



Health System Science: Developing Leaders for Change

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Geneva R Johnson Forum Keynote
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Conflict of Interest Disclosures

Served as Chief Academic
Officer and GVP for Medical
Education at the American
Medical Association

HSS Textbook Author – all
authors donate royalties to
AMA Medical Education Fund

Learning Objectives

- Understand the concepts of HSS
- Describe examples of curriculum implementation
- List benefits and outcomes of working as a consortium
- Apply concepts of HSS to physical therapy education

Road Map

What is HSS & how did it develop?

Definition of HSS

How has HSS been integrated into medical education

Working as a consortium & lasting outcomes

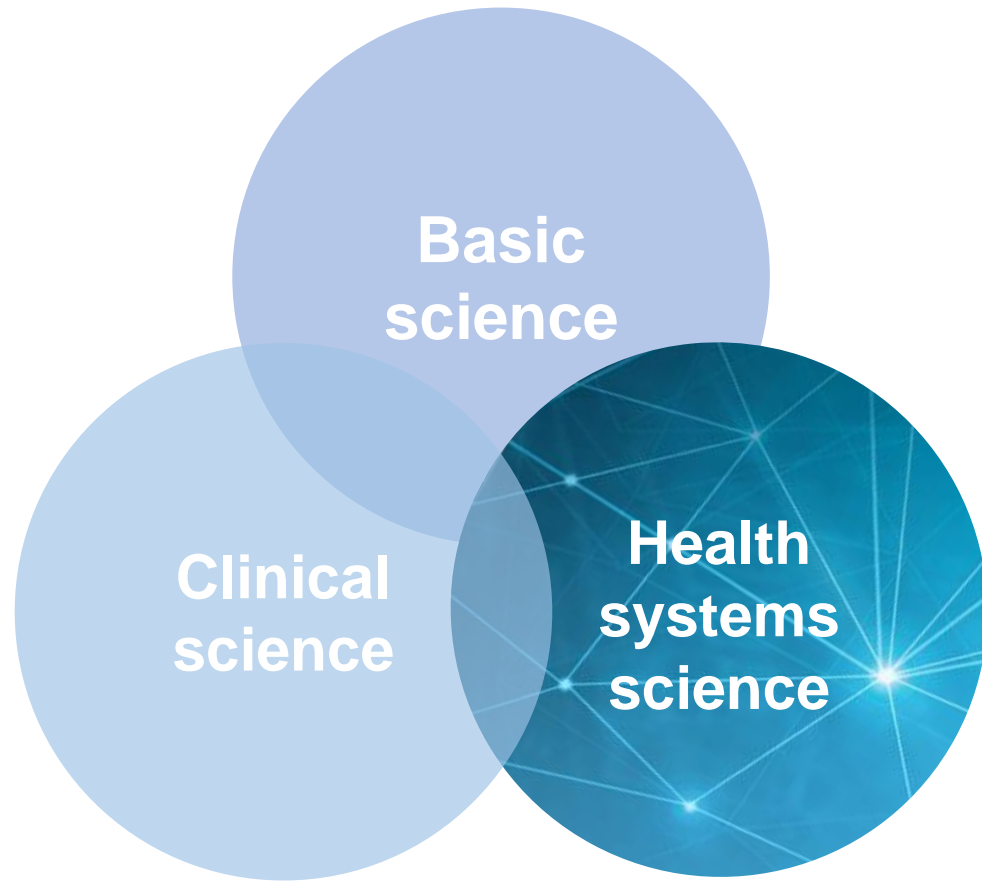
Future directions

Health Systems Science (HSS)

The principles, methods and practice of improving quality and patient experience, outcomes and costs of health care delivery for patients and populations within systems of medical care

It includes the study of how health care is delivered, how health care professionals work together to deliver care and how to improve the health care system

Health System Science: 3rd Pillar in Medical Education

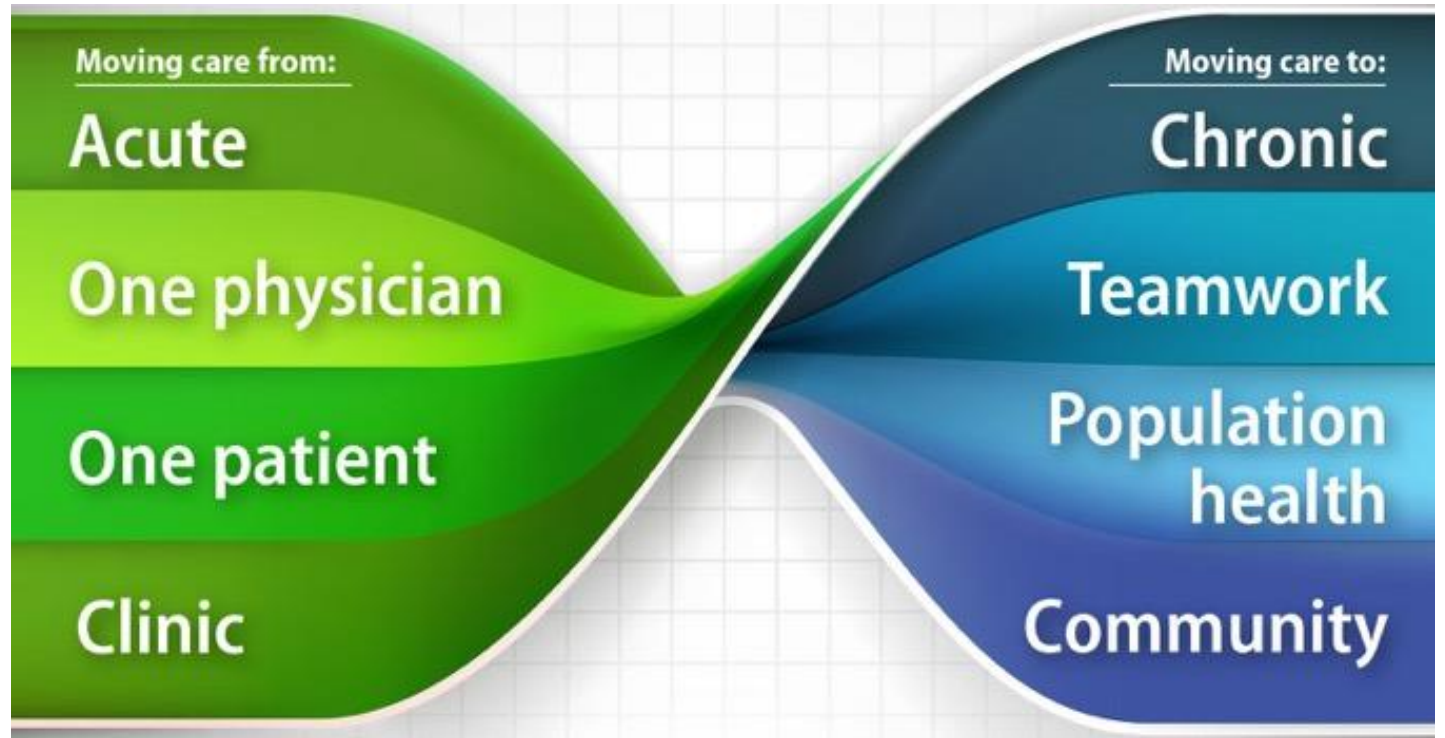


- Health care structure and processes
- Clinical informatics and health technology
- Population, public and social determinants of health
- Health care policy and economics
- Value in health care
- Health system improvement
- Systems thinking

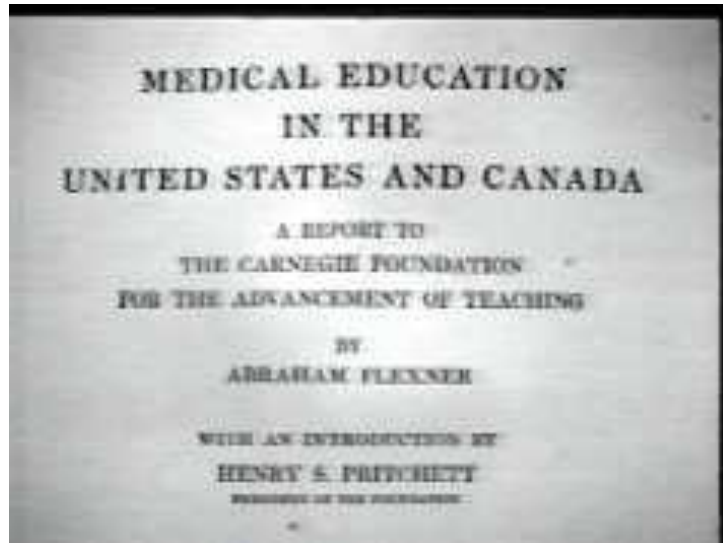
How Did Health
System Science
Develop as the 3rd
Pillar of Medical
Education?



Increasingly,
medical
training was
not matching
practice



Abraham Flexner & Medical Education

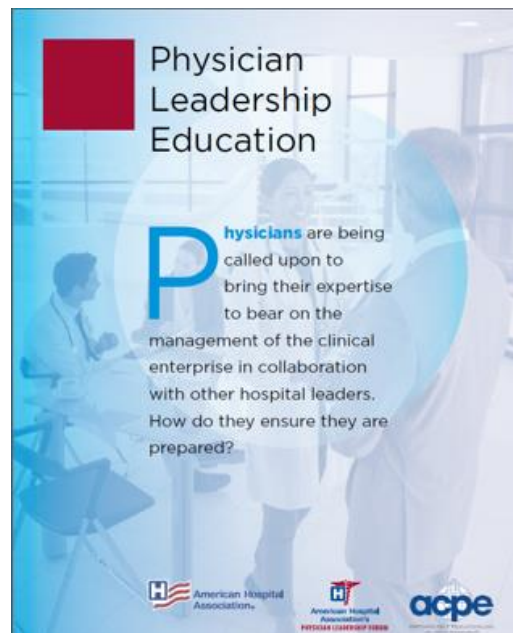


- Commissioned to study US and Canadian Medical Schools by the Carnegie Foundation for the Advancement of Teaching



Abraham Flexner

A growing consensus emerged that medical education needed reform



Calls for Change in Medical Education

A Decade of Reports Calling for Change in Medical Education: What Do They Say?

Susan E. Skochelak, MD, MPH

Abstract

Purpose

To review the recommendations of 15 U.S. and Canadian reports, published in the last decade, that call for significant change in medical education.

Method

The author selected for review 15 reports published over the last ten years that emphasize general recommendations for change in medical education in the United States and Canada and that represent a broad spectrum of sources.

Results

The purpose, methods, and content of each report are briefly described. The reports were selected because they address comprehensive change in medical education and have been recently published. The reports are categorized based on their inclusion of eight major themes: integrating the educational continuum, need for evaluation and research, new methods of financing, importance of leadership, emphasis on social accountability, use of new technology in education and medical practice, alignment with changes in the health care delivery system, and

future directions in the health care workforce. The author provides an overview and synthesis of these reports and reveals a number of common themes to help medical educators implement changes in medical education in the next decade and beyond.

Conclusions

There is remarkable congruence in the recommendations of the 15 reports. The author proposes that the problems facing contemporary medical education have been thoroughly identified and that it is time to set forth on meaningful new paths: *manu hinc illi necessitates evict*

Health Affairs

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Gaps In Residency Training Should Be Addressed To Better Prepare Doctors For A Twenty-First-Century Delivery System Expand

Francis J. Crosson^{1,*}, Jean Leu², Beth M. Roemer³ and Murray N. Ross⁴

Fleener Centenary

Calls for Reform of Medical Education by the Carnegie Foundation for the Advancement of Teaching: 1910 and 2010

David M. Irbay, PhD, Molly Cooke, MD, and Bridget C. O'Brien, PhD

Abstract

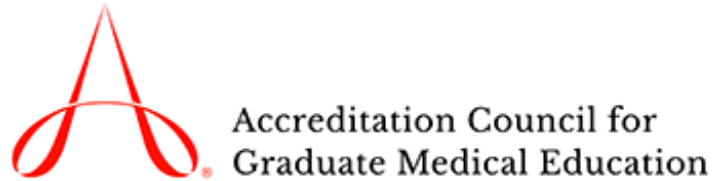
The Carnegie Foundation for the Advancement of Teaching, which in 1910 helped stimulate the transformation of North American medical education with the publication of the Fleener Report, has a venerated place in the history of American medical education. Within a decade following Fleener's report, a strong, scientifically oriented and rigorous form of medical education became well established; its structures and processes have changed relatively little since. However, the forces of change are again challenging medical education, and new

calls for reform are emerging. In 2010, the Carnegie Foundation will issue another report, *Educating Physicians: A Call for Reform of Medical School and Residency*, that calls for (1) standardizing learning outcomes and individualizing the learning process, (2) promoting multiple forms of integration, (3) incorporating habits of inquiry and improvement, and (4) focusing on the progressive formation of the physician's professional identity. The authors, who wrote the 2010 Carnegie report, trace the seeds of these themes in Fleener's

work and describe their own conceptions of them, addressing the prior and current challenges to medical education as well as recommendations for achieving excellence. The authors hope that the new report will generate the same excitement about educational innovation and reform of undergraduate and graduate medical education as the Fleener Report did a century ago.

Acad Med. 2010; 85:220-227.

National organizations develop educational measurement standards



Competencies

describe (trainable) attributes of an individual

Milestones

describe the developmental trajectory of the individual



Entrustable Professional Activities

describe units of work

Entrustment for a task requires the synthetic application of multiple competencies at a specified level of performance (milestone)

AMA long history
in educational
standards and
leadership

Sponsor of Flexner Report

ACGME & ACCME

LCME

AMA Council on Medical Education

AMA: New Leadership, New Vision in 2012

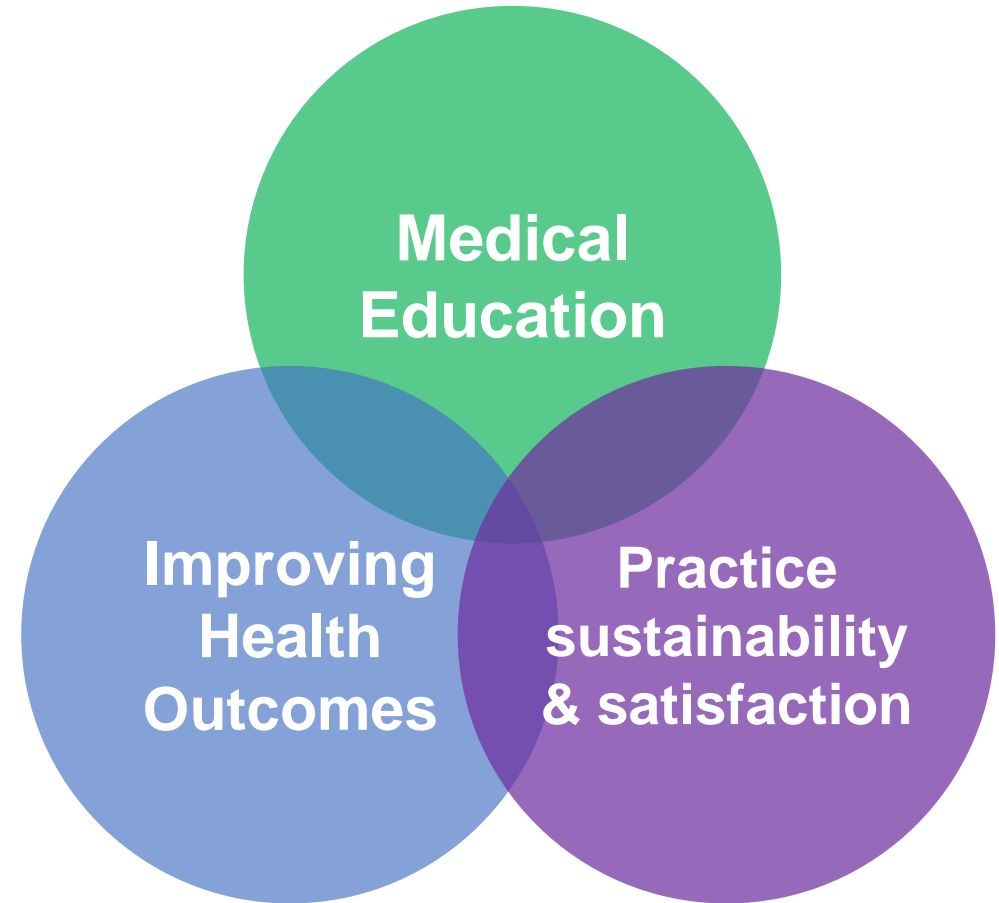
- **AMA MISSION:**

To promote the art and science of medicine and the betterment of public health

- **AMA STRATEGIC FOCUS:**

To advance outcomes-oriented initiatives that improve public health, medical education, and practice sustainability and professional satisfaction

AMA Strategic Focus
Areas:
2013-2023



The AMA Accelerating Change in Medical Education Initiative



AMA Accelerating Change in Medical Education Initiative

Gaps in Readiness for Practice

- Management of Chronic conditions
- Management of Care Coordination
- Systems Based Practice
- Practice Based Improvement
- Communication

Solid consensus on need for change

- 15 national reports in 10 years

Accelerating Change in Medical Education Initiative Goals

- 1** Create competency-based assessment and **flexible individualized learning plans**
- 2** Develop exemplary methods to achieve **patient safety, performance improvement and patient-centered team care**
- 3** Understand the **health care system and health care financing**
- 4** Optimize the **learning environment: pedagogy, tools, technology**

Accelerating
Change in Medical
Education
Initiative

Began with \$12.5 million in grants to medical schools

11 schools in
2013

21 schools in
2016



Consortium formed to jumpstart and speed dissemination of ideas

Venue for collaboration, innovation and scholarship

A.T. STILL UNIVERSITY | ATSU
SCHOOL OF OSTEOPATHIC MEDICINE IN ARIZONA

OHIO
Heritage College
of Osteopathic Medicine

SOPHIE DAVIS
SCHOOL OF BIOMEDICAL EDUCATION

MOREHOUSE
SCHOOL OF MEDICINE

The University of Texas at Austin
Dell Medical School

MICHIGAN STATE
UNIVERSITY | College of
Osteopathic Medicine

UConn
SCHOOL OF MEDICINE

UNIVERSITY OF UTAH
SCHOOL OF MEDICINE

RUTGERS
Robert Wood Johnson
Medical School

OHSU
School of
MEDICINE

East Carolina University
Brody School of Medicine

UTRGV
School of Medicine

BROWN
Alpert Medical School

VANDERBILT UNIVERSITY
SCHOOL OF MEDICINE

NYU School of Medicine
NYU LANGONE MEDICAL CENTER

HARVARD
MEDICAL SCHOOL | MAYO
CLINIC

AMA
AMERICAN MEDICAL
ASSOCIATION

M
MEDICAL SCHOOL
UNIVERSITY OF MICHIGAN

UW Medicine
SCHOOL OF MEDICINE

EVMS | UCDAVIS
SCHOOL OF MEDICINE

PENNSTATE HERSHEY
College of Medicine

UCSF
School of
Medicine

University of Nebraska
Medical Center

INDIANA UNIVERSITY
SCHOOL OF MEDICINE

FIU
Herbert Wertheim
College of Medicine
FLORIDA INTERNATIONAL UNIVERSITY

UNC
SCHOOL OF MEDICINE

UND SCHOOL OF MEDICINE & HEALTH SCIENCES
UNIVERSITY OF NORTH DAKOTA

SCHOOL OF MEDICINE
CASE WESTERN RESERVE
UNIVERSITY

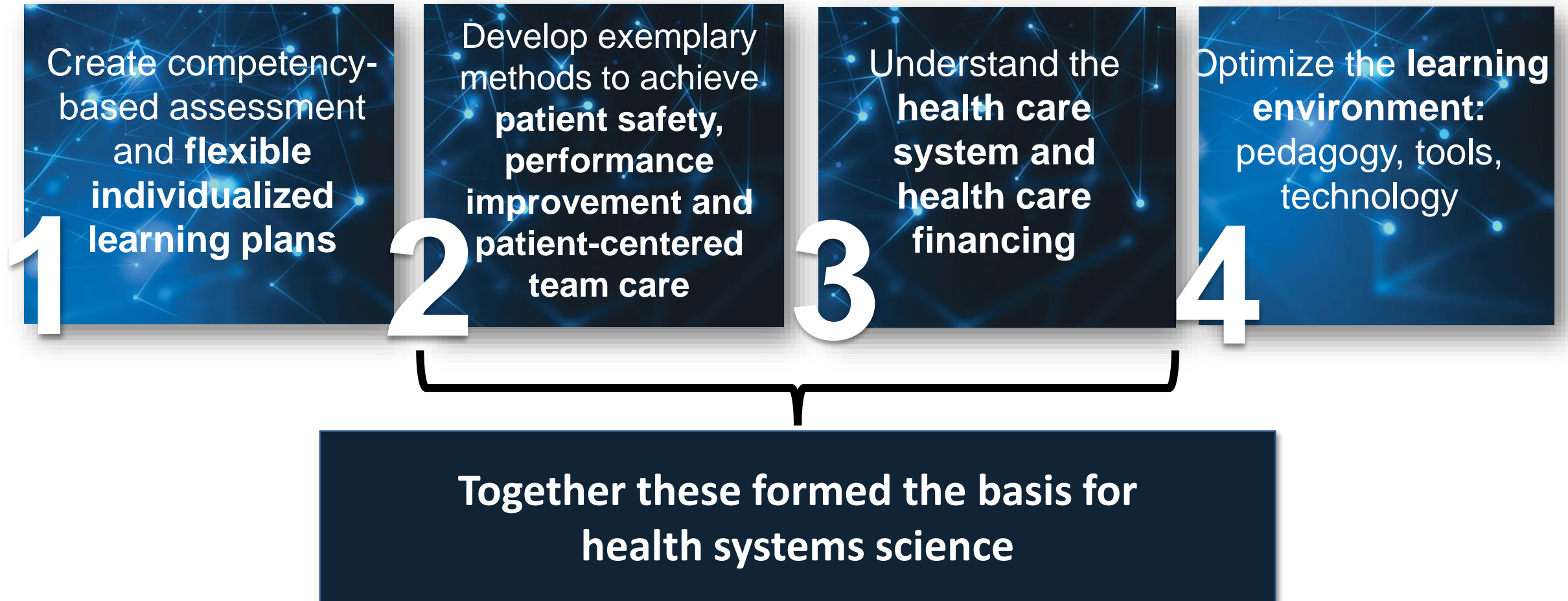
Sidney Kimmel
Medical College.
at Thomas Jefferson University

EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

THE UNIVERSITY OF
CHICAGO
PRITZKER SCHOOL
OF MEDICINE

The Accelerating Change in Medical Education

original goals included health systems science



Early on, HSS faced two barriers to implementation

Faculty Development

Very few faculty had been taught health systems science, and common understanding of how to implement it was lacking

Teaching Materials

Faculty tasked with teaching HSS lacked high quality materials, forcing creation of new materials

The AMA ACE Consortium

Twice yearly conferences with grant teams

Monthly meetings with PIs and Interest Groups

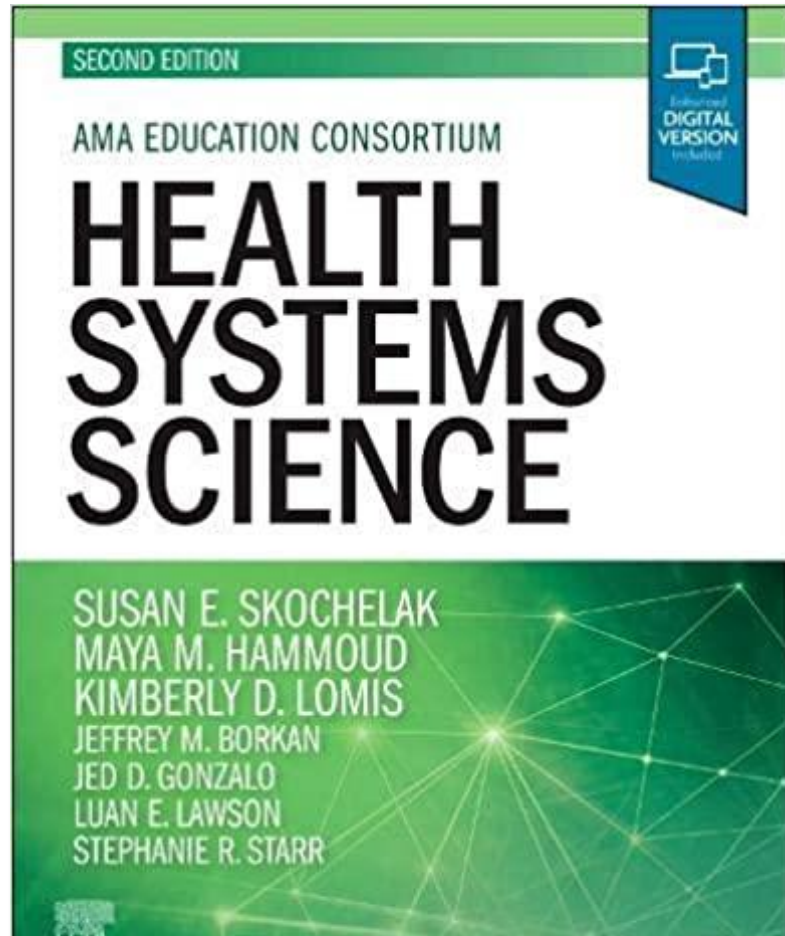
Site visits to schools

Student focused meetings

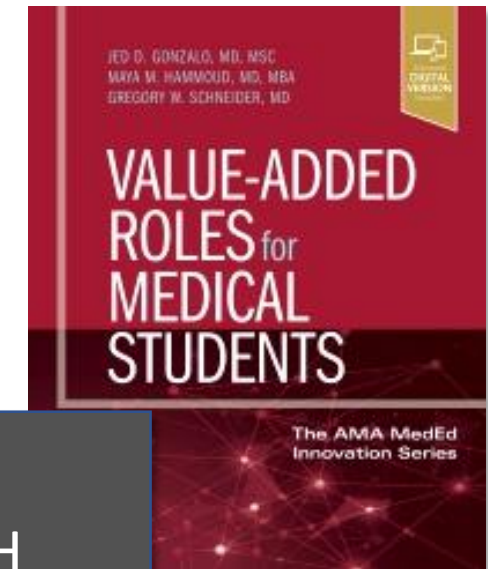
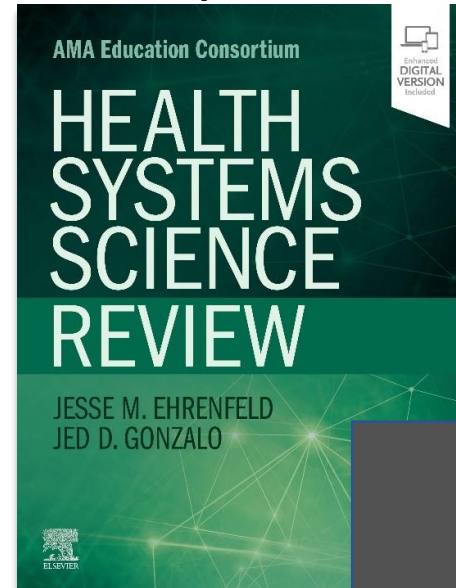
Eventually, annual ACE conferences

www.changemeded.org

Publications came first to establish importance, common language and best practices



Second edition released in 2020



HEALTH
SYSTEMS
SCIENCE
IMPLEMENTA-
TION GUIDE

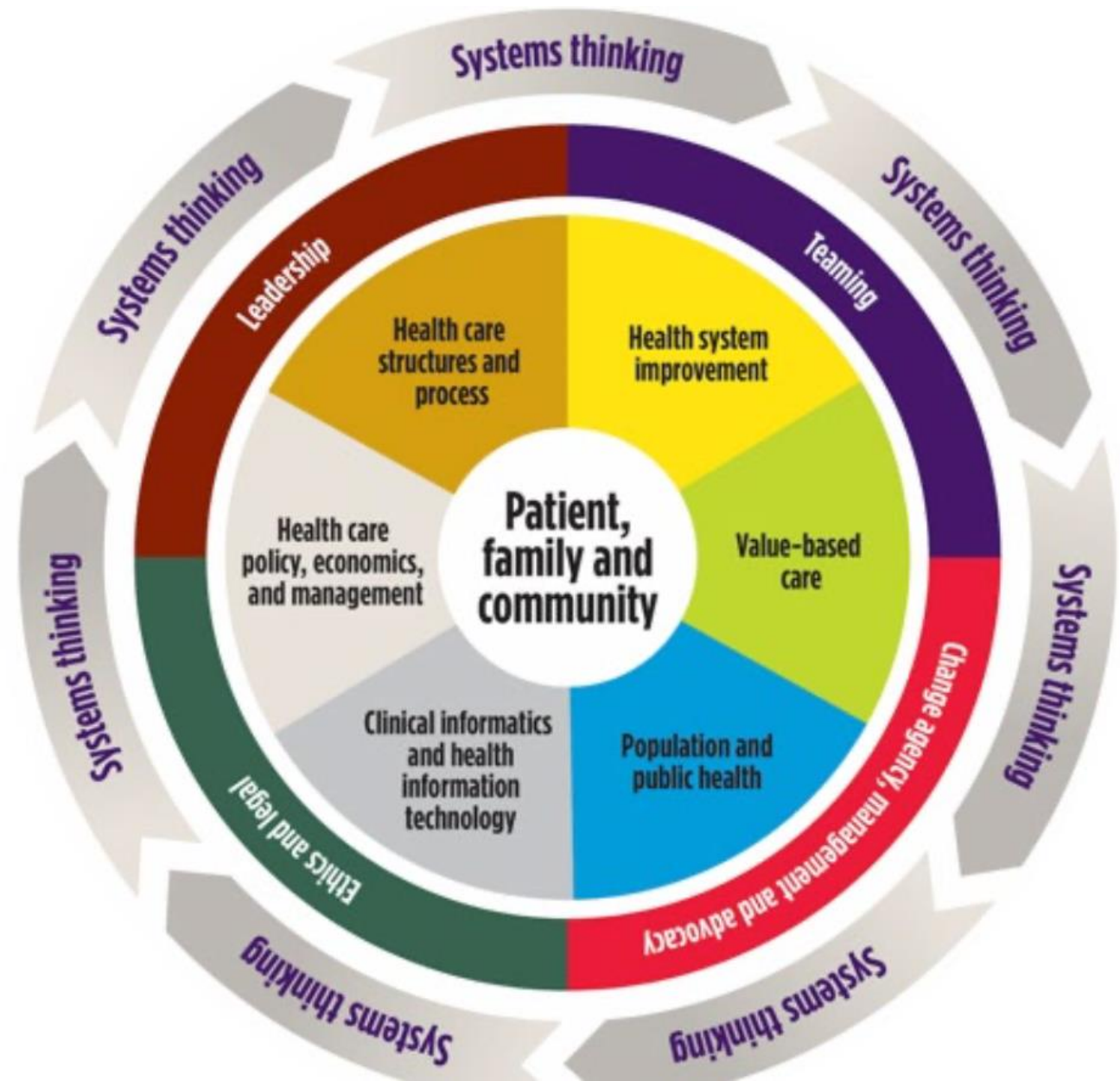
What is Health System Science?



Health Systems Science (HSS)

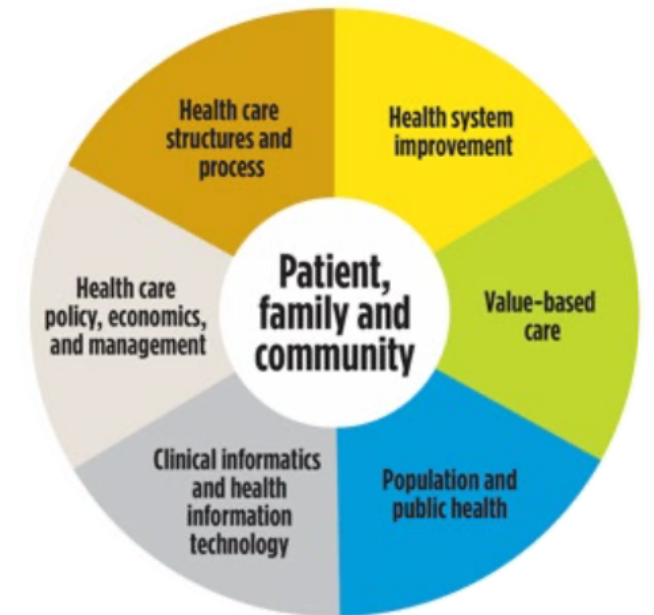
The principles, methods and practice of improving quality and patient experience, outcomes and costs of health care delivery for patients and populations within systems of medical care

Health Systems Science: 12 Domains



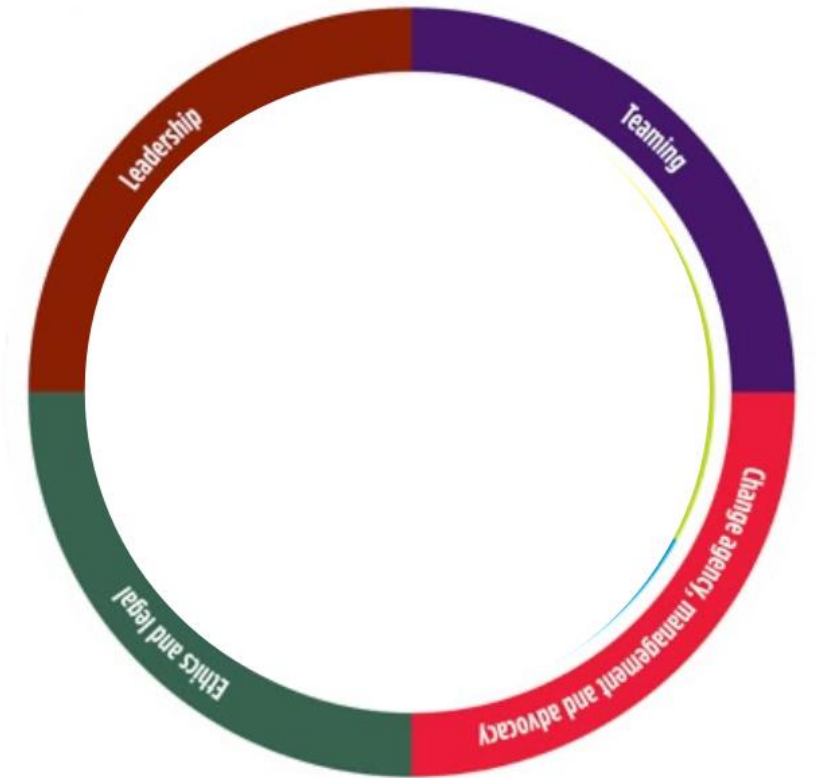
HSS Core Functional Domains

1. Patient, family, community
2. Health care structure and process
3. Health care policy and economics
4. Clinical informatics and health technology
5. Population, public and social determinants of health
6. Value in health care
7. Health system improvement



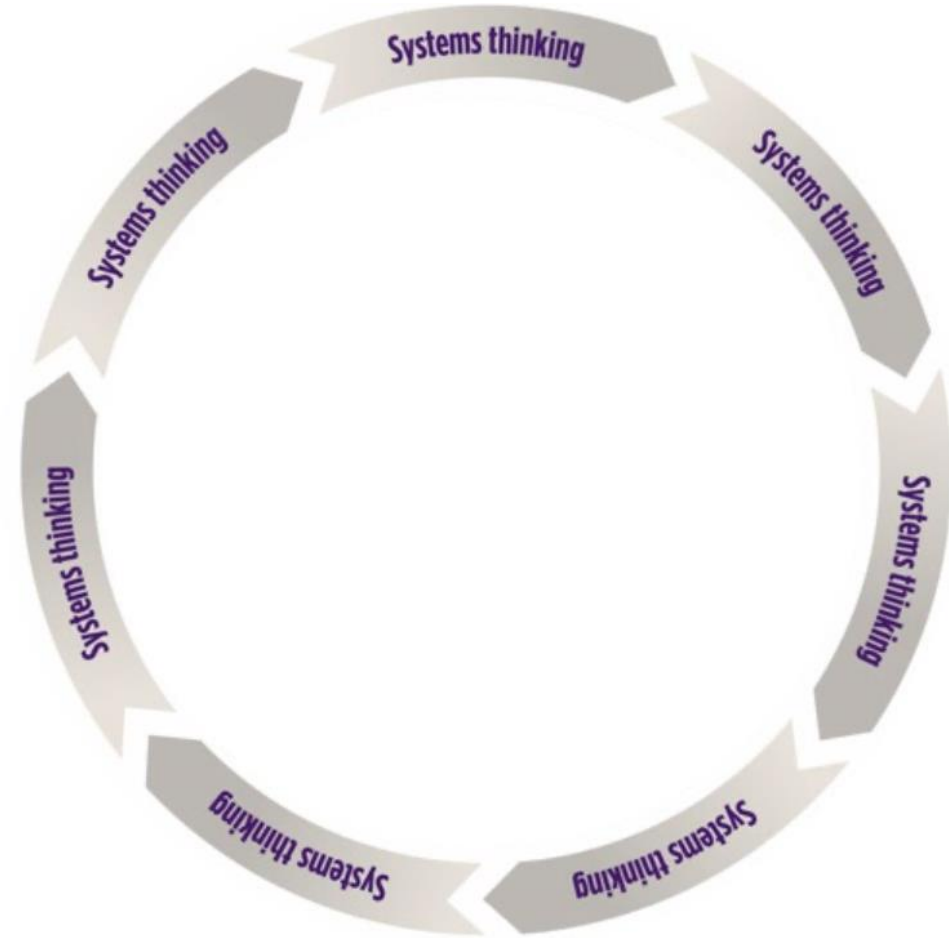
HSS Foundational Domains

1. Change agency, management and advocacy
2. Ethics and legal
3. Leadership
4. Teaming

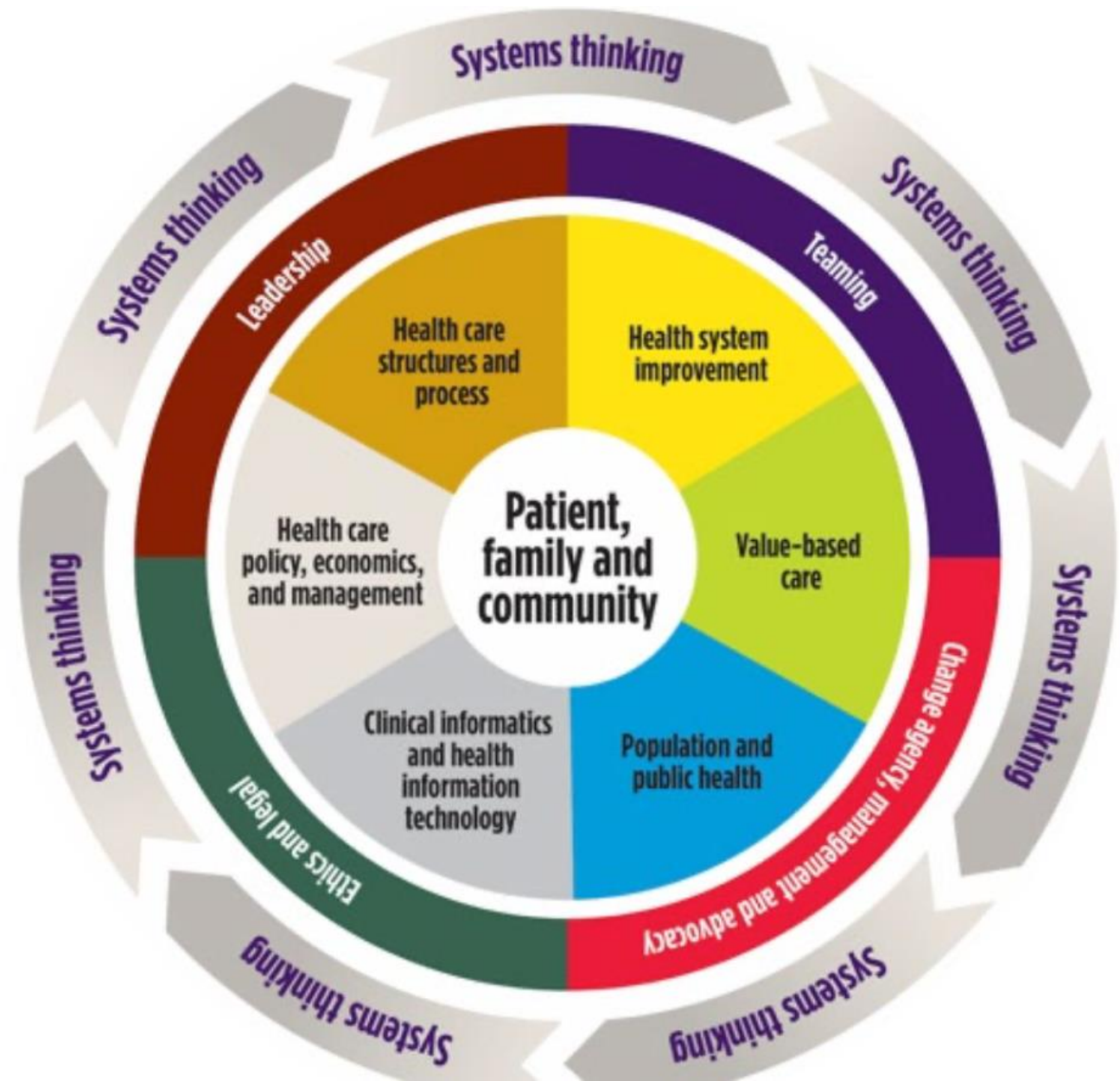


HSS Linking Domain

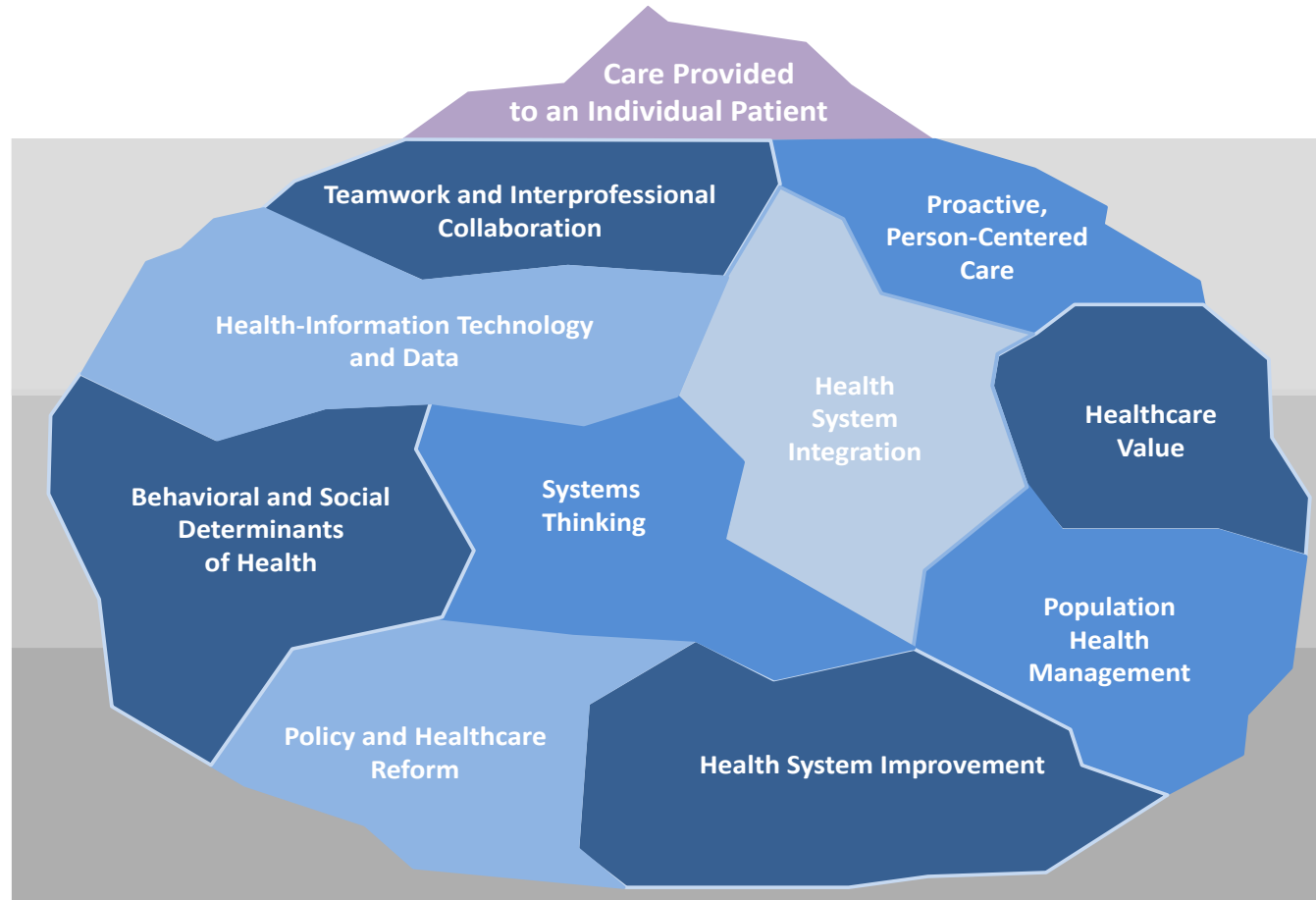
Systems Thinking



Health Systems Science: 12 Domains



Systems-based subjects underlay the delivery of individual care



- Current curriculum primarily focuses on what's above the waterline
- Need early and continuous immersion in the workings of health systems to gain competency in managing patient care

Teaching Health System Science

Examples from
ACE Schools



Students adding value to health systems



- Patient navigator program
- Combines health systems science course with immersive experiences working in interprofessional health care teams
- Authentic roles, problem solving for patients and families

ECU Brody School of Medicine

Teachers of Quality Academy

- Draws participants from clinical faculty, participate in IHI Open School, teaching skills, year long faculty development program
- More than 50 quality improvement projects for the ECU healthcare system
- Leadership Academy track for medical students



NYU Grossman School of Medicine

Health Care by the Numbers Curriculum



- Virtual patient panels from de-identified EHRs
- Using big data for analyzing population based problems
- E-portfolio to allow students to track own patient experiences

Key factors to preventing “broccoli” outcomes

- Authentic learning experiences
- Connected to patient care and outcomes
- Integrated within existing curriculum
- Faculty development
- Meaningful assessment



Long Term Outcomes



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SCHOOL OF MEDICINE

UNIVERSITY OF UTAH
SCHOOL OF MEDICINE

RUTGERS
Robert Wood Johnson

School of
MEDICINE

East Carolina University
Brody School of Medicine

UTRGV

MORE THAN
\$14.1 MILLION

TO
37 MEDICAL
SCHOOLS

TODAY, THESE FUNDS SUPPORT

23,000

MEDICAL STUDENTS

WHO WILL ONE
DAY PROVIDE CARE
FOR MORE THAN
40 MILLION
PATIENTS ANNUALLY

EVMS
UC DAVIS
SCHOOL OF MEDICINE

PENNSYLVANIA STATE UNIVERSITY
HERSHEY
College of Medicine

UCSF
School of
Medicine

University of Nebraska
Medical Center

INDIANA UNIVERSITY
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Partnerships have played a key role in the dissemination of health systems science



NBME American Medical Association
 In Collaboration with the National Board of Medical Examiners

Examinee Performance Profile
 Health Systems Science
 000000 - Generic Medical School

ID: 0000
 Name: Student A
 Test Date(s): mm/dd/yyyy
 Total Percent Correct Score: ###

The score you received on this examination is shown above. This Performance Profile is provided to aid in self-assessment. The profile provides information regarding your performance compared to the performance of a comparison group of examinees on the major content areas of the examination. The comparison group includes first-time takers from LCME-accredited and COCA-accredited medical schools who took this examination under standard testing conditions. The mean performance of the comparison group is represented by the vertical line.

Performance bands indicate areas of relative strength and weakness. Some bands are wider than others. The width of a performance band reflects the precision of measurement; narrower bands indicate greater precision. A **III** or **IV** symbol indicates that your performance band extends beyond the displayed portion of the scale. Because many of the content areas are based on a relatively small number of items, small differences in the location of bands should not be over-interpreted. If two bands overlap, performance in the associated areas should be interpreted as similar. Please note that many items may contribute to more than one content area. Use caution when interpreting differences in performance across content areas.

	Lower Performance	Average Performance	Higher Performance
Health Systems Science Content Area			
Evidence-based Medicine	[Band]		
Patient Safety	[Band]		
Quality Improvement	[Band]		
Teamwork	[Band]		

HSS subject exam and inclusion of HSS questions in Step 1

Accelerating Change in Medical Education Consortium



ELSEVIER



Impact of Accelerating Change in Medical Education Initiative

Over first five years the consortium produced:

- 168 publications cited over 1,000 times
- 274 presentations regionally, nationally and internationally
- 600 consultations involving 250 organizations

ACE Consortium community of innovation continues

AMA Reimagining Residency Initiative

- \$15 million grant partnership with new partners to transform residency training

AMA HSS Scholars Program & Learning Series Modules

Impact of Accelerating Change in Medical Education Initiative

International adoption

- Korea
- South Africa
- Finland
- United Kingdom

Integration with Health Systems – deans for HSS

Fully integrated curriculum at new medical schools

- Kaiser Permanente Bernard J. Tyson School of Medicine
- Alice L Walton School of Medicine

Adoption across health professions education

WELCOME

19th Annual Physical Therapy Education Leadership Conference

Hosted by the American Council of Academic Physical Therapy
Education



Applying HSS to Physical Therapy Education

- Integrated curriculum, rather than topic focus
- Faculty development is critical
- Authentic learning experiences
- Capstone and projects are ideal for HSS
- Assessment matters
- Consortium creates and sustains energy and resources

Gratitude

- Leadership of ELC 2024
- Vision of Geneva R. Johnson
- AMA Medical Education Team
- ACE Consortium Schools

WELCOME

19th Annual Physical Therapy
Education Leadership Conference

Hosted by the American Council of Academic Physical Therapy
(ACAPT) and the APTA Academy of Education



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Textbook:

Health Systems Science, 2nd Edition – 2020 Editor: Susan E. Skochelak, et. al.
Paperback ISBN: 9780323694629