



AMA ChangeMedEd International Webinar Series

Health systems science in medical education – perspectives from the
U.S. and South Africa

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Shabir Moosa, MBChB, MMed, MBA, PhD

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August 13, 2018

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

ACCELERATING CHANGE ^{IN} MEDICAL EDUCATION

HEALTH SYSTEMS SCIENCE– the Third Science of Medicine and You

Jeffrey Borkan, MD, PhD

Chief of Family Medicine, Care New England

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A.T. Still University, School of Osteopathic Medicine in Arizona
Brody School of Medicine at East Carolina University
Case Western Reserve University School of Medicine
CUNY School of Medicine
Dell Medical School at the University of Texas at Austin
Eastern Virginia Medical School
Emory University School of Medicine
Florida International University Herbert Wertheim College of Medicine
Harvard Medical School
Indiana University School of Medicine
Mayo Clinic School of Medicine
Michigan State University College of Osteopathic Medicine
Morehouse School of Medicine
New York University School of Medicine
Ohio University Heritage College of Osteopathic Medicine
Oregon Health & Science University School of Medicine
Pennsylvania State University College of Medicine
Rutgers Robert Wood Johnson Medical School
Sidney Kimmel Medical College at Thomas Jefferson University
University of California, Davis, School of Medicine
University of California, San Francisco, School of Medicine
The University of Chicago Pritzker School of Medicine
University of Connecticut School of Medicine
University of Michigan Medical School
University of Nebraska Medical Center College of Medicine
University of North Carolina School of Medicine
University of North Dakota School of Medicine and Health Sciences
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University of Utah School of Medicine
University of Washington School of Medicine
Vanderbilt University School of Medicine
The Warren Alpert Medical School of Brown University

Disclosures

Many parts of this work has been supported by the AMA – Accelerating Change in Medical Education (ACE) program and by the efforts of the AMA-ACE Consortium medical schools



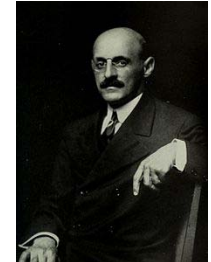
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**ACCELERATING
CHANGE
IN MEDICAL
EDUCATION**

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:



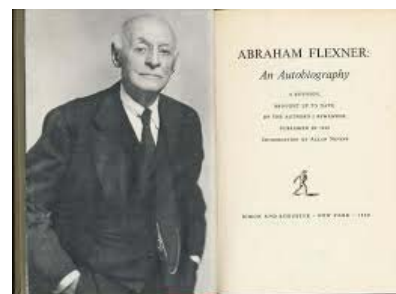
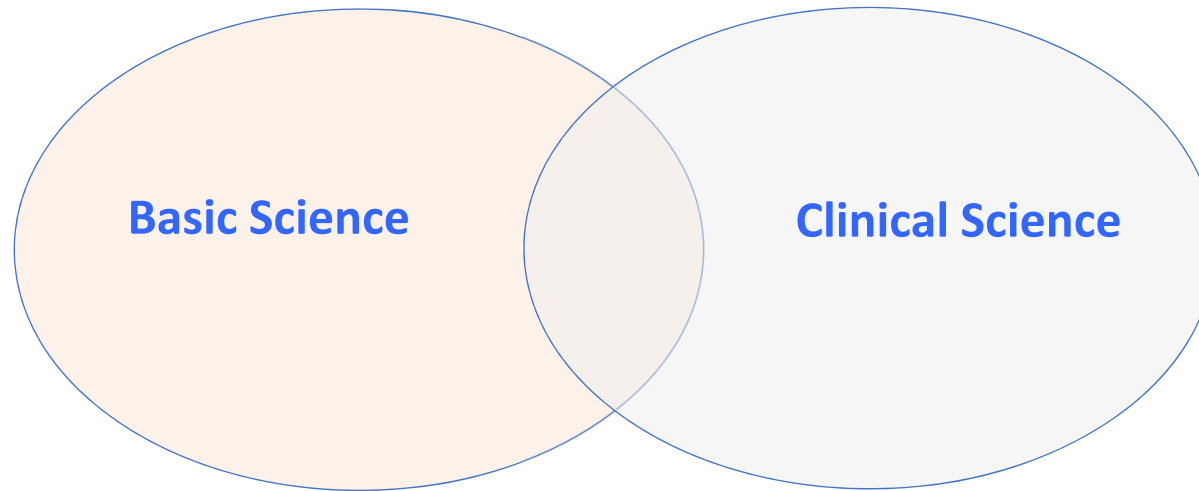
When Abraham Flexner visited all medical schools in the US (155) to prepare for his 1910 report, what was the dominant form of medical education?

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



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?

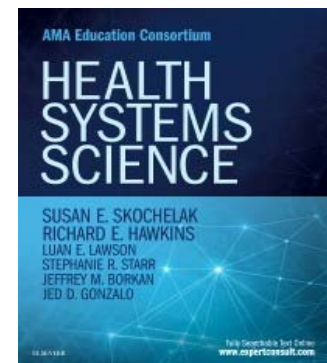
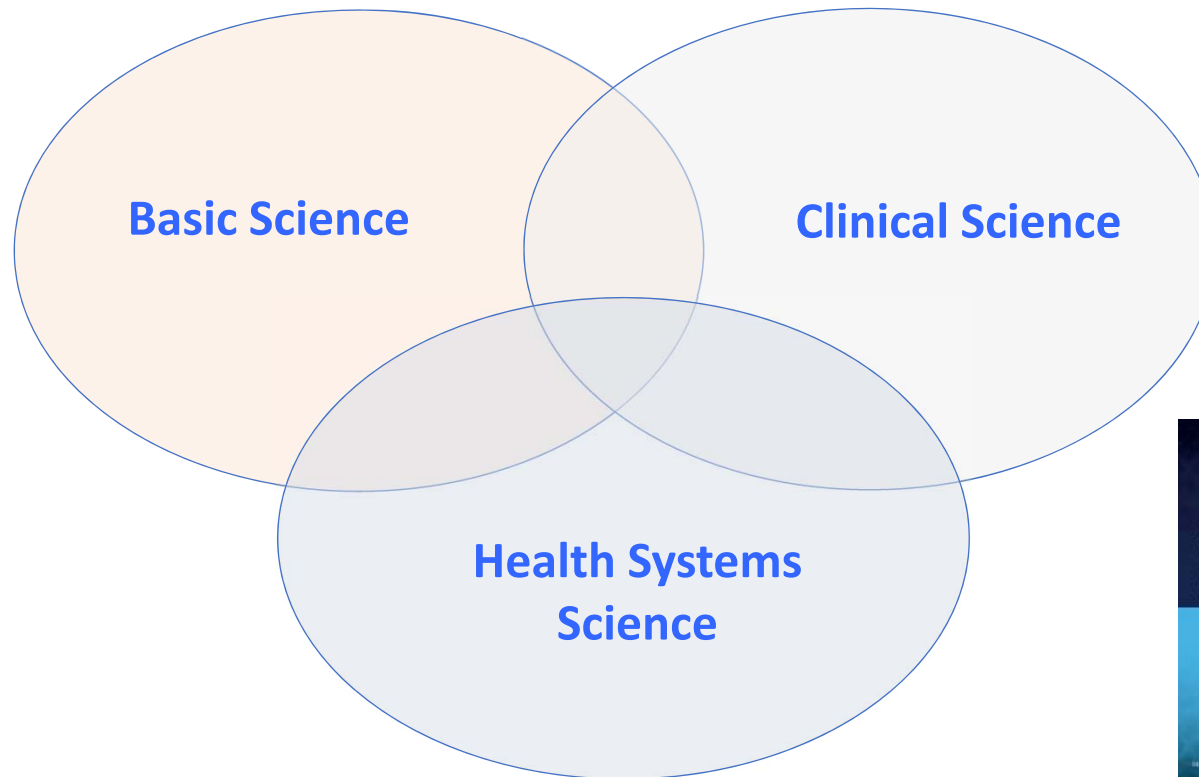
- Two plus two
- Integrated basic & clinical science
- Shortened basic science & jumble

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*

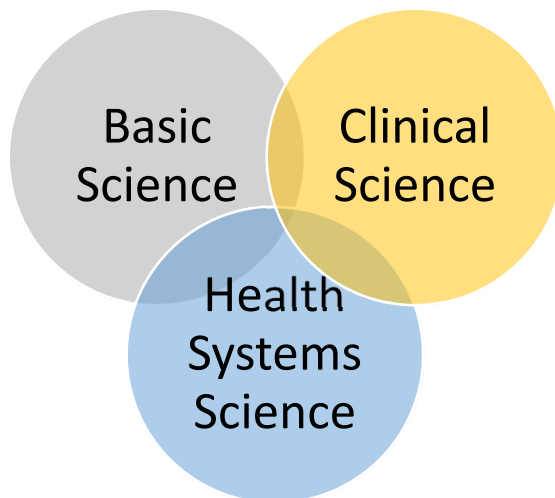


A New Triad

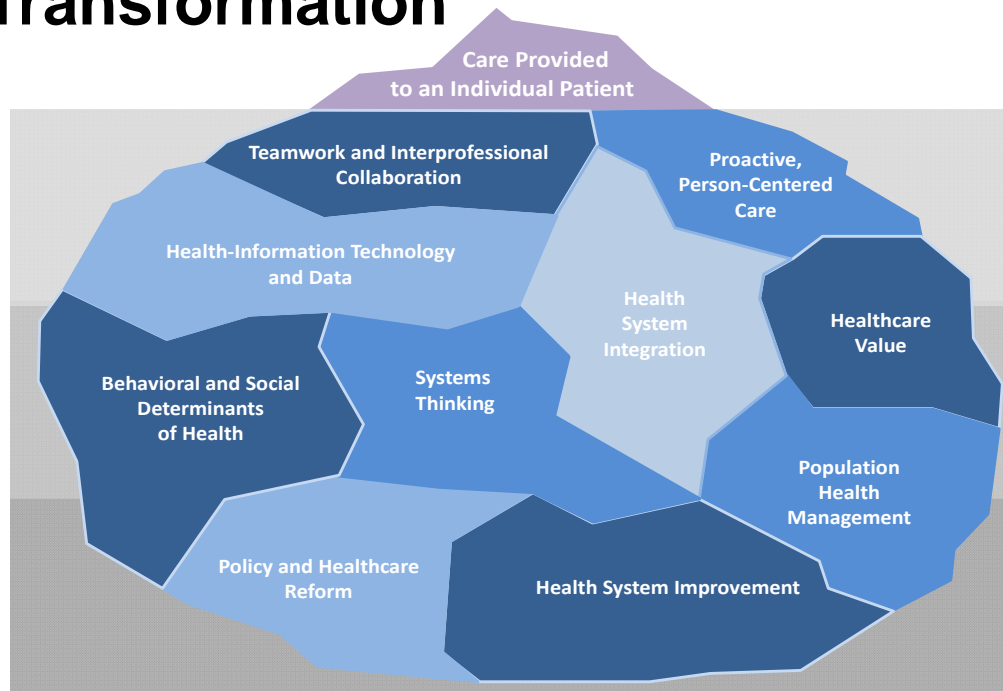


Health Systems Science as the Third Science

...needed for the basic & clinical sciences to have full impact on the Quadruple Aim



Iceberg of Health Systems Science and Care Transformation

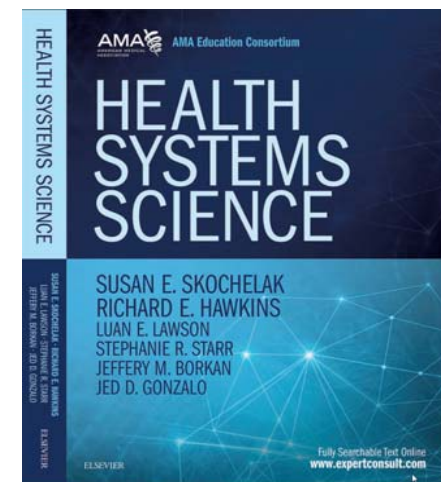


Current curriculum only covers a subset of what physicians must learn

Need early and continuous immersion into HSS to gain competency in managing patient care and care transformation

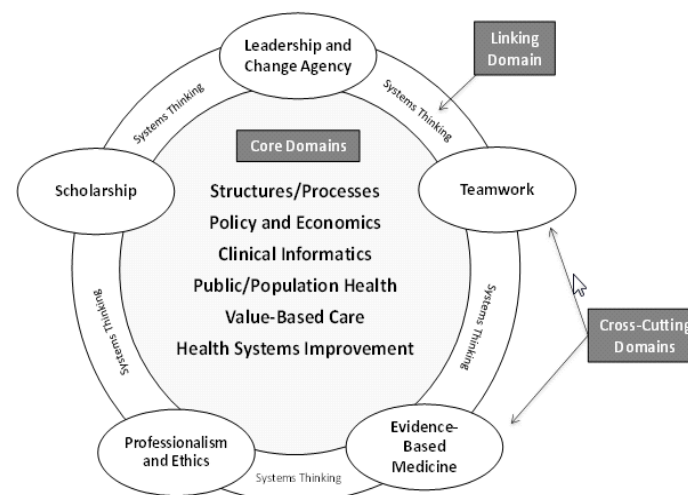
AMA Health Systems Science textbook

- 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

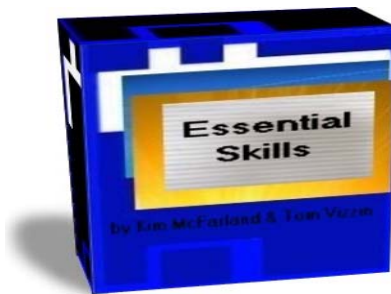
Foundational Competencies	Functional Competencies
Systems thinking	Patient-centered care
Change management and agency	Health care processes, collaboration, teamwork
Teaming	Clinical informatics, data, tools
Leadership	Population and public health
	Policy and payment
	High value care
	Health systems improvement (QI/PS)



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



Kindig D, Stoddart G (March 2003). ["What is population health?"](#) (PDF). *American Journal of Public Health*. **93** (3): 380–3.

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**

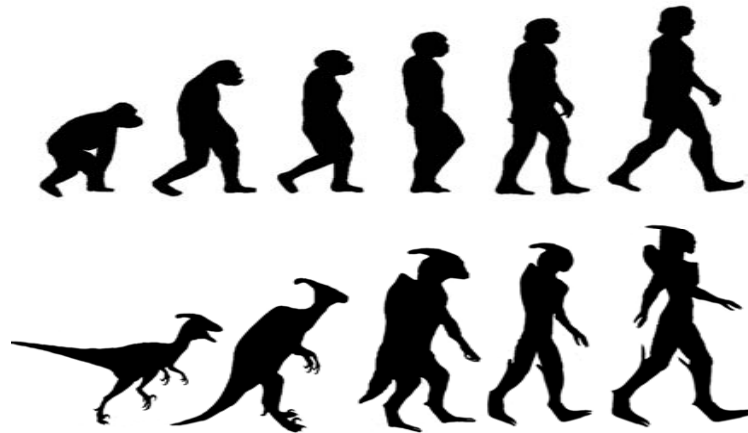
***primarily concerned with clinical or health care determinants of health, but acknowledges the vital role of multi-sector partnerships to influence health more broadly.*

Definitions

Public Health (WHO)	All organized measures (whether public or private) that prevent disease, promote health, and prolong life among the population as a whole
Population Health (IHI)	The health outcomes of a group of individuals, including the distribution of such outcomes within the group
Population Medicine (IHI)	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

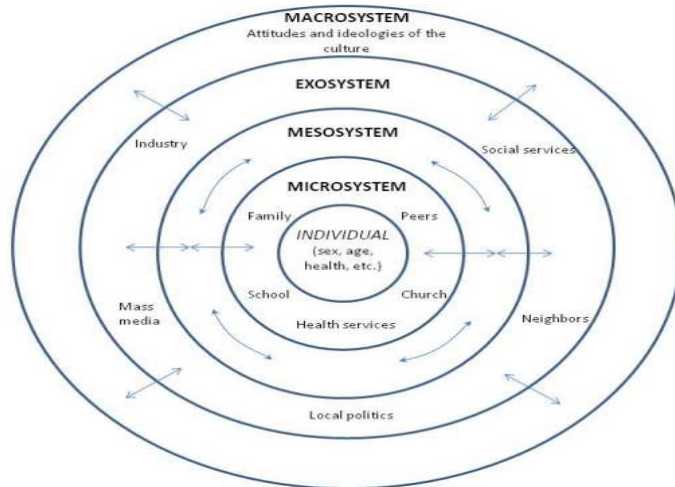
Evolving Field

The definitions and domains are still developing and maturing

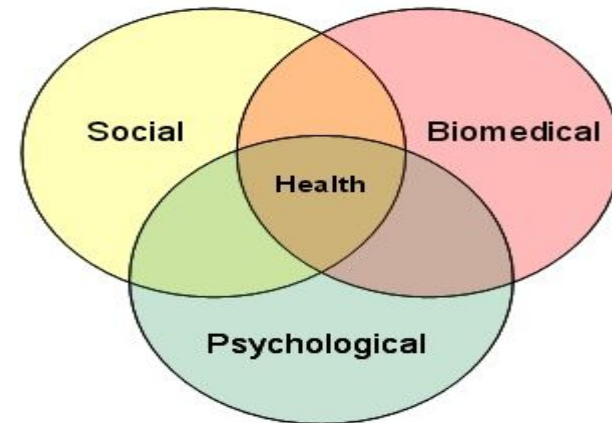


Theoretical Models

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/2pP6uDo>

<http://bit.ly/2okIsAO>

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BROWN
Alpert Medical School

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:

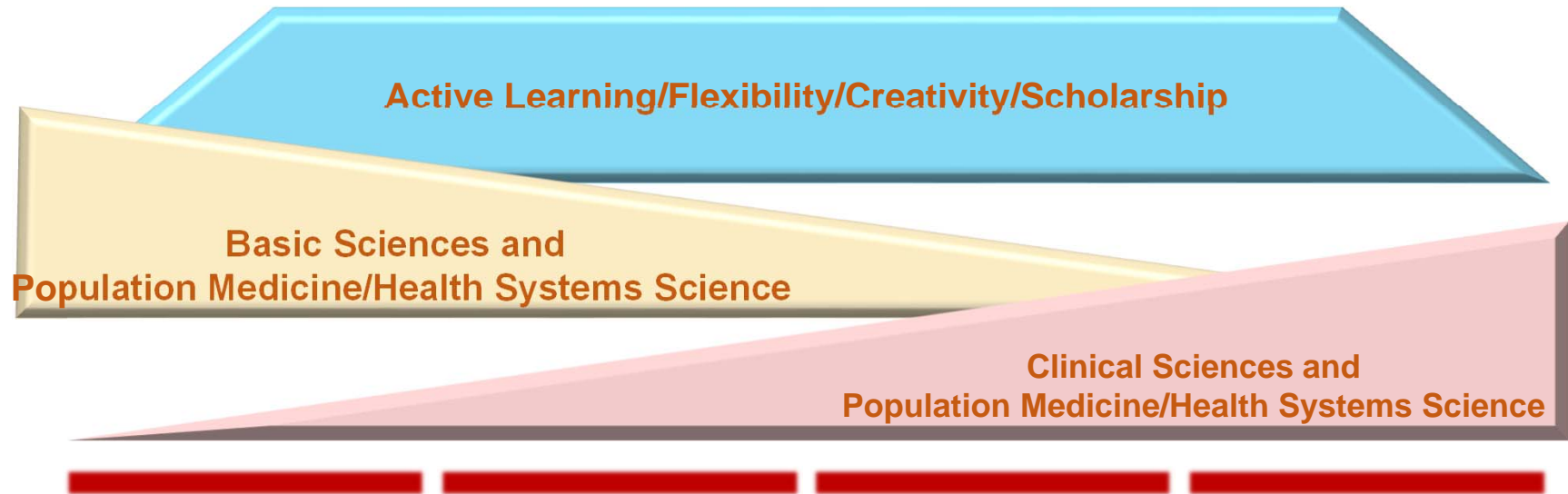
- Context of Care Morning Report
- Population Medicine Course
- Longitudinal Integrated Clerkship

Year 4: Capstone in Population Medicine

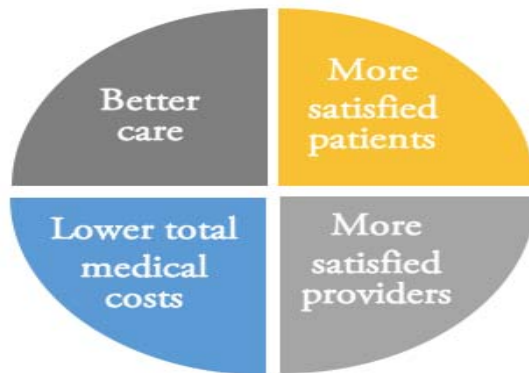
Thesis project: all 4 years



The Four Year Continuum



Socio-Ecological Model



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!!





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



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South African Context

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

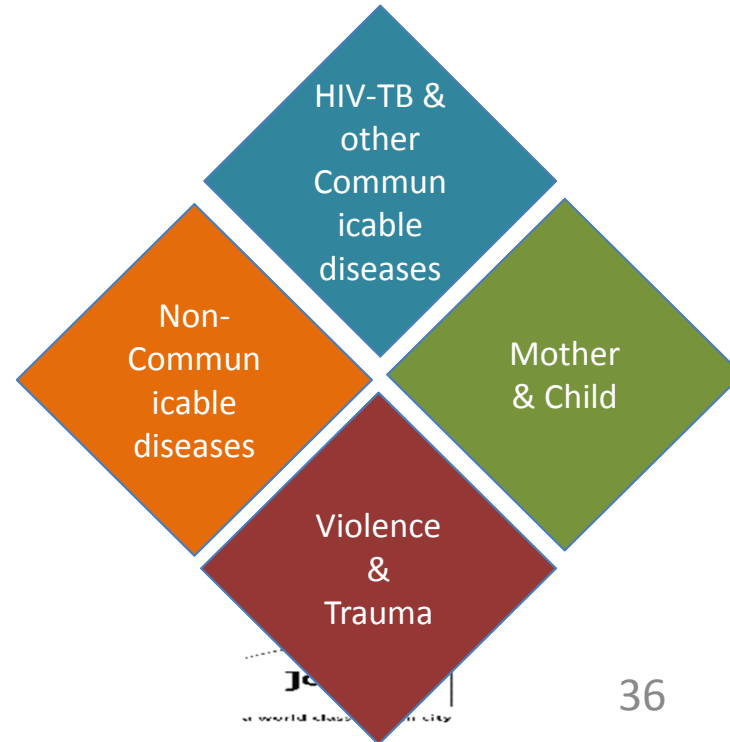


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Challenges in South Africa

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



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Johannesburg
a world class city

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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



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“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?



**WITS School of
Public Health**



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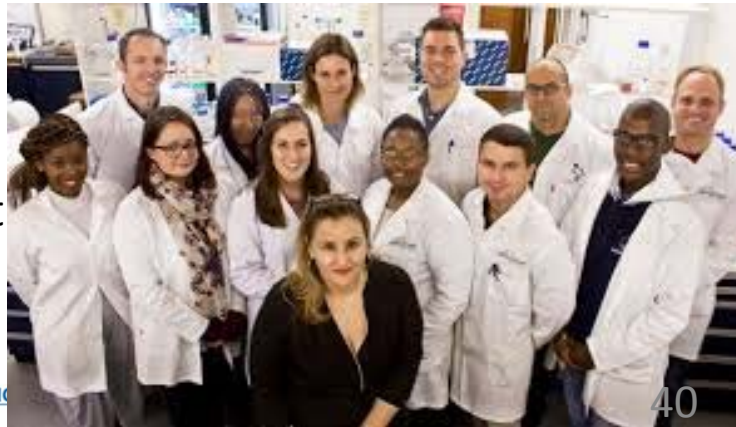


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HSS in training: BHSc

- 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

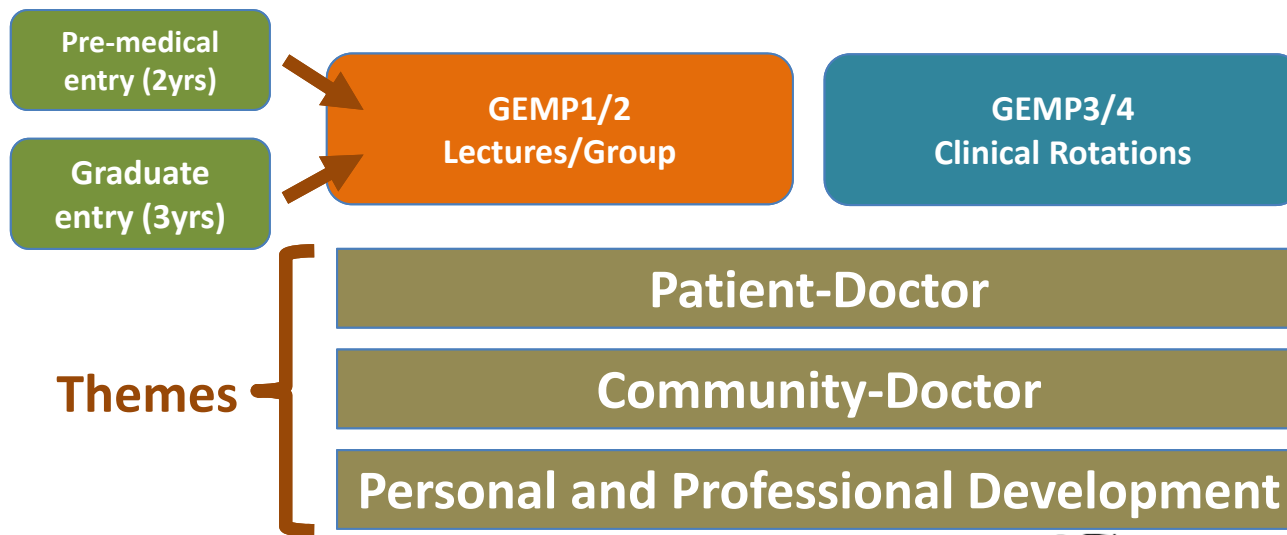


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HSS in training: GEMP

- Graduate Entry Medical Training Programme (GEMP) for 4 years



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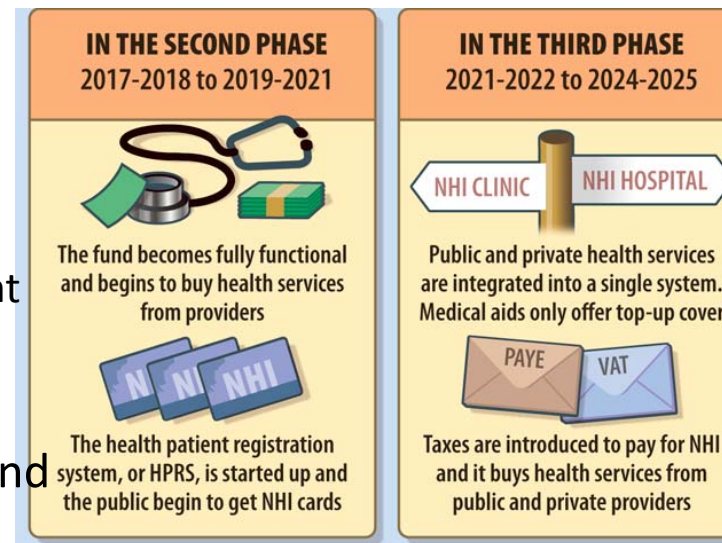


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HSS in training: Registrars

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



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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



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Questions/Comments?

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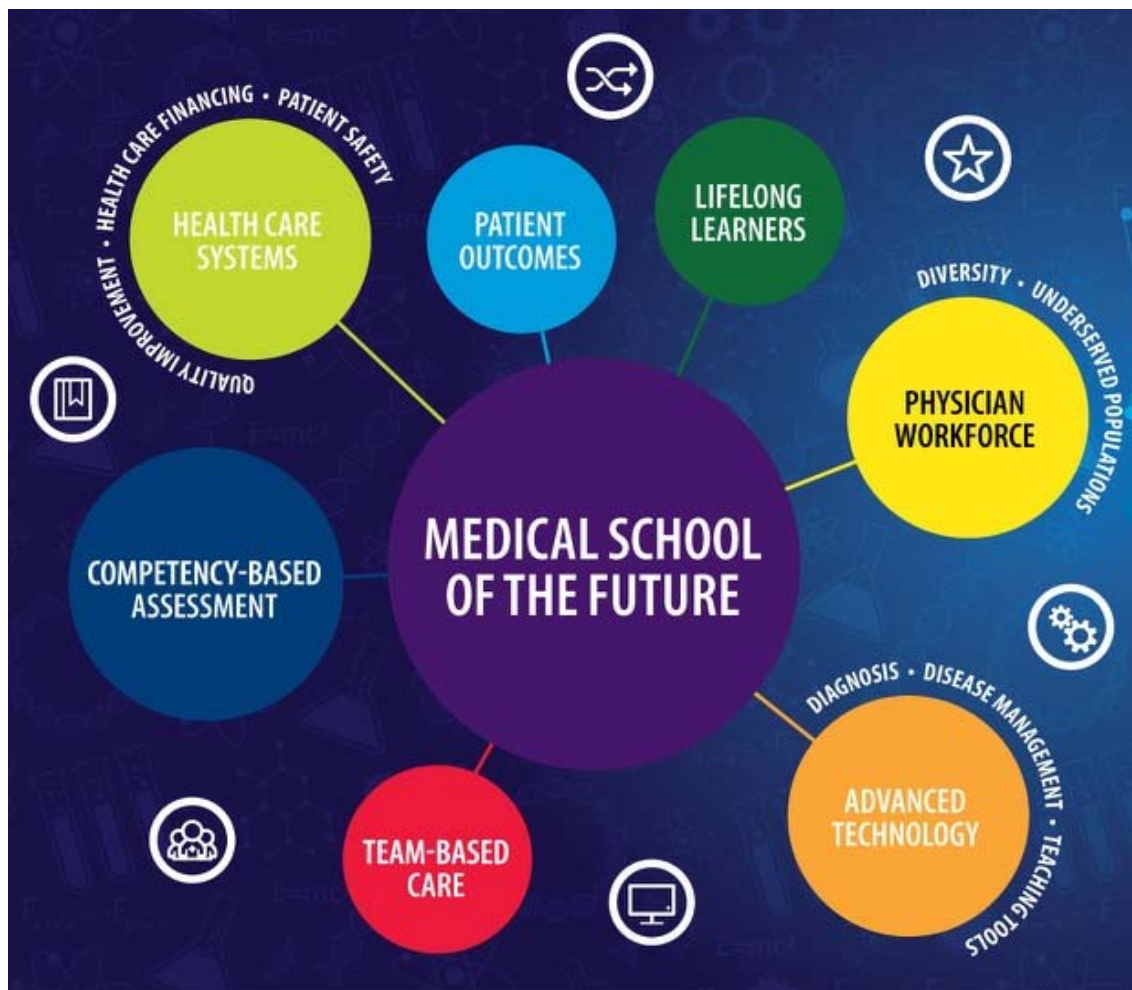


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A photograph of a person in a white lab coat, seen from the side, holding a tablet. The tablet screen displays a calendar application with a grid of dates. The person's left hand is at the bottom of the tablet, and their right hand is near the top, with fingers slightly curled as if interacting with the screen. The background is a dark, textured surface, possibly a brick wall. The entire image has a blue tint.

Questions?



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international perspectives
webinar**

November 1, 2018

Key issues in Health Systems Science
Healthcare leadership in Africa