Medical Education in Kenya: are we ready for the 21st century?

Sylvia Ojoo
Clinical Assistant Professor of Medicine
University of Maryland, School of Medicine
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Kenya Association of Physicians
Outline

• Kenyan context for medical education
• Evidence – from the market place
• Proposal for the way forward
Medical education in context

• Current health challenges in Kenya
• Population served (population demands and needs)
• Inexorable progress in the field of health
• The ever evolving student
• Institutions (training, faculty, regulation, standards, accreditation)

Is medical education in Kenya responsive to the context?
Population demands: the new dispensation….

• Health care is riskier than other industries
• “In the US, preventable medical errors in hospitals exceed attributable deaths to such feared threats as motor-vehicle wrecks, breast cancer, and AIDS”. (To err is human: building a safer health system. IOM 1999)
Key health challenges in Kenya: indicators

Life expectancy was 54.7 years in 1999; currently stands at 57 years

Under 5 mortality dropped
Neonatal mortality stable
Maternal mortality gone up
Health challenges: Communicable Diseases

- HIV at 6.7% still a problem
- Kenya rated 22nd in the world with regard to TB prevalence (319/100,000; TB/HIV co-infection of 53% rate)
- Malaria is the leading cause of morbidity (30%) followed by respiratory diseases (24.5%)

*Malaria Indicator Survey 2010; HMIS report 2008*
Health challenges: Lifestyle and diseases (NCD)

13% of children 13-15 yrs are active smokers

Secondary school students abuse a wide range of substances

19% of Kenyans overweight; 5% obese
Non-communicable Diseases

• Tip of the iceberg.....

<table>
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<th>Country</th>
<th>Diabetes</th>
<th>Hypertension</th>
<th>Central Obesity</th>
<th>Hypercholesterolemia</th>
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<td>Women</td>
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</table>

Prevalence (%) of the different components of the metabolic syndrome in African populations
Health challenges: medical advances

• Better understanding of and management strategies for old diseases
• New diseases
• Technological advances
• Most health systems struggling to keep up with these advances
Pharmacogenomics and pharmacokinetics

- Genetic polymorphisms in drug-metabolizing enzymes, transporters, receptors, and other drug targets have been linked to inter-individual differences in the efficacy and toxicity of many medications.
  - The CYP2C19 genotyping test is a useful tool for deciding on the optimal treatment regimen using a PPI, including a dual (PPI plus antibiotic) or a triple (PPI plus two antibiotics) therapy.
  - HLA B*5701 testing prior to use of abacavir for HIV treatment.
Students: not what they used to be….

• Students are changing.
  – Their level of curiosity has declined over the past two decades
  – (Med) student demographics
  – Expectations
    • I wanna be a millionaire so…. bad
  – Tech savvy
Health care worker

Professional regulation

Decreasing performance associated with years of practice
- older doctors and those who have been in practice for many years
  - less factual knowledge
  - less likely to adhere to appropriate standards of care,
  - may also have poorer patient outcomes.

Is medical education meeting needs of the population?

• MOH has expressed concerns regarding HCW capacity-building for HIV service delivery, captured in the KNASP III:
  
  – Pre-service institutions
    • Graduates not delivering services as “expected”
  
  – In-service training
    • No comprehensive training plan; training needs not previously defined
    • Most trainings are didactic, provided outside the practice environment
    • The cost of training to date has been significant and needs review in the context of the new funding realities
Healthcare worker HIV training in Kenya: Results of a pre-service and in-service training needs assessment

Dr. Sylvia Ojoo
Clinical Assistant Professor of Medicine

Ojoo S\textsuperscript{1,2}, Penner J\textsuperscript{1,3}, Mwachari C\textsuperscript{1}, Maratim M\textsuperscript{4}, Lule G\textsuperscript{4}, Mukui I\textsuperscript{5}, Marani L\textsuperscript{1}, Redfield R\textsuperscript{1,2}

1. Maryland Global Initiatives Corporation, Kenya
2. University of Maryland Baltimore, USA
3. University of British Columbia, Canada
4. University of Nairobi, Kenya
5. National AIDS/STI Control Program, Kenya
6. Centers for Disease Control and Prevention, Kenya
Objectives of the TNA

• Define current pre- and in-service training resources, structures, and systems

• Identify existing and emerging capacity gaps in HIV-related training and among practicing HCWs
Methods: Sample population

- MOH/NASCOP
- Regulatory bodies
- All 6 public universities and KMTC
  - Institution deans & faculty
  - Final year students
- Interns
- Level 2-6 health facilities in Nyanza, Central, Coast
  - Management (including PHMT and DHMT)
  - HCWs providing HIV services
- Implementing partners and funding agencies
Methods: Data collection

• Conducted between May 2010 and Mar 2011
• Key informant interviews
  – Deans, faculty, regulatory bodies, HMTs
• Focus group discussions
  – Students, interns, HCWs
• Knowledge assessments (multiple choice questions)
  – Students, interns, HCWs
• Structured questionnaires
  – Funding agencies, implementing partners
• Lab assessment
  – Universities, MTCs, health facilities
Results: HCW training continuum

Pre-Service → Internship → In-Service

Regulatory Bodies
Results: Pre-service

- Content list covers HIV (syllabus), but lacks detail of what and how to teach
- Curriculum development process not standardized
- No formal assessment of market need to determine curriculum
- Emerging issues incorporated by individuals- review cycle too long for currency
- Faculty determine their own professional development
- Limited multi-disciplinary teaching
- Inadequate teaching and learning resources
- Students – inadequate contact time with faculty and limited practical training
- Limited use of out-patient setting for training
Results: Internship

- Interns “are not adequately prepared for entry into the work place” (supervisors)
- Interns “are not oriented a priori, adequately mentored, supervised or assessed before registration” (interns)
- Log books inadequate for HIV care mentorship and for soft skills
Results: In-service

- Inconsistencies across curricula on key issues
- Many not current
- Repetition between courses
- Curriculum not effectively weighted
- Mostly didactic, lecture-based using PowerPoint slides
- No point of care teaching/learning resources
- Evaluation is largely recall knowledge based
- All hospitals assessed have an internal CPD program
- Most had resource library, but training and learning resources outdated or not functional
No difference between the pre- and in-service scores except for lab
Results: Regulatory bodies

• Some boards manage:
  – Pre- and in-service curricula review and revision process
  – Unified examinations for the multiple schools/colleges
  – Licensing/exit exam

• Inadequate capacity for institutional accreditation, curricula management, supervision for training, internships

• Inadequate support for intern supervisors and internship programs

• Inadequate systems to support, administer and manage CPDs and re-licensing

• Concerns re: multiplicity of training institutions (MTCs operate a college system; medicine does not)
Conclusions

• Pre-service curricula not responsive to market needs
• Pre-service teaching and learning resources inadequate, including faculty time
• Internship not supervised or evaluated in a way that ensures adequate competencies developed
• Effectiveness of in-service training may be limited by teaching materials and methods, despite high cost
• Potential for site-based training is under-utilized
• Regulatory Bodies’ mandate to monitor and enforce quality standards at all levels has not been realized
Concern for medical education not only local

February 5, 2012
Harvard Conference Seeks to Jolt University Teaching
By Dan Berrett
Cambridge, Mass.
A growing body of evidence from the classroom, coupled with emerging research in cognitive psychology and neuroscience, is lending insight into how people learn, but teaching on most college campuses has not changed much, several speakers said here at Harvard University at a daylong conference dedicated to teaching and learning.
Too often, faculty members teach according to habits and hunches, said Carl E. Wieman, a Nobel Prize-winning physicist and associate director of the White House Office of Science and Technology Policy, who has extensively studied how to improve science education.
Health professionals for a new century: transforming education to strengthen health systems in an interdependent world

Julio Frenk*, Lincoln Chen*, Zulfiqar A Bhutta, Jordan Cohen, Nigel Crisp, Timothy Evans, Harvey Fineberg, Patricia Garcia, Yang Ke, Patrick Kelley, Barry Kistnasamy, Afaf Meleis, David Naylor, Ariel Pablos-Mendez, Srinath Reddy, Susan Scrimshaw, Jaime Sepulveda, David Serwadda, Huda Zurayk
From the commission report:

- Glaring gaps and inequities in health persist both within and between countries
- Health systems worldwide struggling to keep up
- Professional education has not kept pace with these challenges, because of fragmented, outdated, and static curricula producing ill-equipped graduates.
- The problems are systemic: mismatch of competencies to patient and population needs;
- Tribalism of the professions; poor teamwork
Instructional reforms over time...

- Three generations of educational reforms characterize progress during the past century.
  - First taught a science-based curriculum.
  - 2^{nd} introduced problem-based instructional innovations.
  - 3^{rd} is now needed; should be systems based to improve the performance of health systems by adapting core professional competencies to specific contexts, while drawing on global knowledge.
Instructional Reforms

• Should adopt competency-driven approaches to instructional design;
• Adapt these competencies to rapidly changing local conditions drawing on global resources;
• Promote inter-professional and trans-professional education towards developing effective teams;
• Exploit the power of information technology for learning;
• Strengthen educational resources – faculty development
• Promote a new professionalism that uses competencies as objective criteria for classification of health professionals
Transformative learning...

• As a valued outcome, transformative learning involves three fundamental shifts:
  – from fact memorization to searching, analysis, and synthesis of information for decision making;
  – From seeking professional credentials to achieving core competencies for effective teamwork in health systems;
  – And from non-critical adoption of educational models