The Quality of Healthcare and Medical Education

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Major Demands in Healthcare

- Capacity
  - There is a shortage of healthcare workers
    - Relationship between mortality/morbidity and worker density
    - Shortfall of 4.3 million workers
      - Migration
      - Maldistribution
      - Poor production
    - Low income countries are particularly affected
- Quality
  - Quality is often compromised
    - Relationship between mortality/morbidity and healthcare quality
      - 40 of 100 admissions in the US result in some harm to patients
      - Race/income disparities
      - Absence of evidence-based standards
      - Lack of continuity in care

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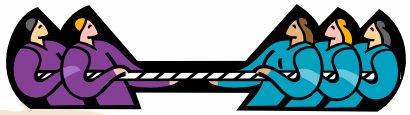
Health Professions Education

- Some responses to the demands are beyond the reach of health professions education
  - Healthcare system reform
  - Financing of education and the healthcare system
  - Migration
  - International trade agreements

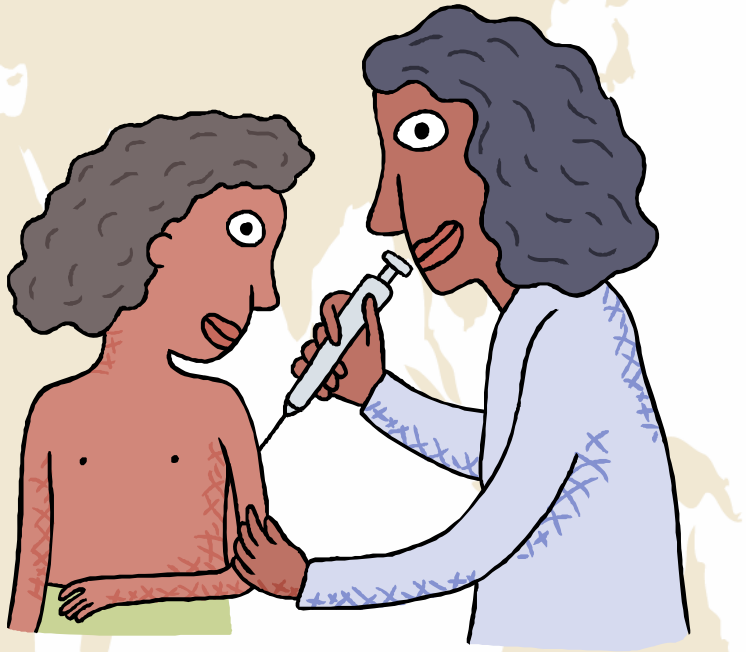
Health Professions Education



- Some responses to the demands are within the reach of health professions schools
  - Selecting different students
    - Admissions
  - Providing better clinical education
    - Formative assessment and feedback
    - Lifelong learning
  - Expanding institutional capacity
    - Use/creation of open educational resources (OER)
    - Faculty development

Admissions

- In some places, capacity and quality are limited because the healthcare workforce does not match the patient population
  - Geographically, ethnically, racially



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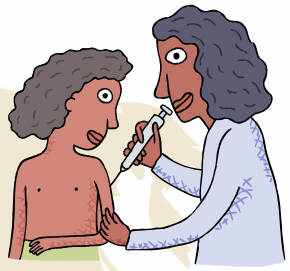
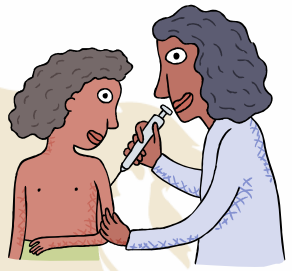
Admissions: Evidence



- Representative workforce improves access to care
  - Providers are more likely to serve individuals from their own backgrounds
    - Rural/remote, racial, ethnic
  - Minority providers are more likely to provide care to the poor and uninsured
  - Minority and rural/remote providers are more likely to specialize in primary care

Saha, S., Shipman, S. (2006). *The Rationale for Diversity in the Health Professions: A Review of the Evidence.*

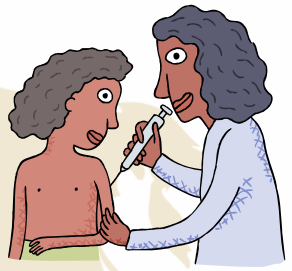
Admissions: Evidence



- Representative workforce provides greater opportunity for concordance
  - Ethnic and racial concordance improves
    - Use of health care services
    - Patients' views on the quality of care
  - Language concordance is associated with better
    - Retention in mental health services
    - Ratings of communication quality and comprehension

Saha, S., Shipman, S. (2006). *The Rationale for Diversity in the Health Professions: A Review of the Evidence.*

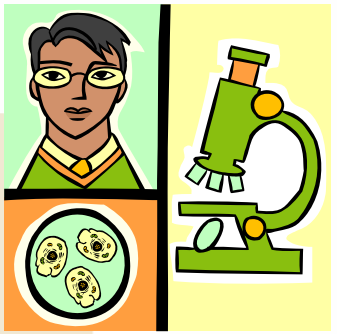
Admissions: Evidence



- Representative workforce leads to increased trust
  - Fear of hospice care among minorities due partly to lack of diversity among healthcare workers
  - Participation in clinical trials influenced by the race of the researchers
- Diverse faculty/students enhance cultural competence
  - Better educational experiences
  - Medical students believe diversity enhances the learning environment and students from minority groups exhibit less bias (Whitla et al., 2003)

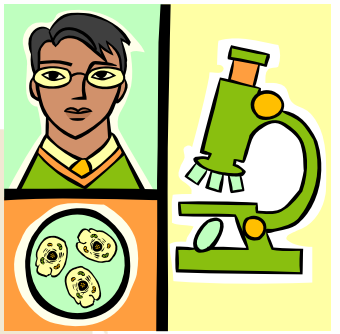
Saha, S., Shipman, S. (2006). *The Rationale for Diversity in the Health Professions: A Review of the Evidence.*

Admissions: Strategy



- Strategies for changing admissions
  - Address inadequacies in primary and secondary education
    - Not fixable in the short term
  - Change the admissions process
    - Broaden the criteria used in admissions
    - Use diversity as one important basis for making admissions decisions
    - Expand those involved in the admissions decision

Admissions: Strategy



- Create relationships between health professions schools and primary/secondary schools
  - Career fairs, involve secondary students in research, send healthcare students to schools...
- Provide help to potential students
  - Assistance completing the application process
  - Academic support program
  - Financial assistance where appropriate

Admissions: Summary

- Representative healthcare workforce leads to
  - Improved access to care
  - Opportunities for provider-patient concordance
  - Greater trust in providers
  - Better educational experiences for students
- Strategies for change
  - Change the admissions process
  - Create relationships with primary/secondary schools
  - Provide help to potential students

Formative Assessment and Feedback

- To ensure relevance to community needs, education must be embedded in the health care system
- Lack of observation-feedback during clinical training
  - Medical students
    - Structured observation done for 7-23% of students (Kassebaum & Eaglen, 1999)
    - 28% of IM clerkships include formative assessment strategy (Kogan & Hauer, 2006)
  - Postgraduate trainees
    - 82% were observed only once (Day et al., 1990)
    - 80% observed never or infrequently (Isaacson et al., 1995)

Formative Assessment: Evidence

- Assessment and feedback are critical to learning and have a significant influence on achievement
  - General education (Hattie, 1999)
    - Meta-analysis of 12 meta-analyses
    - Feedback is among the largest influences on achievement (ES=.79)
  - Medical education (Veloski et al., 2006)
    - Feedback alone effective is effective in 71% of studies

Formative Assessment: Strategy

- Foundation Programme
  - Two-year planned program of general training
    - Bridge between medical school and specialist/general training
  - Comprises
    - Series of placements in a variety of specialties and healthcare settings
    - Formal teaching sessions (emphasizes patient safety and accountability)
    - Supervised audit project (FY2)

Formative Assessment: Strategy

- Purpose
  - Determine fitness to progress to next stage of training
  - Identify trainees in difficulty
  - Provide focused feedback consistent with CQI
  - Meet needs for accountability
- Four methods
  - Mini-Clinical Evaluation Exercise (mCEX)
  - Directly observed procedures (DOPs)
  - Case-based Discussion (CbD)
  - Peer assessment

Formative Assessment: Strategy

- Mini-CEX
  - List of patient problems
  - Trainee picks a patient
  - Assessor observes a focused encounter
  - Assessor rates Hx, PE, Comm, CJ, Prof, Org/Eff and provides feedback
  - Takes 15-20 minutes
  - 6 assessments/year

Formative Assessment: Strategy

- DOPs
  - List of procedures
  - Trainee picks a patient
  - Assessor observes the encounter
  - Assessor rates Prep, Sedation, Asepsis, Technical skill, etc and provides feedback
  - Takes 15-20 minutes
  - 6 assessments/year

Formative Assessment: Strategy

- CbD
  - List of patient problems
  - Trainee picks 2 case records and assessor selects one
  - Discussion centered on the trainee's notes
  - Assessor rates Diag, Treat, Planning, Prof, etc.
  - Takes 15-20 minutes
  - 6 assessments/year

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Formative Assessment: Strategy

- Peer assessment
  - Trainee identifies
    - Peers (physicians and non-physicians)
    - Self-rates
  - Web-based and centralized
  - Two rounds per year
  - Educational supervisor gets self-ratings, peer ratings, and national means and shares with trainees

Formative Assessment: Summary

- Formative assessment and feedback
  - Lacking in clinical placements
  - Critical to learning and quality
- Foundation Programme offers a strategy for addressing this issue
  - mCEX
  - DOPs
  - CbD
  - Peer assessment

Lifelong Learning

- Lifelong learning can improve quality and capacity
  - Healthcare workers
    - Keep up with advances in knowledge and technology
    - Acquire new skills
  - Healthcare workforce
    - Flexibility to adapt to change and local conditions
    - Ability to cope with disaster
  - Patient populations
    - Achievement of millennium goals

Lifelong Learning: Evidence

- There is a need for lifelong learning
  - For doctors, performance declines with time since medical school
    - Systematic review of the literature by Choudhry, Fletcher, Soumerai (Ann Int Med, 2005)
      - MEDLINE search of all papers from 1966 to 2004 plus references in the identified papers
      - Found 62 studies that were related to the topic

Lifelong Learning: Evidence

- Knowledge studies (N=12)
  - All reported a decline in knowledge with age
- Adherence to standards for diagnosis, screening, prevention (N=24)
  - 15 show physicians in practice longer adhere less to standards
- Adherence to standards of appropriate therapy (N=19)
  - 14 found a partially or consistently negative association
- Patient outcomes (N=7)
  - 4 found a partially or consistently negative association

Lifelong Learning: Evidence

Conclusion of the authors

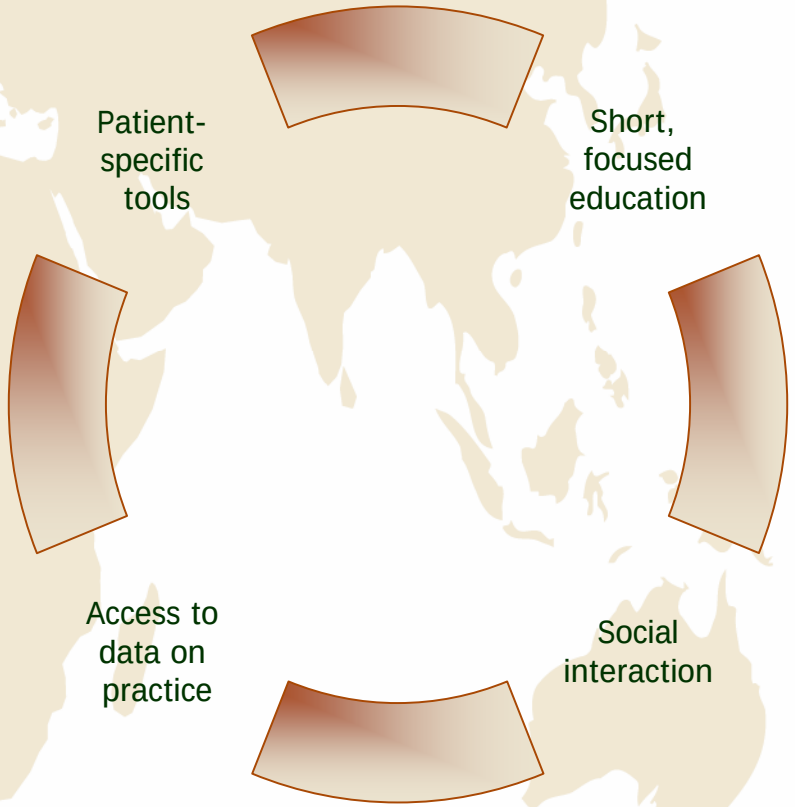
"Physicians who have been in practice longer may be at risk for providing lower-quality care. Therefore, this subgroup of physicians may need quality improvement interventions."

Lifelong Learning: Evidence

- Lifelong learning works
  - Meta-synthesis (Robertson et al., JCEHP) shows that continuing medical education is effective in creating change in a range of outcomes
    - Attitudes
    - Knowledge
    - Skills
    - Behavior
    - Patient outcomes

Lifelong Learning: Strategy

- Many characteristics of effective lifelong learning are captured in this model
  - It needs to be ongoing



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Lifelong Learning: Strategy

- Change is more likely if the provider knows the nature of his/her practice
  - Aggregated data by clinical problem
  - Statistics on patient problems, diagnostics, and therapeutics
  - Track patient outcomes

"It is only by getting your cases grouped...that you can make any real progress with your post-collegiate education"

W. Osler

Lifelong Learning: Strategy

- Learning best occurs in the context of patient care
  - Patient-specific education
    - Evidence-based, short focused answers to clinical questions
  - Point-of-care tools
    - Reminder systems to avoid errors of omission

"Be careful about reading health books. You may die of a misprint."

Mark Twain

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Lifelong Learning: Strategy

- Education should be short and focused on relevant aspects of practice
  - Interactive sessions offering the opportunity for practice are effective
  - Didactic sessions are ineffective

"Some people talk in their sleep. Lecturers talk while other people sleep."

Albert Camus

Lifelong Learning: Strategy

- Provider leadership
  - Create non-threatening environment
  - Encourage information exchange
  - Align incentives
  - Partner with family and community
- Peer interactions
  - Non-threatening discussion of practice data

"Leadership is the art of getting someone else to do something you want done because he wants to do it."

Dwight Eisenhower

Lifelong Learning: Summary

- Lifelong learning improves quality and capacity
  - Important for providers and patient populations
- There is good evidence that provider performance declines over time
- Lifelong learning is effective in fighting the decline
  - Ongoing, based on practice data, patient specific, short/focused, led by providers

Open Educational Resources (OER)

- Lack of high quality educational material limits capacity and quality
- OER movement provides free access to high-quality educational content
  - For users of the resources
    - Increases knowledge through educational products that
      - Are not readily available locally
      - Can be tailored to local needs
      - Can be used to improve local resources
      - Can be used across health professions

Open Educational Resources

- For creators of the resources
  - Faculty
    - Builds awareness of unique contributions
    - Fosters connections with international colleagues
    - Creates a record of teaching innovation
  - Institutions
    - Builds global awareness of the institution
    - Improves recruitment
    - Provides a resource for students, faculty and alumni

Open Educational Resources

- OER movement has many components
  - Some institutions are creating peer review processes for educational resources
    - MedEdPortal
  - Some educational institutions are putting their courses on the internet and allowing free access
    - Open Courseware Consortium
      - 200 institutions in 21 countries (www.ocwconsortium.org)
      - University of Michigan is one of the institutions

OER: MedEdPortal

- MedEdPortal is a peer reviewed publication of teaching resources (www.aamc.org/mededportal)
  - Free online publication service
  - Contains peer-reviewed teaching resources
  - Cover the continuum of medical/dental education
  - Primary audience and source of submission
    - Educators in health education
    - Administrators in health education
    - Students in health education
  - AAMC and the ADEA

OER: MedEdPortal

- Animations
- Assessment instruments
- Cases
- Computer applications
- Exercises
- Faculty development materials
- Lab manuals
- Lecture presentations
- Podcasts
- Problem-based Learning (PBL) materials
- Simulation scenarios
- Standardized patient cases
- Surveys
- Virtual patients
- Videos
- Other media types

OER: MedEdPortal

- Editor and Editorial Board are appointed
- Peer review policy
- Use invited expert reviewers

- Glassick criteria are applied
  - Clear goals
  - Adequate preparation
  - Appropriate methods
  - Significant results
  - Effective presentation
  - Reflective critique

MedEdPortal: Publication Process

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OER: MedEdPortal

- Faculty guide
  - How to document their publication in a CV and promotion dossier
  - How to self-assess before submitting to MedEdPortal
- Guide to promotion and tenure committees
  - Help to understand educational scholarship and peer review

OER: University of Michigan

- Joined the OER community in 2007
  - Goal is to contribute to improving global health
  - Actions
    - Medical School commits to publishing all of its pre-clinical materials
    - Medical School and the School of Information collaborate on innovative publishing process
    - All health science deans pledge their support
    - Work toward building a global community

University of Michigan: Process

- Start with existing materials
  - All lecture materials (slides, streaming video) currently available online
  - Some online learning materials have replaced older teaching strategies (anatomy, histology)
- Work towards
  - Entire health science curriculum
  - Research agenda to measure outcomes
  - Unique features
    - Lower development costs by using students (dScribe)
    - Adopt, adapt, and co-creating materials with community

University of Michigan: Community

- Work with African health science colleagues to
  - Publish and use current educational materials
  - Adapt materials for local contexts
  - Co-create new materials (#1 priority)
- Goal is sustainable, reciprocal relationships around education content creation
- First step
  - Health OER workshop in Ghana with universities from multiple countries
  - Consensus was to move forward with community building
  - Supported by HP, FAIMER, and other organizations

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OER: Summary

- There is a lack of high quality course material for health professions education
- Open courseware movement can address this issue in part
  - It has global, institutional, and faculty benefits
    - MedEdPortal
    - University of Michigan

Faculty Development

- Quality and capacity is limited by a lack of health professions faculty
- Faculty development programs are intended to prepare faculty for their various roles
  - Help address faculty shortages
  - Respond to issues related to faculty diversity
  - Empower faculty members to excel as educators
  - Create a community that values teaching and learning

Faculty Development: Evidence

- BEME Review of the research (Steinert et al, 2006)
  - Faculty development participants
    - Were satisfied
      - Found programs acceptable, useful, and relevant
    - Reported positive changes in attitudes toward teaching
    - Reported increased knowledge of educational principles and gains in teaching skills
  - Tests showed significant knowledge gains
  - Changes in teaching behavior were reported by participants and detected by students
  - Changes included greater educational involvement and establishment of networks

Faculty Development: FAIMER

- Faculty development
  - Principles
  - Model
- Programs
  - FAIMER Institute
  - International Fellowship in Medical Education (IFME)
  - Regional Institutes
  - Education Centers

"Education is for improving the lives of others and for leaving your community and world better than you found it."

Marian W. Edelman

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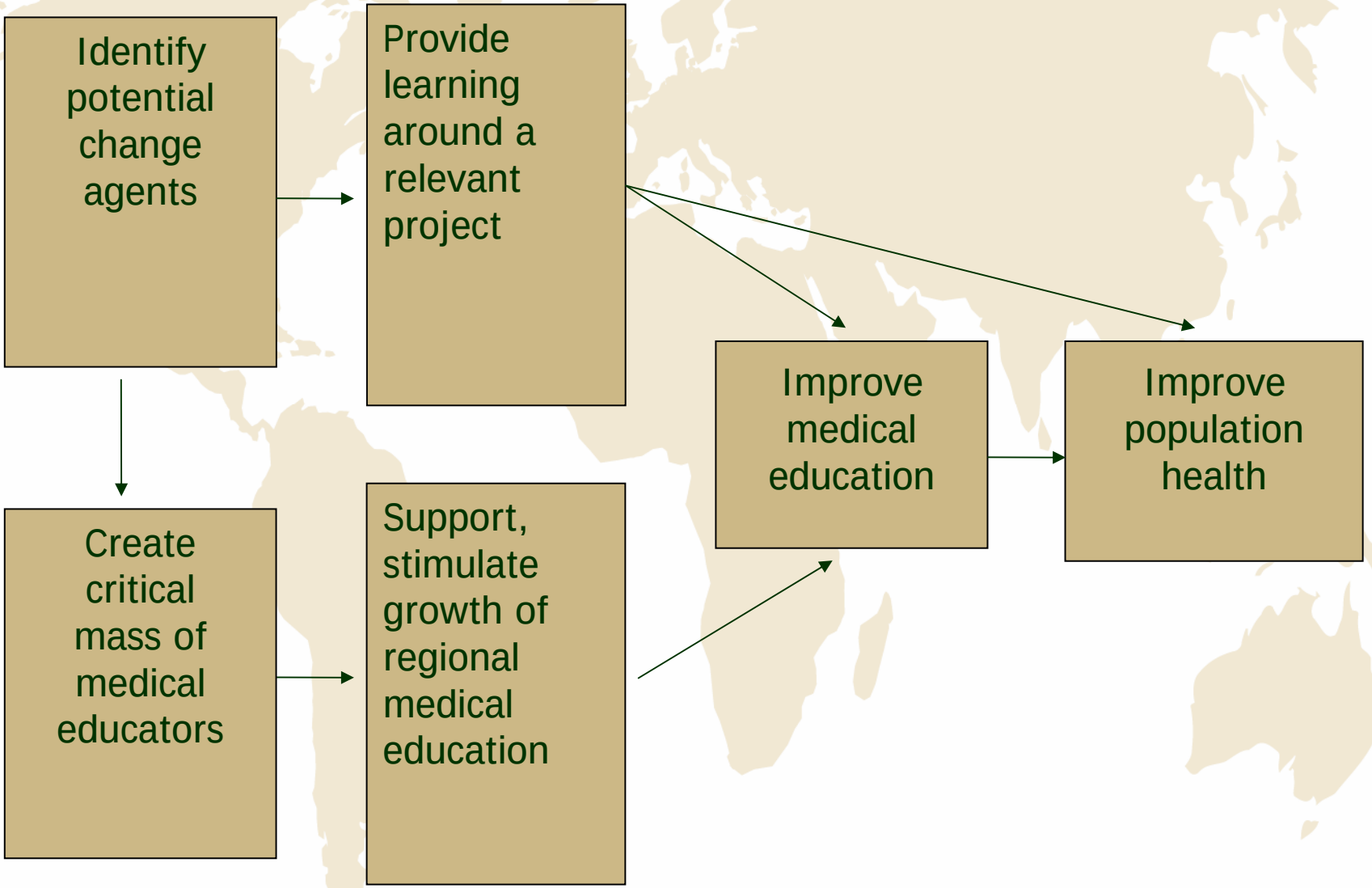
Faculty Development: FAIMER

- Principles
  - Identify individuals with potential to become agents for change
  - Deliver an effective learning intervention relevant for the environment
  - Facilitate the opportunity for application of acquired knowledge and skills
  - Promote development of a sustainable career path with opportunities for growth

Nchinda TC. Research capacity building in the South. Soc Sci Med, 2002:54 1699-1711.

Faculty Development: FAIMER Model



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Faculty Development: FAIMER Institute

- Started in 2001
- Target is mid-level faculty
- There are 60-100 applications (online) for 16 fellowships
- Requires a project that has institutional support

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Faculty Development: FAIMER Institute

- Format of Year One
  - 3 weeks in the US
    - Basic topics and meet mentors
  - 11 month distance learning
    - On-line discussion and progress reports
- Format of Year Two
  - 2 weeks in the US
    - Advanced topics and meet new fellows
  - 11 month distance learning
    - Focus on publishing work, collaborative research

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Faculty Development: FAIMER Institute

- Curriculum based on needs assessment
  - Educational practice
    - Large/small group teaching, PBL
    - Assessment
  - Educational leadership
    - Change theory
    - Project management
  - Scholarship
    - Publication, presentation

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Faculty Development: FAIMER Institute

- Ongoing evaluation
  - Educational practice
    - Individual changes in knowledge, skills, and attitudes
    - Institutional and regional changes in curriculum, assessment, etc.
  - Educational leadership
  - Scholarship

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Faculty Development: FAIMER IFME Program

- Started in 1983
- Current program
  - Institute Fellows only
  - Support for an M.Ed.
    - Provides additional skills
    - Degree enhances local credibility
    - Accountability and efficiency
    - Relationships with M.Ed. programs

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Faculty Development: FAIMER Regional Institutes

- Regional versions of the Institute
  - Advantages
    - Locally relevance, networking, efficiency
    - Draws more local participation
  - Run by FAIMER Fellows
  - Funded by FAIMER plus others

Faculty Development: FAIMER Regional Institutes

- India
  - Mumbai (2005)
  - Ludhiana (2006)
  - Coimbatore (2007)
- Brazil
  - Brazil (2007)
- Africa
  - Southern Africa (2008)
  - East and West Africa (in development)

Faculty Development: FAIMER Education Centers

- Single school versions of the Institute
  - Advantages
    - Locally relevance and efficient
    - Supports and enhances local education
  - Run by FAIMER Fellows
- Participants
  - University of Zimbabwe
  - Weill Bugando University College of Health Sciences

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Faculty Development: Fellow Projects (Ahuka Ona Longombe)

- Project to attract future physicians to rural areas in the Democratic Republic of the Congo
  - 36 students sent to rural hospital 750km from medical school
  - Good educational experience
    - Exposed to common childhood diseases (e.g. malaria)
  - Changed student attitudes
  - Increased faculty interest in using rural settings

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Faculty Development: Fellow Projects (Eliana Amaral)

- Project to provide students early exposure to primary health units in Brazil
  - 114 4th year students rotated through 5 units each supervised by a faculty and local tutor
    - 12hrs/wk, every other week, 9 months
    - Integrated seminars and assessment
  - Provided care through 5000 appointments
  - Good educational experience
    - Covered 10 common conditions, supported by the seminars, and confirmed through assessment

Faculty Development: Summary

- Quality and capacity is limited by a lack of health professions faculty
- Faculty development programs address this issue in part
- There is good evidence of their effectiveness
  - FAIMER Education Programs

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Summary

- Quality and capacity are the two biggest educational demands
  - They can be addressed by
    - Selecting different students
      - Admissions
    - Providing better educational experiences
      - Formative assessment and feedback
      - Promoting lifelong learning
    - Expanding institutional capacity
      - Using/creating open educational resources (OER)
      - Expanding teaching capacity through faculty development