AMA ChangeMedEd International Webinar Series
Health systems science in medical education – perspectives from the U.S. and South Africa

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Kevin Heckman, MBA
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Today’s host

Kevin Heckman, MBA

Director, Product Development
American Medical Association
Objectives

• Learn the role of health systems science as the third pillar of medical education

• Identify the domains that make up health systems science

• Discuss the ways health systems science translates to the South African health system
Presenter

Jeffrey Borkan, MD, PhD
Chief of Family Medicine
Care New England
Chair & Professor, Department of Family Medicine
Assistant Dean for Primary Care – Population Health
Alpert Medicine School of Brown University
Presenter

Shabir Moosa, MBChB, MMed, MBA, PhD

Associate Professor, Department of Family Medicine
University of Witwatersrand

President-elect
WONCA Africa
Poll: Where are you based?

- South Africa
- United States
- Other African nation
- Other North American nation
- Asia
- Australia
- Europe
- South America
HEALTH SYSTEMS SCIENCE— the Third Science of Medicine and You

Jeffrey Borkan, MD, PhD
Chief of Family Medicine, Care New England
Chair & Professor
Department of Family Medicine
Assistant Dean for Primary Care-Population Health
Alpert Medical School of Brown University
Disclosures

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Goals

1. Introduce Health Systems Science (HSS) as third science of medicine
2. Explore the elements of HSS
3. Describe a program that utilizes HSS in its curriculum
4. Consider how you might incorporate into your medical educational training
Questions:

When Abraham Flexner visited all medical schools in the US (155) to prepare for his 1910 report, what was the dominant form of medical education?

1. Dissection and quizzes in the morning, hours of lectures in the afternoon, and preparation/reading in the evening
2. Long hours in teaching hospitals and clinics; reading at night
3. Apprenticeships with veteran physicians; scanty formal study
Poll: What was the dominant form of medical education in the US in 1910?

- Dissection, lecture, reading
- Clinical work and reading
- Apprenticeship, little formal study
Flexner’s Dyad

Basic Science

Clinical Science
If Abraham Flexner came back in 2018, what would he find is the dominant form of medical education in the US?

1. Two years of basic science followed by two years of clinical science
2. Integrated basic and clinical science
3. Shortened basic science followed by clinical science and a jumble of other stuff mixed in
Poll: What is the dominant form of medical education in the US today?

- Two plus two
- Integrated basic & clinical science
- Shortened basic science & jumble
What do you need to successfully treat patients?

1. Clinical science based on sound evidence - including the basic and behavioral sciences
   • *mostly taught in medical school*

2. Knowledge and skill in maneuvering the health system
   • *mostly picked up on your own*
A New Triad

Basic Science

Clinical Science

Health Systems Science
Health Systems Science as the Third Science

...needed for the basic & clinical sciences to have full impact on the Quadruple Aim
Current curriculum only covers a subset of what physicians must learn.

Need early and continuous immersion into HSS to gain competency in managing patient care and care transformation.
AMA Health Systems Science textbook

- Health care delivery system, policy, economics
- Value, patient safety, quality improvement
- Teamwork/team science
- Leadership
- Clinical informatics
- Population health and socioeconomic determinants
- Application of foundational skills to HSS
- Assessment to support learning and improvement in HSS
- Future of HSS
# HSS competencies

<table>
<thead>
<tr>
<th>Foundational Competencies</th>
<th>Functional Competencies</th>
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<tr>
<td>Systems thinking</td>
<td>Patient-centered care</td>
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<tr>
<td>Change management and agency</td>
<td>Health care processes, collaboration, teamwork</td>
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<tr>
<td>Teaming</td>
<td>Clinical informatics, data, tools</td>
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<tr>
<td>Leadership</td>
<td>Population and public health</td>
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<td>Policy and payment</td>
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<td>High value care</td>
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<td>Health systems improvement (QI/PS)</td>
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Essential Skills for Health Systems Science that Every Medical Trainee Requires

“Domains of Competency”

Essential Skills enable people to perform tasks required by their jobs as well as adapt to change

- System-based care
- Practice-based learning
- Communication & Professionalism
- Teamwork
- Chronic disease management
- Practice & Population Management
- Coordination & Transitions of Care
- Integration of Care
- Quality, Performance, & Practice Improvement
- Information Technology
What is Population Health?

**the health outcomes of a group of individuals, including the distribution of such outcomes within the group**

Population Health v. Population Medicine?

David Kindig

**Population Health:**
the health outcomes of a group of individuals, including the distribution of such outcomes within the group*

*Encompasses multiple determinants of health that produce these outcomes*

**Population Medicine**
the specific activities of the medical care system that, by themselves or in collaboration with partners, promote population health beyond the goals of care of the individuals treated**

**primarily concerned with clinical or health care determinants of health, but acknowledges the vital role of multi-sector partnerships to influence health more broadly.**
## Definitions

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<th>Public Health (WHO)</th>
<th>All organized measures (whether public or private) that prevent disease, promote health, and prolong life among the population as a whole</th>
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<tr>
<td>Population Health (IHI)</td>
<td>The health outcomes of a group of individuals, including the distribution of such outcomes within the group</td>
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<tr>
<td>Population Medicine (IHI)</td>
<td>The design, delivery, coordination, and payment of high-quality healthcare services to manage the Triple Aim for a population using the best resources we have available within the healthcare system</td>
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Evolving Field

The definitions and domains are still developing and maturing
Theoretical Models

Socio-Ecological Model

Bio-Psycho-Social Model

Social Determinants of Health

“Health begins where we live, learn, work and play.”

Reference Links to RWJF papers
http://bit.ly/2oksA0

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Making Health Systems Science Come Alive at Brown:
The Primary Care – Population Medicine Program

Year 1:
• Health Systems Science & Methods courses

Year 2:
• Leadership Course
• Navigation Program

Year 3:
• Context of Care Morning Report
• Population Medicine Course
• Longitudinal Integrated Clerkship

Year 4: Capstone in Population Medicine

Thesis project: all 4 years
The Four Year Continuum

Active Learning/Flexibility/Creativity/Scholarship

Basic Sciences and Population Medicine/Health Systems Science

Clinical Sciences and Population Medicine/Health Systems Science
What is Exciting?

Engaging students, faculty, health teams, patients & health systems

Acting on a broader slice of the Socio-Ecological Model

Focusing on systems, continuity, and illness courses in addition to disease mechanisms

Using data in a meaningful fashion to engage social determinants and reduce health disparities – and meet the Quadruple Aim

Changing the world…or at least a piece of it
Question for Participants:

What elements of Health Systems Science would you like to start incorporating into your training curriculum

1. This year?
2. In the next 5 years?
Please spread Health Systems Science ACROSS THE WORLD!!
Thank You
Health System Science in South Africa

“PHC will be the heartbeat of the NHI. PHC starts in the communities and is the first level of contact with the health system by individuals, the family and community.”

Clause 158/159, White Paper on NHI, 2015

Prof. Shabir Moosa, Family Physician
Wits-Johannesburg Health District
South African Context

- Population 55m
- GDP: $5273 per capita
- Apartheid history
- Transformation?
- Public-Private divide
  - Private 9m @ $11.1b
  - Public 46m @ $12.6b
Challenges in South Africa

- Quadruple Burden of Disease
- HR challenges (esp. doctors)
  - 1 GP: 5000 people
- Quality of care challenges
- Prospects?
  - Private Sector
  - Information Technology
Health System Changes

• NHI
  – Purchaser-Provider Split
  – Contracted Providers
    • PHC: Mixed Capitation
    • Specialist: Fee-for-service
    • Hospitals: DRGs
  – Including Private Sector Providers
Chiawelo Community Practice

- NHI Service Innovation
- Community-oriented Primary Care (COPC)
  - Population management
  - Community engagement
  - Team-based PHC
  - Targeted Health Promotion
- NHI Capitation design
“Health System Science” in SA

• Borrowed term ‘Health System Science” (HSS) from AMA in 2017

• Currently
  – Public Health
  – Health Management
  – Clinical Governance

• Health System Science?
HSS in training: BHSc

• Bachelor of Health Sciences (BHSc)
  – 3 year graduate entry track to medical training
  – 50% entry into medical school
  – Revision for Health Systems Science especially in Y2, Y3
  – Career path
    • Stronger GEMP
    • Health management
    • Health leadership
HSS in training: GEMP

• Graduate Entry Medical Training Programme (GEMP) for 4 years
HSS in training: Registrars

• Registrars in Family Medicine
  – Practice Management
  – NHI Capitation Context?
    • Population management
    • Team-based
    • Performance focus
  – Online distance-based and applied approach
• Other Registrars?
Wits HSS Themes

- Health Systems
- Health Economics and Payment Systems
- Clinical Governance, Law and Ethics in Health
- Population Health and COPC
- Leadership and Strategic Management in Health
- Human Resources and Teamwork
- Quality and Service Improvement
- Value in Healthcare
- Health Information Management
- Social Marketing and Health Promotion
- Health Administration
- Entrepreneurship and Personal Finance
Questions/Comments?

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Questions?
Join the AMA for our next international perspectives webinar

November 1, 2018

Key issues in Health Systems Science
Healthcare leadership in Africa