB. Interdisciplinarity and Systems Science to Improve Population Health. *Am J Prev Med.* 2008 Aug 1;35(2):S211-24.

Peters *Health Research Policy and Systems* 2014, **12**:51  
<http://www.health-policy-systems.com/content/12/1/51>



HEALTH RESEARCH POLICY  
AND SYSTEMS

COMMENTARY

Open Access

## The application of systems thinking in health: why use systems thinking?

David H Peters

### Abstract

This paper explores the question of what systems thinking adds to the field of global health. Observing that elements of systems thinking are already common in public health research, the article discusses which of the large body of theories, methods, and tools associated with systems thinking are more useful. The paper reviews the origins of systems thinking, describing a range of the theories, methods, and tools. A common thread is the idea that the behavior of systems is governed by common principles that can be discovered and expressed. They each address problems of complexity, which is a frequent challenge in global health. The different methods and tools are suited to different types of inquiry and involve both qualitative and quantitative techniques. The paper concludes by emphasizing that explicit models used in systems thinking provide new opportunities to understand and continuously test and revise our understanding of the nature of things, including how to intervene to improve people's health.

**Keywords:** Complex adaptive systems, Complexity, Methods, Systems thinking, Theory, Tools

Source: Peters DH. The application of systems thinking in health: why use systems thinking? *Heal Res policy Syst.* 2014 Aug 25;12(1):1-6.

## BMJ Open Systems science and systems thinking for public health: a systematic review of the field

Gemma Carey,<sup>1</sup> Eleanor Malbon,<sup>2</sup> Nicole Carey,<sup>3</sup> Andrew Joyce,<sup>4</sup> Brad Crammond,<sup>5</sup> Alan Carey<sup>6</sup>

**To cite:** Carey G, Malbon E, Carey N, *et al*. Systems science and systems thinking for public health: a systematic review of the field. *BMJ Open* 2015;5:e009002. doi:10.1136/bmjopen-2015-009002

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### ABSTRACT

**Objectives:** This paper reports on findings from a systematic review designed to investigate the state of systems science research in public health. The objectives were to: (1) explore how systems methodologies are being applied within public health and (2) identify fruitful areas of activity.

**Design:** A systematic review was conducted from existing literature that draws on or uses systems science (in its various forms) and relates to key public health areas of action and concern, including tobacco, alcohol, obesity and the social determinants of health.

**Data analysis:** 117 articles were included in the review. An inductive qualitative content analysis was used for data extraction. The following were systematically extracted from the articles: approach, methodology, transparency, strengths and weaknesses. These were then organised according to theme (ie, commonalities between studies within each category),

### Strengths and limitations of this study

- This study provides a systematic review of the application of systems science and systems thinking to the field of public health.
- The review identified critical shortcomings in the use of systems methodologies being used.
- The review showed that public health is currently not engaging with the full range of systems methodologies.
- The sample of articles is representative but not comprehensive, which is a limitation of the study.

behaviour of complex systems.<sup>1 2</sup> A general distinction is made between 'hard' systems methodologies which refer to quantitative dynamic model building (ie, system dynam-

Source: Carey G, Malbon E, Carey N, Joyce A, Crammond B, Carey A. Systems science and systems thinking for public health: a systematic review of the field. *BMJ Open*. 2015 Dec 29;5(12):e009002.

## Viewpoint

### The need for a complex systems model of evidence for public health

Harry Rutter, Natalie Savona, Ketevan Glonti, Jo Bibby, Steven Cummins, Diane T Finegood, Felix Greaves, Laura Harper, Penelope Have, Laurence Moore, Mark Petticrew, Eva Refjues, Alan Shiell, James Thomas, Martin White

Despite major investment in both research and policy, many pressing contemporary public health challenges remain. To date, the evidence underpinning responses to these challenges has largely been generated by tools and methods that were developed to answer questions about the effectiveness of clinical interventions, and as such are grounded in linear models of cause and effect. Identification, implementation, and evaluation of effective responses to major public health challenges require a wider set of approaches<sup>1,2</sup> and a focus on complex systems.<sup>3,4</sup>

A complex systems model of public health conceptualises poor health and health inequalities as outcomes of a multitude of interdependent elements within a connected whole. These elements affect each other in sometimes subtle ways, with changes potentially reverberating throughout the system.<sup>5</sup> A complex systems approach uses a broad spectrum of methods to design, implement, and evaluate interventions for

which require high levels of individual agency, have low reach and impact, and tend to widen health inequalities.<sup>6-11</sup> Shifts within multiple elements across the many systems that influence obesity are required, some of which might only have small effects on individuals but can drive large changes when aggregated at population level.<sup>12</sup>

Although randomised controlled trials of individual-level interventions are relatively straightforward to do, it is often impossible to randomise a population-level intervention, such as the introduction of a national tax on sugar-sweetened beverages, or the multiple factors that support cycling, such as physical infrastructure, spatial planning, and integration with public transport. Approaches to research that aim to understand single components within systems,<sup>13</sup> or attempt to factor out the system context using randomisation and control, are thus of limited use for identifying how to influence complex systems to achieve improved population health and wellbeing.<sup>14</sup>



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London School of Hygiene & Tropical Medicine, London, UK  
(H Rutter MB BChir, N Savona PhD, K Glonti MSc, S Cummins PhD, M Petticrew PhD); The Health Foundation, London, UK  
(J Bibby PhD, L Harper BSc); Simon Fraser University, Vancouver, BC, Canada  
(D T Finegood PhD); Public Health England, London, UK  
(F Greaves PhD); Menzies Centre for Health Policy and The Australian Prevention Partnership Centre, University of Sydney, Sydney, NSW, Australia (P Have PhD); MRC/CSO Social and Public

Source: Rutter H, Savona N, Glonti K, Bibby J, Cummins S, Finegood DT, *et al*. The need for a complex systems model of evidence for public health. *Lancet*. 2017 Dec 9;390(10112):2602-4.

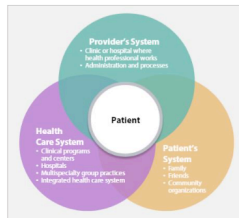
# SYSTEMS THINKING

## Health Systems Science Learning Series



### INTRODUCTION TO SYSTEMS THINKING

Health care occurs between a health professional and a patient; however, it also occurs between small clinical care teams and the patient. A patient may encounter successive small teams within a larger team or system during care. To provide truly patient-centered care, you must be able to see health care, not as a lone professional, but as part of the larger health system.



Thinking about health care delivery using a systems lens is termed systems thinking. Systems thinking is a philosophy, a mindset and a set of skills and understanding.

### THE HEALTH SYSTEM AS A COMPLEX ADAPTIVE SYSTEM

A health system is a set of connected or interdependent parts or agents, including health professionals and patients, bound by a common purpose. Health care is complex because of the great number of interconnections within and among systems. Health systems are adaptive because they are composed of individuals – patients, families and health professionals – who learn and change as a result of their experiences. Their actions in delivering and receiving health care are not always predictable and tend to change both their local and larger environments. Human behavior and the variability of that behavior is part of what makes the health system complex and adaptive. Additionally, there is great variety in system design which has a strong influence on human behavior.

Seeks to understand the big picture

Observes how elements within systems change over time, generating patterns and trends

Recognizes that a system's structure generates its behavior

Identifies the circular nature of complex cause and effect relationships

### Habits of a Systems Thinker

Changes perspectives to increase understanding

Surfaces and tests assumptions

Considers an issue fully and resists the urge to come to a quick conclusion

Considers how mental models affect current reality and the future

Uses understanding of system structure to identify possible leverage actions

Considers both short and long-term consequences of actions

Finds where unintended consequences emerge

Recognizes the impact of time delays when exploring cause and effect relationships

Checks results and changes actions if needed: "successive approximation"

©2010 Systems Thinking in Schools, Waters Foundation www.watersfoundation.org

Source: <https://edhub.ama-assn.org/health-systems-science>; [www.watersfoundation.org](http://www.watersfoundation.org)

## What I've Learned Along the Way...

### สิ่งที่ผมได้เรียนรู้...

➤ While solving complex problems, think of:

1) "The Complete, Big Picture"  
(causal map, non-linear relationship)

คิดครบ

2) "The Underlying"  
(root cause, high-leverage points)

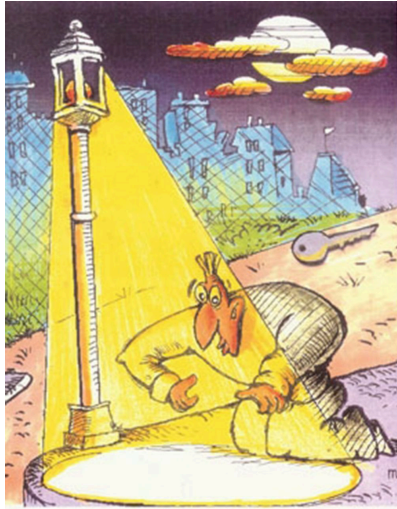
คิดลึก

3) "The Long-run"  
(behaviors over time)

คิดยาว

Systems Thinking

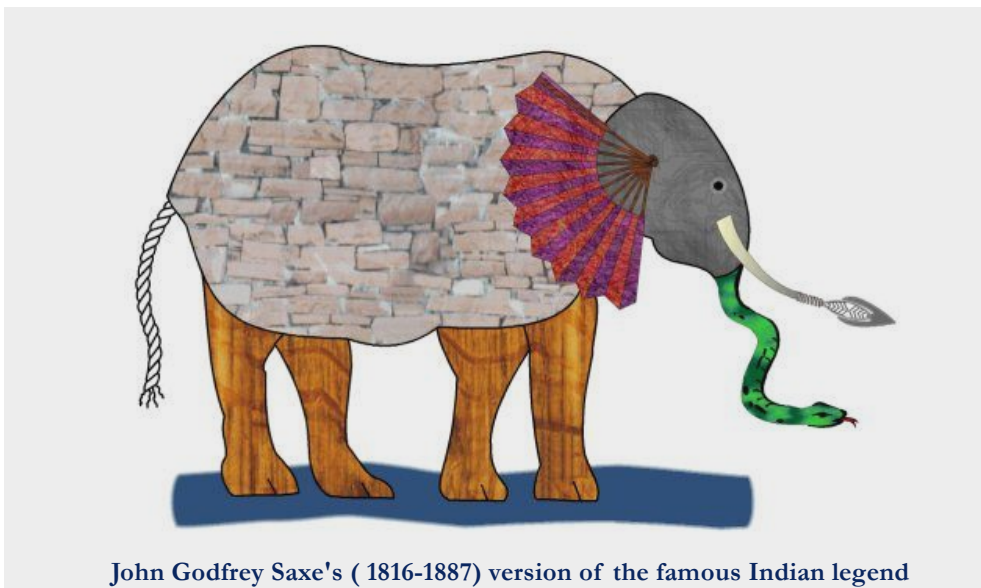
**“Because *the light* is better here!”**  
เพราะเครื่องมือในการแก้ไขปัญหาก็เราคุ้นเคยอยู่ตรงนี้!



- “Streetlight Effect” (David H. Freedman)
- “The Principle of the Drunkard’s Search” (Abraham Kaplan)
- A type of observational bias that occurs when people are searching for something and look only where it is easiest.

Pix source: Lernmark Å. The streetlight effect--is there light at the end of the tunnel? Diabetes. American Diabetes Association; 2015;64:1105-7.

**“What *Animal* Do You See Here?”**



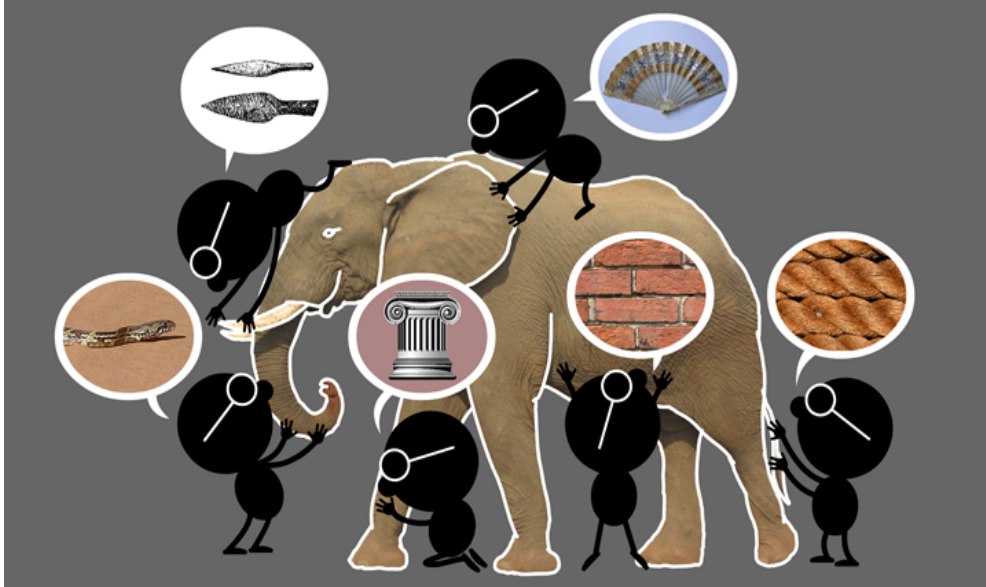
John Godfrey Saxe's ( 1816-1887) version of the famous Indian legend

Pix source: [www.noogenesis.com/pineapple/blind\\_men\\_elephant.html](http://www.noogenesis.com/pineapple/blind_men_elephant.html)

## Systems Thinking vs. Compartmentalized Thinking

การคิดเชิงระบบ

การคิดแยกส่วน



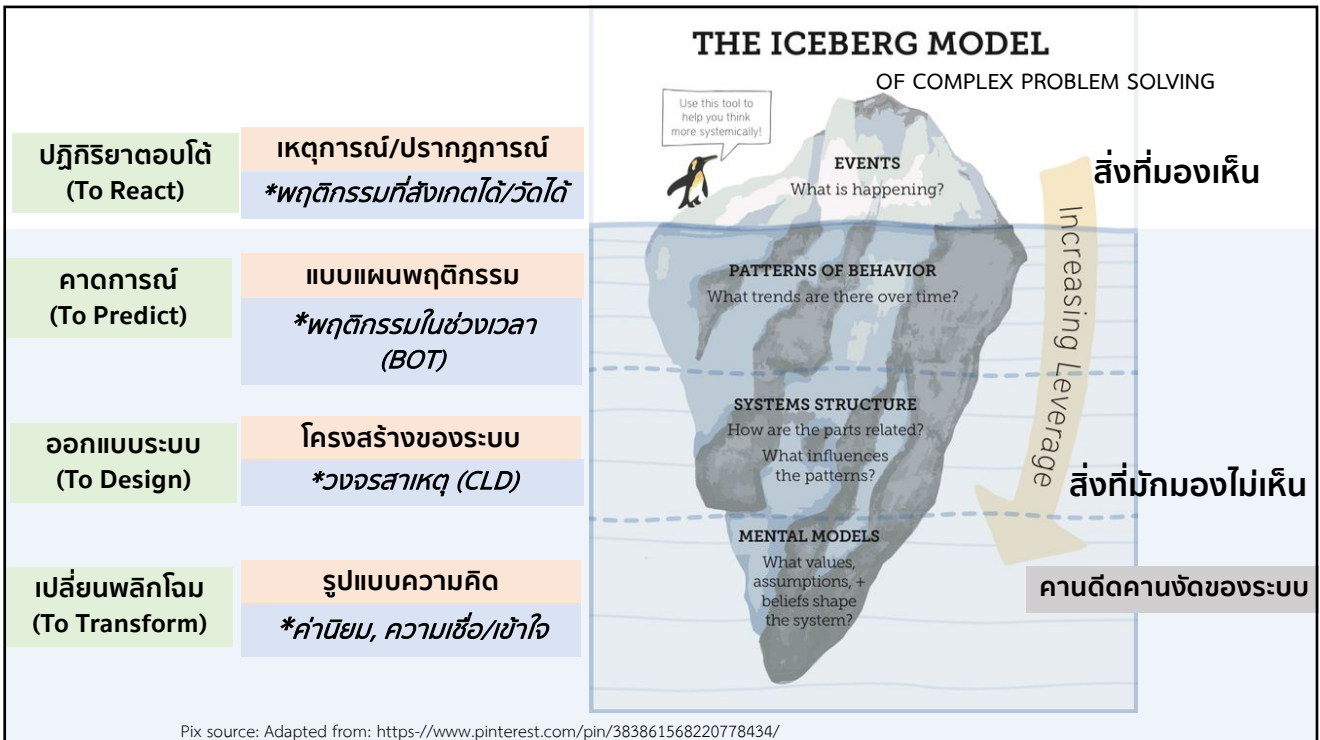
Pix source: [www.simoncamilleri.com/the\\_truth\\_of\\_the\\_elephant/](http://www.simoncamilleri.com/the_truth_of_the_elephant/)

## Systems Boundary: Zoom-in & Zoom-out

เลือกขอบเขตของระบบให้เหมาะสมกับปัญหา



Pix source: [www.shutterstock.com/th/](http://www.shutterstock.com/th/)

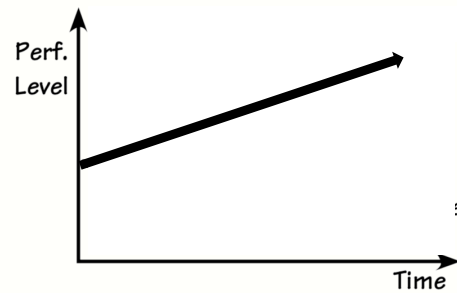


## “Linear Thinking” (ความสัมพันธ์เชิงเส้นตรง, Linear Relationship)

Structure



Behaviors Over Time



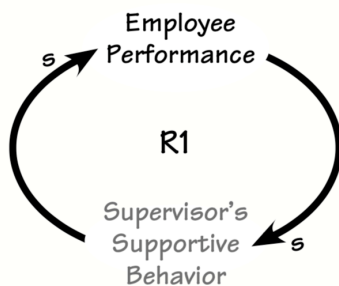
### WHAT WE USUALLY THINK

Pix source: adapted from: <https://thesystemsthinker.com/wp-content/uploads/2016/03/Systems-Thinking-Tools-TRST01E.pdf>

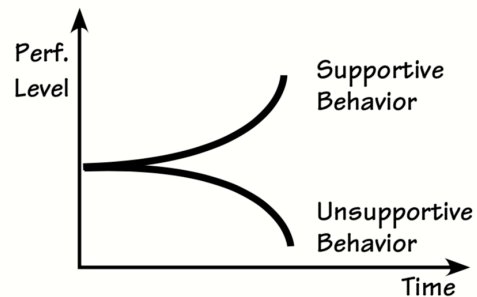
## “Things are spiral out of control” (วงจรเสริมกำลัง, The Reinforcing Loop)

### WHAT REALLY HAPPENS

Structure



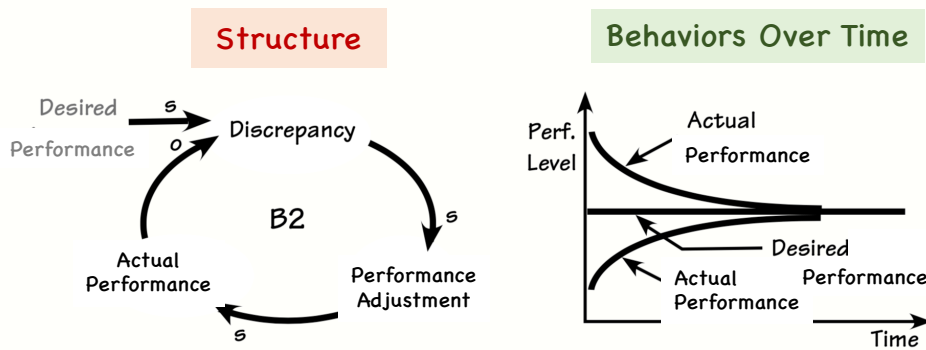
Behaviors Over Time



Pix source: <https://thesystemsthinker.com/wp-content/uploads/2016/03/Systems-Thinking-Tools-TRST01E.pdf>

**“Thermostat controls the room temperature”  
(วงจรสร้างสมดุล, The Balancing Loop)**

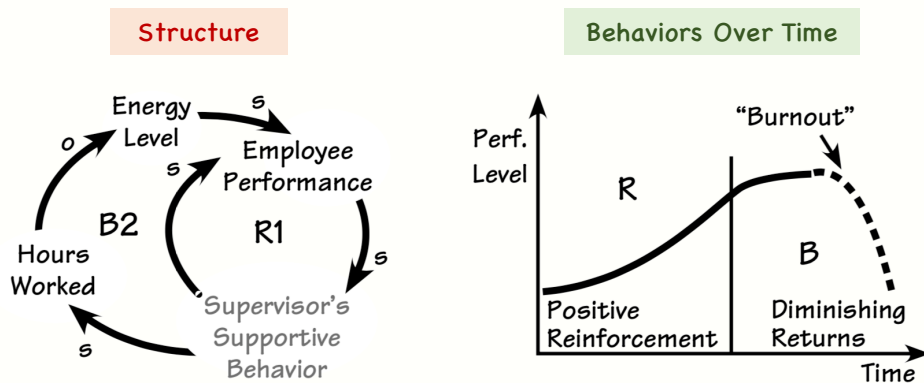
**WHAT REALLY HAPPENS**



Pix source: Modified from <https://thesystemsthinker.com/wp-content/uploads/2016/03/Systems-Thinking-Tools-TRST01E.pdf>

**Reinforcing Loop Coupled with Balancing Loop**

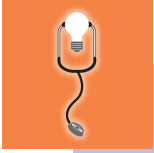
**WHAT REALLY HAPPENS**



Pix source: <https://thesystemsthinker.com/wp-content/uploads/2016/03/Systems-Thinking-Tools-TRST01E.pdf>







## Why: Systems Thinking as Problem-Solving Competencies

Pix source: online.wsj.com

### A Design Challenge in Africa!!



Pix source: <https://pantip.com/topic/36133598>; <https://picpost.mthai.com/view/75949>

This is a much more user-friendly solution:  
“The Hippo Water Roller”



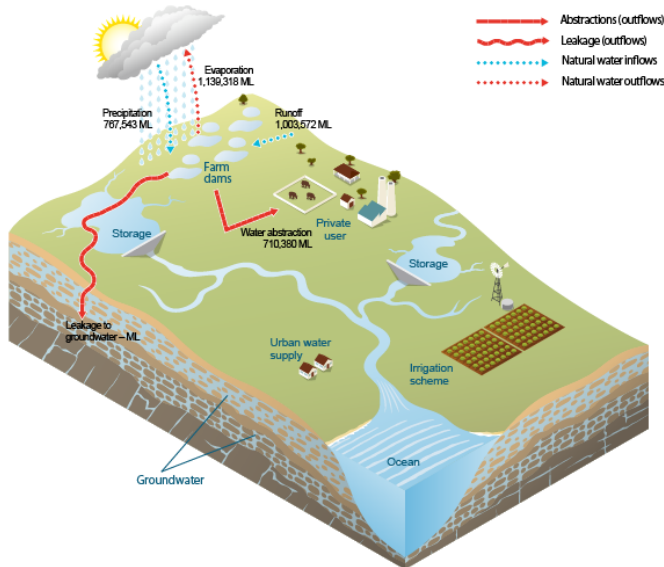
Pix source: <https://pantip.com/topic/34660480>

Here's an even more functional design:  
“The Aquaduct Bike Purifies Water as you Pedal”



Pix source: <https://reqtest.com/requirements-blog/why-you-need-to-perform-stakeholder-analysis/>

## How's about understanding the systems and design a sustainable solution?: "The Local Water Cycle and Irrigation Systems"



Pix source: [www.bom.gov.au/water/nwa/2014/mdb/notes/supportinginformationforwateraccountingstatements.shtml](http://www.bom.gov.au/water/nwa/2014/mdb/notes/supportinginformationforwateraccountingstatements.shtml); [reqtest.com/requirements-blog/why-you-need-to-perform-stakeholder-analysis/](http://reqtest.com/requirements-blog/why-you-need-to-perform-stakeholder-analysis/); [vdocuments.mx/stakeholder-analysis-ip-rifa-stakeholder-analysispdf-what-is-a-stakeholder.html](http://vdocuments.mx/stakeholder-analysis-ip-rifa-stakeholder-analysispdf-what-is-a-stakeholder.html);

## "แค่ทำงานแบบมืออาชีพไม่เพียงพอหรือ?"

เกาะกมลไฉยยล

### #นักศึกษาแพทย์เลว ติดหมกคักคิด แหน่แหร่เรื่องจริง วงการหมอ ที่คณะแพทย์ไม่ยกกั๊ง

วันที่ 23 พฤศจิกายน 2563 - 08:00 น.

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Med Student Parody  
@MedicalParody



[he02.tci-thaijo.org/index.php/reg4...](http://he02.tci-thaijo.org/index.php/reg4...)

ข้อ 4 => ยื่นโมคให้พี่ Extern , Intern , Residence , Young Staff , Etc .....

#นักศึกษาแพทย์เลว

โดยศึกษาข้อมูลจากต่างประเทศและในประเทศไทยของแพทย์สภา สรุปประเด็นหลักและตอบตามความคิดเห็นของแพทย์ทุกระดับและหลากหลายกลุ่มอยู่ จำนวน 100 คน นำผลการศึกษาให้คณะอนุกรรมการพัฒนาระบบบริการสาธารณสุข และคุณภาพชีวิตแพทย์ แพทยสภา พิจารณาถกแถลงจนได้ข้อสรุปดังนี้

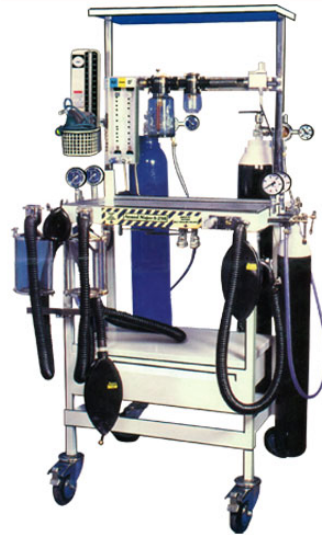
1. ข้าราชการทำงานของแพทย์ภาครัฐไม่ครบเกิน 80 ชั่วโมง/สัปดาห์
2. ครม.มีวันหยุดอย่างน้อย 2 วัน/สัปดาห์
3. ระยะเวลาเวรปฏิบัติการณ์ ไม่ครบเกิน 16 ชั่วโมง
4. ระยะเวลาเวรปฏิบัติการณ์ติดต่อกัน 24 ชั่วโมง ต้องมีเวลาหยุดพัก 8 ชั่วโมง
5. การอยู่เวรปฏิบัติการณ์นอกเวลาราชการ ไม่ครบเกิน 7 เวร/เดือน
6. การตรวจรักษาผู้ป่วยนอกทั่วไป ควรใช้เวลาประมาณ 5 นาที/คน (12 คน/ชั่วโมง)
7. แพทย์ที่มีอายุตั้งแต่ 50 ปี เป็นต้นไป ควรลดอยู่เวรปฏิบัติการณ์นอกเวลาราชการ

ผลการศึกษาสามารถนำมาใช้เป็นแนวทางในการกำหนดภาระงานของแพทย์/เสนอต่อแพทยสภา พิจารณาประกาศเป็นเกณฑ์มาตรฐาน อ้างอิงแก่แพทย์และผู้บริหารหน่วยงาน นำไปใช้ประโยชน์ต่อไป

10:03 หลังเที่ยง · 22 พ.ย. 2020

84 330 คนทวีตเกี่ยวกับสิ่งนี้

# การพัฒนาอย่างยั่งยืน (ระยะยาว)



Pix source: www.be2hand.com; www.descoinstruments.com

## Analyzing/Solving Complex Problems in Health Systems

Systems thinking

Design thinking

“การคิดเชิงระบบ”

“การคิดเชิงออกแบบ”

What was?

What is?

What can be?

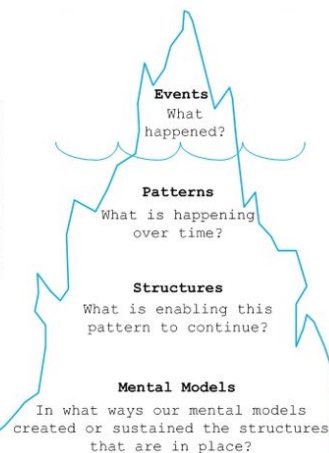
เหตุการณ์/  
ปรากฏการณ์

แบบแผนพฤติกรรม

โครงสร้างของระบบ

รูปแบบความคิด

Analyse and understand



Innovate and transform

ออกแบบระบบใหม่  
(To Redesign & Disrupt)

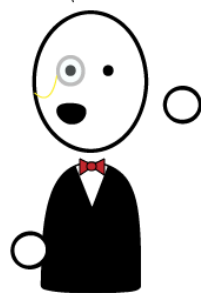
เข้าใจมุมมอง/ตีความใหม่  
(To Empathize & Reframe)

Pix source: Adapted from: <https://www.pinterest.com/pin/290763719670940426/>

## **Systems thinking: Mindset, Habits > Toolkits**

### **The Beginner's Mind**

I KNOW HOW  
THIS WORKS!



**“Experts”**

vs.

I WONDER HOW  
THIS WORKS?



**“Beginners”**

Source: <https://mindfulambition.net/beginners-mind/>

## The Beginner's Mind

TO CULTIVATE BEGINNER'S MIND...

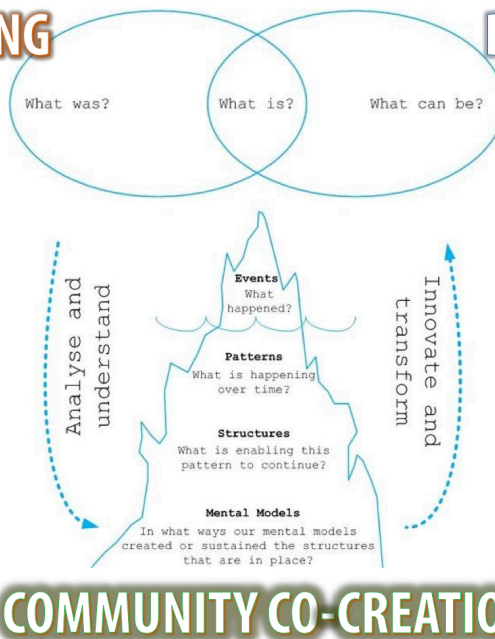
- LET GO OF PRECONCEPTIONS ABOUT "HOW THINGS WORK"
- ELIMINATE EXPECTATIONS ABOUT WHAT WILL HAPPEN
- FILL YOURSELF WITH CURIOSITY TO UNDERSTAND THINGS MORE DEEPLY
- OPEN YOURSELF UP TO NEW POSSIBILITIES
- ASK SIMPLE QUESTIONS



Source: <https://mindfulambition.net/beginners-mind/>

**SYSTEMS THINKING**

**DESIGN THINKING**



Pix source: Adapted from: <https://www.pinterest.com/pin/290763719670940426/>

ZEN  
MIND,  
BEGINNER'S  
MIND

*Informal talks on  
Zen meditation  
and practice*

SHUNRYU SUZUKI

50TH ANNIVERSARY EDITION

"In the beginner's mind  
there are many possibilities,  
but in the expert's mind  
there are few"

Shunryu Suzuki

Pix Source: amazon.com;  
luxinsights.com/beginners-mind/



## How: Learning Health Systems Science in Thai Medical Schools?

Pix source: online.wsj.com



3-30-2019

## Systems Thinking in the Healthcare Professions: A Guide for Educators and Clinicians

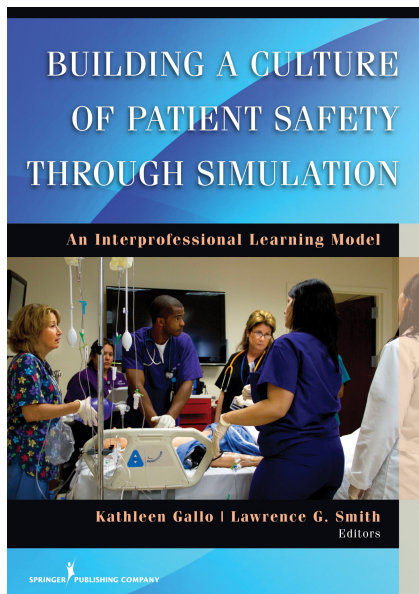
Margaret M. Plack, PT, DPT, EdD  
*George Washington University*

Ellen F. Goldman, EdD, MBA,  
*George Washington University*

Andrea Richards Scott, EdD, MBA  
*George Washington University*

Shelley B. Brundage, PhD, CCC-SLP  
*George Washington University*

Source: [https://hsrc.himmelfarb.gwu.edu/cgi/viewcontent.cgi?article=1000&context=educational\\_resources\\_teaching](https://hsrc.himmelfarb.gwu.edu/cgi/viewcontent.cgi?article=1000&context=educational_resources_teaching)



### 3: Safety Hub: Research and Role of a Simulation Center in a System-Wide Initiative to Reduce Sepsis

[Add to Favorites](#) [Download PDF](#) [Cite](#) [Permissions](#) [Share](#)

**DOI:** 10.1891/9780826169075.0003

#### Authors

Friedman, M. Isabel  
Doerfler, Martin  
Tamuz, Michal

#### Abstract

In accord with a health system's extensive campaign to increase awareness, improve treatment, and reduce mortality due to sepsis, simulation plays a pivotal role as one in a series of educational measures that target critical care and emergency nurses. Simulation improves performance in the clinical context, facilitating the acquisition and application of cognitive, behavioral, psychomotor, and interprofessional skills. The problem of life-threatening sepsis and septic shock, currently of epidemic proportion and cause for an ongoing and worldwide health initiative, is an instructive example. As the leading cause of death in noncardiac intensive care units (ICUs), severe sepsis counts for about one in five of all admissions to ICUs. The corporate strategy to reduce sepsis mortality resulted in a partnership with the Institute for Healthcare Improvement (IHI), a nonprofit group that helps to structure innovation in health care.

Pix source: [www.amazon.com/Building-Culture-Patient-Through-Simulation/dp/0826169066](http://www.amazon.com/Building-Culture-Patient-Through-Simulation/dp/0826169066)

## BUILDING A CULTURE OF PATIENT SAFETY THROUGH SIMULATION

An Interprofessional Learning Model



Kathleen Gallo | Lawrence G. Smith  
Editors

SPRINGER PUBLISHING COMPANY

Key lessons learned on the systems usually arise from the DEBRIEF process (DeVoe & Kerner, 2014; Sawyer & Deering, 2013)

### DEBRIEF

(Associated with the U.S. Army's After Action Review)

- D** = Define the rules of the debriefing session
- E** = Explain the learning objectives
- B** = Benchmark performance: Explain what the standard is
- R** = Review what was supposed to happen in the scenario
- I** = Identify what actually happened
- E** = Examine why things happened the way they did; what were the performance gaps
- F** = Formalize learning points so participants leave with a clear understanding of what to do next time

Pix source: [www.amazon.com/Building-Culture-Patient-Through-Simulation/dp/0826169066](http://www.amazon.com/Building-Culture-Patient-Through-Simulation/dp/0826169066)

## Learning Systems Thinking in Medical School

1. Framing topics and objectives around **the four levels of the healthcare system** and along **the hierarchy of Bloom's taxonomy** will help ensure the curriculum is comprehensive and systematically designed from classroom to clinic.
2. Aiming to develop learners who appreciate complexity and can begin to synthesize information from across the healthcare system **in solving problems and planning for patient care**. Assignments and activities should be goal oriented, relevant, and authentic, replicating real-world situations our learners will encounter.
3. Developing the knowledge, skills, and attitudes of a systems thinker takes times. Thus, these activities should **begin early** in the curriculum and be threaded through the preclinical as well as clinical years and beyond.

Source: Plack, M. M., Goldman, E. F., Scott, A. R., & Brundage, S. B. (2019). Systems thinking in the healthcare professions: A guide for educators and clinicians.

# Learning Systems Thinking in Medical School

The four levels of healthcare systems

The hierarchy of Bloom's taxonomy

Table 2.2 Systems Thinking Taxonomy by Topic (Exemplars)

	Patient, Family, Community	Care Team	Organization	Environment/Society
Knowledge/comprehension	<ul style="list-style-type: none"> <li>Body structure and function, personal and contextual factors</li> <li>Body structure and function, body systems</li> <li>Barriers and supports to care</li> <li>Patient and family values and perspectives</li> </ul>	<ul style="list-style-type: none"> <li>Roles/functions/interrelationships</li> <li>Principles of effective teamwork</li> <li>Structural/organizational aspects</li> <li>Issues impacting team learning and performance</li> <li>Recognizing dysfunction</li> </ul>	<ul style="list-style-type: none"> <li>Clinic, hospital, nursing home, etc.</li> <li>Structure/components</li> <li>Functioning/interrelationships</li> <li>Communication and decision-making processes</li> <li>Value/belief systems</li> <li>Key metrics</li> </ul>	<ul style="list-style-type: none"> <li>Regulatory, market, and policy</li> <li>Environmental (sociocultural, political, regulatory, and economic) influencers on healthcare delivery</li> <li>Types of delivery models</li> <li>Trends in population health</li> <li>National and local policy development processes</li> <li>Methods of advocacy</li> </ul>
Application	<ul style="list-style-type: none"> <li>International Classification of Functioning model</li> </ul>	<ul style="list-style-type: none"> <li>Tools to examine team behavior and performance</li> <li>Problem-solving/decision-making methods</li> <li>Strategies to address communication and cooperation</li> <li>Strategies to address conflict</li> <li>Strategies to address team dysfunction</li> </ul>	<ul style="list-style-type: none"> <li>Tools to examine malfunctioning of organizational components</li> <li>Tools to enhance performance and learning</li> <li>Tools to enhance quality</li> </ul>	<ul style="list-style-type: none"> <li>Tools to identify environmental factors in a given situation</li> <li>Mental models underlying policy decisions</li> </ul>
Analysis	<ul style="list-style-type: none"> <li>Key functions, interactions, communication pathways, and feedback loops</li> <li>Root cause analysis</li> </ul>	<ul style="list-style-type: none"> <li>Impact on patient care</li> <li>Impact on organization</li> <li>Mental model in use</li> <li>Impact of structure and power</li> <li>Causes of error</li> </ul>	<ul style="list-style-type: none"> <li>Information flows</li> <li>Resource consumption/activity costs</li> </ul>	<ul style="list-style-type: none"> <li>Impact of environmental factors in a given situation</li> <li>Comparison of various delivery models</li> </ul>
Evaluation	<ul style="list-style-type: none"> <li>Impact of dysfunction on patient, family, and community</li> <li>Factors influencing patient care</li> </ul>	<ul style="list-style-type: none"> <li>Team functioning</li> <li>Team learning</li> <li>Team performance</li> <li>Team impact on organization</li> <li>Error resolution</li> </ul>	<ul style="list-style-type: none"> <li>Impact of quality improvement changes</li> <li>Impact of proposed changes to policy, procedures, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Impact of proposed changes to policy, regulations, etc.</li> <li>Program impact on population</li> </ul>
Creation	<ul style="list-style-type: none"> <li>Plan of care</li> <li>Patient and family perspectives on plan of care</li> </ul>	<ul style="list-style-type: none"> <li>Policy modifications</li> <li>Error prevention</li> <li>Methods to enhance care delivery</li> <li>Tools to optimize functioning</li> </ul>	<ul style="list-style-type: none"> <li>Suggest policy/procedure/structure modifications</li> </ul>	<ul style="list-style-type: none"> <li>Advocate for changes to meet needs</li> <li>Develop new program</li> <li>Suggest policy modifications</li> <li>Create new delivery model</li> </ul>

Source: Plack, M. M., Goldman, E. F., Scott, A. R., & Brundage, S. B. (2019). Systems thinking in the healthcare professions: A guide for educators and clinicians.

## Case Scenario

- You are a member of a healthcare team that provides inpatient care on the internal medicine unit. You work the night shift and are typically responsible for handing off four to five patients to the day shift team when the shifts change at 6 am. After a particularly busy shift, your team members complete their handoffs and head home.
- When you come to work the next evening, you are told that there is an emergency team meeting in 10 minutes to discuss a problem from the previous night. It appears that **a patient had a negative reaction to a drug administered by the day shift, subsequently became unresponsive, and almost died.** He is stable now but may have incurred some hypoxia during the time he was unresponsive.
- Members of the day shift are angry because they feel they were **not well informed** about the patient's care prior to the handoff the previous morning.
- The night shift team does not want to be blamed for the deterioration of a patient who was **stable during their shift.**

Source: Plack, M. M., Goldman, E. F., Scott, A. R., & Brundage, S. B. (2019). Systems thinking in the healthcare professions: A guide for educators and clinicians.

## What's Next?: Learning Patient Safety/Quality Improvement in AHC

Health Care Services

IPE, Quality Improvement/Patient Safety Projects (e.g. HA)

Current Health Care Policies (e.g. UHC, RDU)

### Case Studies

- Basic Science
- Clinical Science
- Health System Science

### (Ideal) Grand Round

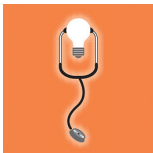
- Basic Science
- Clinical Science
- Health System Science

### (Ideal) Teaching Round

- Basic Science
- Clinical Science
- Health System Science

Designated Learning Activities

Routine  
Activities

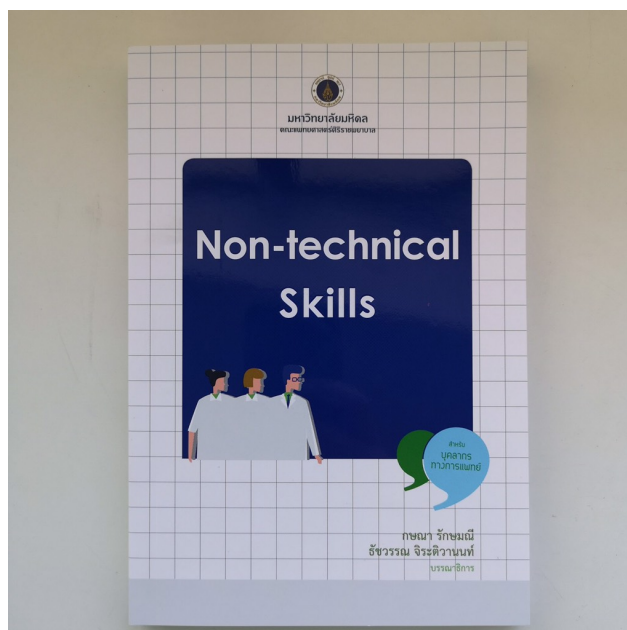


Resource for Further Study

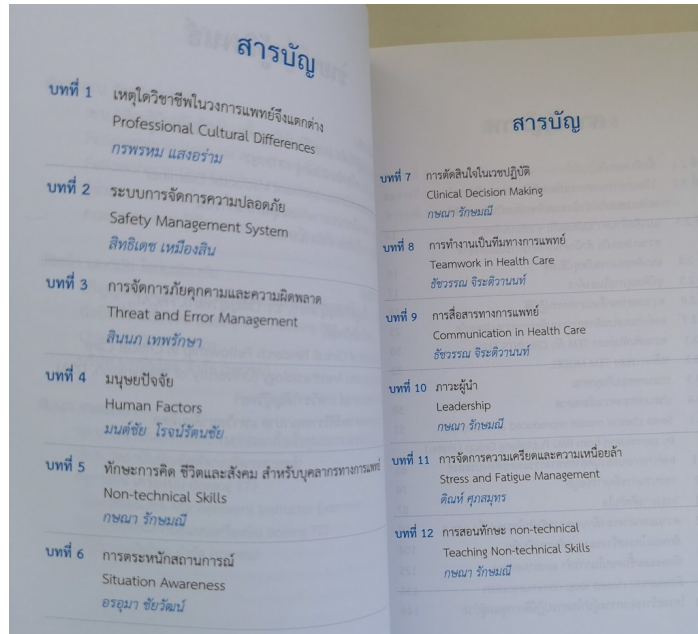
## Resource For Further Study



## Resource For Further Study: A Manual/Textbook in Thai Contexts?



## Resource For Further Study: A Manual/Textbook in Thai Contexts?



<https://edhub.ama-assn.org/health-systems-science>

AMA Health Systems Science Learning Series 1.5 Credits Claimed 2020 Borwornsom Leerapan

### What Is Health Systems Science?

**Learning Objectives**

1. Describe why health systems science is an important component of health professional training, critical for successful functioning in the health care system
2. Identify the domains of health systems science
3. Describe how health systems science synergizes, complements and intersects with the basic and clinical sciences
4. Explain how the integration of health systems science with basic and clinical sciences can maximize health for patients and society

Module Take Quiz Resources



The AMA Health Systems Science Learning Series  
Deepen your knowledge on how health care is delivered, how health care professionals work together to deliver that care, and how the health system can improve patient care and health care delivery. [Learn more](#)



COVID-19 Education

Free Access to Undergrad Courses

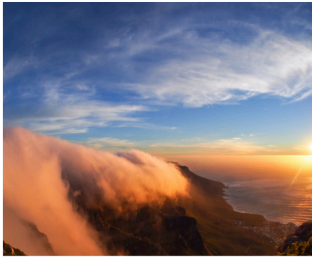
<https://thesystemsthinker.com>

SYSTEMS  
THINKER

SIGN IN SIGN UP

TOPICS SECTORS BROWSE BY

SEARCH



How Can We Solve Our Toughest Problems Peacefully?

#### Articles

A Systemic View of the Israeli-Palestinian Conflict  
Applying System Dynamics to Public Policy: The Legacy of Barry Richmond  
Dancing with Systems  
The Promise of Systems Thinking for Shifting Fundamental Dynamics  
Acting and Thinking Systemically

#### Case Studies

Learning and Leading Through the Badlands  
Operational Strategy Mapping: Learning and Executing at The Boeing Company  
Minnesota Takes the Long View of Its Solid Waste System  
Everyone's Problem to Solve: Systems Thinking Cross-Functionally

#### How-To Guides

Introduction to Systems Thinking  
Fine-Tuning Your Causal Loop Diagrams—Part I  
Systems Archetypes I: Diagnosing Systemic Issues and Designing Interventions  
Applying Systems Archetypes

#### Pocket Guides

Pocket Guide: Systems Archetypes at a Glance  
Pocket Guide: Guidelines for Daily Systems Thinking Practice  
Pocket Guide: Moving from Blame to Accountability  
Pocket Guide: Servant Leadership

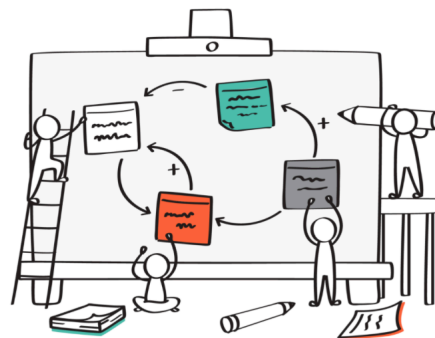
<http://ddlabs.health>



Home Learning COVID-19 About Us

We are an open community of systems thinkers for experimenting health systems design and health policies decision.

ร่วมเป็นส่วนหนึ่งของชุมชนนักคิด



มาร่วมเป็นส่วนหนึ่งของ ชุมชนนักคิด เรียนรู้และเข้าใจแนวคิด Systems Thinking พัฒนาทักษะการคิดเชิงระบบ และการประยุกต์ใช้แนวคิดและเครื่องมือในการแก้ปัญหาเชิงระบบ



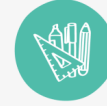
### LEARN

ศึกษางานวิจัยเพื่อพัฒนา  
นโยบายสุขภาพ และออกแบบ  
ระบบสุขภาพเพื่อคนไทย



### SHARE

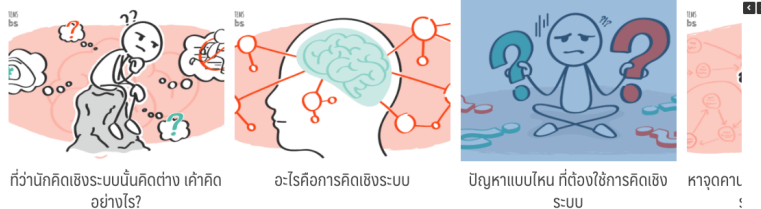
แลกเปลี่ยนเรียนรู้  
กับชุมชนนักคิด / นวัตกรรม  
ผู้อยากสร้างการเปลี่ยนแปลง



### PRACTICE

เข้าใจและประยุกต์ใช้เครื่องมือ  
ในการแก้ปัญหาเชิงระบบ  
ที่มีความซับซ้อน

## Introduction to Systems Thinking



ที่ว่ามีนักคิดเชิงระบบนั้นคิดต่าง คำคิด  
อย่างไร?

อะไรคือการคิดเชิงระบบ

ปัญหาแบบไหน ที่ต้องใช้การคิดเชิง  
ระบบ

หาจุดคานา

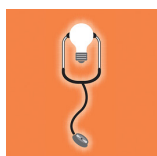
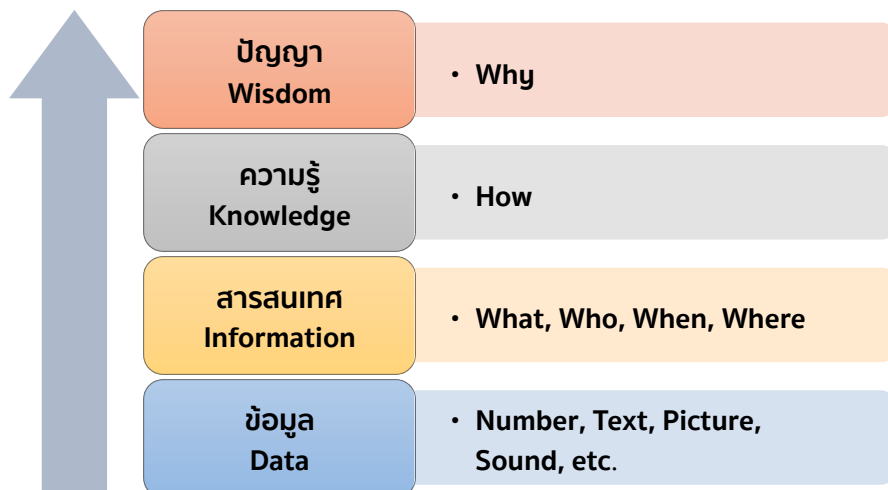


## Conclusion

1. WHAT:
  - Systems Thinking, Health Systems Science, Health Care Management are additional toolkits for physicians to act as the problem-solvers for patients
2. WHY: Clinicians vs. Managers
  - Not every physician may want to be promoted to a management role, but everyone can aspire to be a changemaker in health systems.
3. HOW: Learning Health Care Management & Health Systems Science in the Contexts of Thai Medical Schools
4. Case Studies & Discussions (Next Class)



## What Level of Our Learning?



## Food-for-Thought

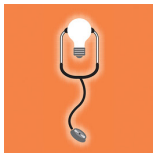
“ลองคิดดู ปัญหาเรื่องระบบอาจเป็นเพราะเมืองไทยไม่มีนักปราชญ์จริงๆ ผมไม่ได้พูดถึงนักปราชญ์ในทางวรรณคดี แต่หมายถึง thinker ของเราไม่มี ไม่เหมือนจีน อินเดีย อียิปต์ กรีซ คือเราไม่มีนักคิดที่จะคิดพวกเรื่องระบบ เรื่อง abstract ไม่ได้คิดแค่เรื่องประเด็นปัจจุบัน นักคิดที่เวลามองอะไร มองภาพรวม มองไกล เราไม่มี บางทีเราเป็นประเภทสุกเอาเผากิน เก่งในการแก้ไขด้วยปฏิภาณ ภาษาอังกฤษใช้คำว่า pragmatism ก็ไม่ใช่ว่าเป็นของไม่ดี แต่ว่ามันไม่พอ

เพราะว่าปัญหาบ้านเมือง ไม่ว่าจะเป็นปัญหาการเมือง ปัญหาสังคม ปัญหาโครงสร้างต่างๆ มันต้องคิดเป็นกระบวนการ มันไม่ใช่คิดทีละจุด ไม่ใช่แก้ทีละจุด เพราะแก้ทีละจุด มันจะไปโผล่อีกที่หนึ่ง”

--อานันท์ ปันยารชุน



Source: [http://optimise.kiatnakinphatra.com/cover\\_story\\_11.php?fbclid=IwAR1JVoZs8MNPakrd1sCJX29F-goNG2auDBT7W4LczRleCNKS3TCEO7u-TPw](http://optimise.kiatnakinphatra.com/cover_story_11.php?fbclid=IwAR1JVoZs8MNPakrd1sCJX29F-goNG2auDBT7W4LczRleCNKS3TCEO7u-TPw)



**Q & A**

[borwornsom.lee@mahidol.ac.th](mailto:borwornsom.lee@mahidol.ac.th)

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