

Medical Education and the Quality of Healthcare: Global Challenges

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Major Demands in Healthcare

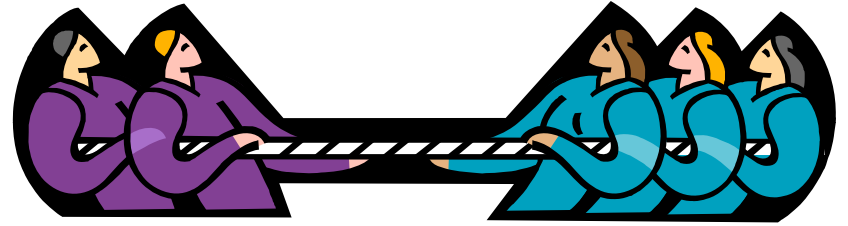
■ Capacity

- 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

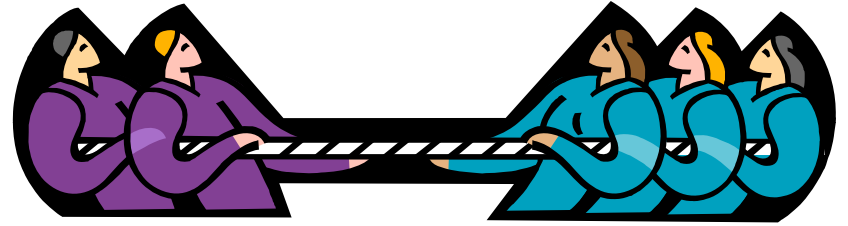
- Quality is often compromised
 - Relationship between mortality/morbidity and healthcare quality
 - 40 of 100 admissions in the US result in some harm to patients
 - Race/income disparities
 - Absence of evidence-based standards
 - Lack of continuity in care

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
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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



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

Admissions: Evidence



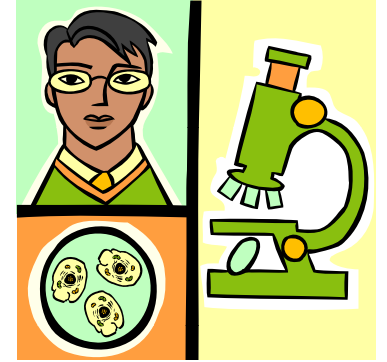
- Representative workforce provides greater opportunity for concordance
 - Ethnic and racial concordance improves
 - Use of health care services
 - Patients' views on the quality of care
 - Language concordance is associated with better
 - Retention in mental health services
 - Ratings of communication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

Admissions: Evidence



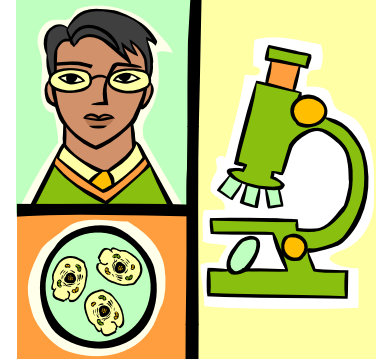
- Representative workforce leads to increased trust
 - Fear of hospice care among minorities due partly to lack of diversity among healthcare workers
 - Participation in clinical trials influenced by the race of the researchers
- Diverse faculty/students enhance cultural competence
 - Better educational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

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
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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)
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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
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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)
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Formative Assessment: Strategy

■ Purpose

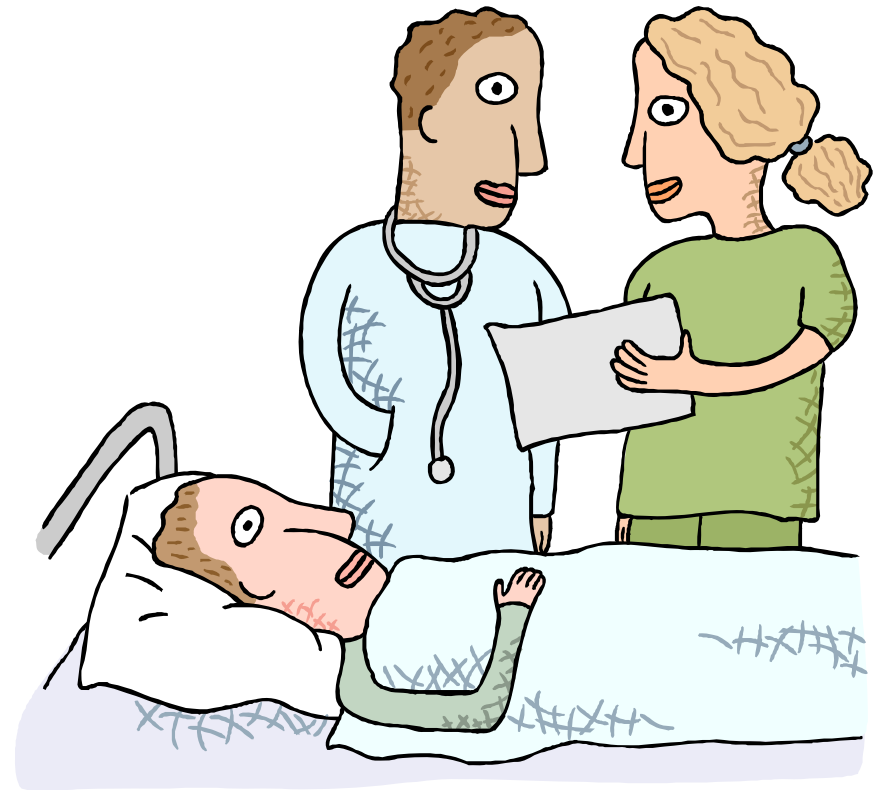
- ❑ Determine fitness to progress to next stage of training
- ❑ Identify trainees in difficulty
- ❑ Provide focused feedback consistent with CQI
- ❑ Meet needs for accountability

■ Four methods

- ❑ Mini-Clinical Evaluation Exercise (mCEX)
 - ❑ Directly observed procedures (DOPs)
 - ❑ Case-based Discussion (CbD)
 - ❑ Mini-Peer Assessment (Mini-PAT)
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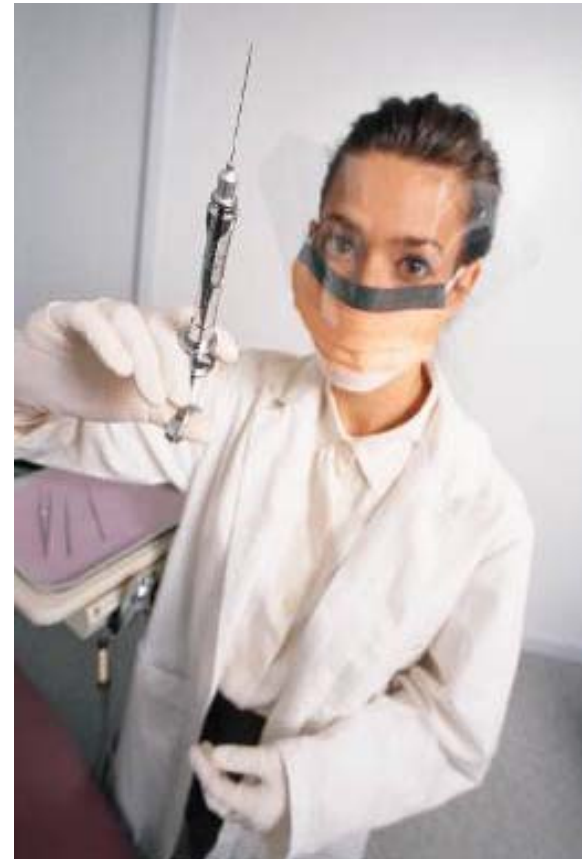
Formative Assessment: Strategy

- mCEX
 - 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



Formative Assessment: Strategy

- Mini-PAT
 - 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
 - Mini-PAT
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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
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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
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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
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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.”

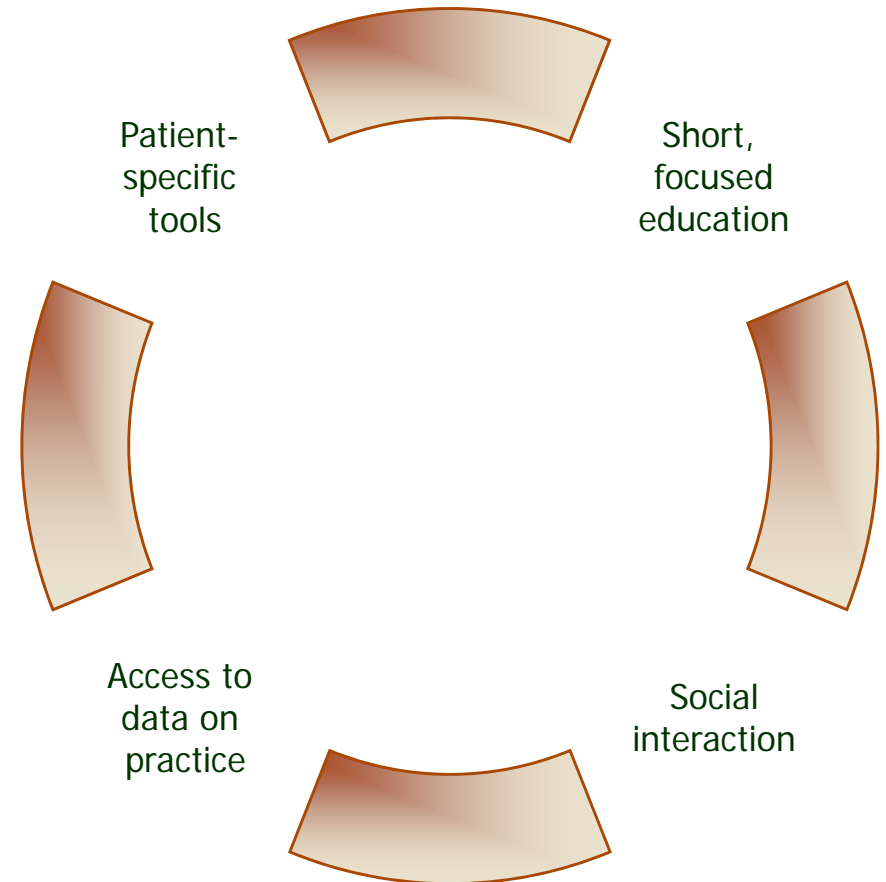
Lifelong Learning: Evidence



- 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
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Lifelong Learning: Strategy

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



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

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
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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
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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
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OER: MedEdPortal

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

MedEdPortal: Contents

- 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

MedEdPortal: Peer Review

- 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



MedEdPortal: Statistics

- Submissions
 - 41% accepted
 - 33% accepted with revisions
 - 26% rejected
- 1-2 new submissions per day
- 1,600+ submissions since 2004
- 670+ expert peer reviewers
- 600+ resources

MedEdPortal: Guidance

- 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 & 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: dScribe

- Students in the course are trained and work with faculty to publish materials online
 - Student-centric and efficient given the scale
 - Students
 - Master course content
 - Establish connection with faculty
 - Likely get either course credit or pay
 - Faculty
 - Conduct quality assurance of materials
 - Have their expertise universally available

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

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
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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
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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
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Faculty Development: FAIMER

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

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

Marian W. Edelman

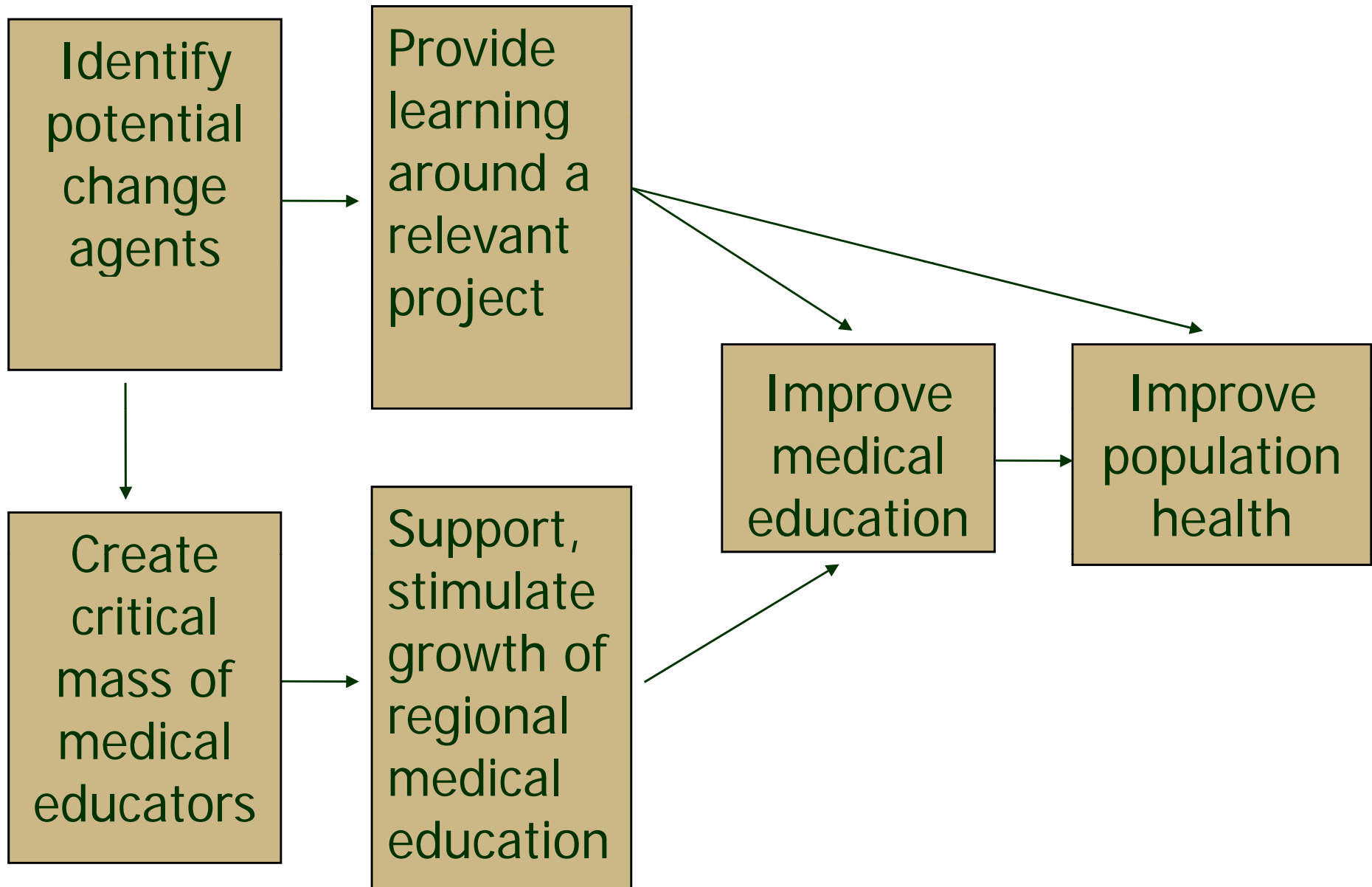
Faculty Development: FAIMER

■ 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



Faculty Development: FAIMER Focus

- Principles and model are best served by a geographic focus
 - Increases the ability to have a measurable impact given our resources
 - Increases the effectiveness of our programs in supporting regional medical education
 - Allows meaningful oversight
 - South Asia, Africa, and Latin America are given preference
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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

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

Faculty Development: FAIMER Institute



- Ongoing external evaluation (2001-03)
 - Educational practice
 - Changes in knowledge, skills, and attitudes
 - Educational leadership
 - 33% promoted
 - Scholarship
 - 14 posters
 - 9 publications
 - 16 grants/awards

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)
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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
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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



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
-