Strengthening Public Health Education in Modern Medical Curriculum

Addressing the Issues and Adapting an Innovative Solution

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M3, UT College of Medicine

TPHA Annual Conference
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About the Researcher & Study Impetus
Third year medical student at UTCOM

Anticipate a preventive medicine residency with US Navy
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- Third year medical student at UTCOM
- Anticipate a preventive medicine residency with US Navy
  - Benefit from being a “dualie” – will be a medicine/public health graduate in May 2013

This is a “dualie” truck.
About the Researcher & Study Impetus

- Third year medical student at UTCOM
- Anticipate a preventive medicine residency with US Navy
- Benefit from being a “dualie”
  - will be a medicine/public health graduate in May ‘13
- Deferred UT and first earned my MSPH from the London School of Hygiene and Tropical Medicine
Background to Study

- The role of public health is significantly de-emphasized by the American medical education system.
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  >95 percent of curriculum is devoted to the patient vs. populations.

  <0.5 percent of medical school faculty are trained in public health or preventive medicine.

  Reference [1]

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- The role of public health is significantly de-emphasized by the American medical education system.

- The American public health workforce is aging.
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- **The American public health workforce is aging.**

  By 2012, almost 30 percent of the public health workforce will be eligible to retire.

  Health departments serving <25,000 people report the largest percentages of retirement-eligible staff.

References [2 & 3]

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- **The number of public health physicians and preventive medicine residency positions is declining.**
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- The American public health workforce is aging.
- The number of public health physicians and preventive medicine residency positions is declining.

- PH physicians: 2.3% (1970) to 0.8% (2000s)
- PM residency programs: 90 (1999) to 75 (2009)
- PM residency positions: 20% decrease

References [1 & 4]

Background to Study

- The role of public health is significantly de-emphasized by the American medical education system.
- The American public health workforce is aging.
- The number of public health physicians and preventive medicine residency positions is declining.
- Because of these three points, our public health system is impacted macroscopically.
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- The American public health workforce is aging.
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- 11 states – NO appointed physician leaders
- 29 states – NO physician state health directors or commissioners

Reference [5]

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- The American public health workforce is aging.
- The number of public health physicians and preventive medicine residency positions is declining.

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Lack of physician leadership in public health dept’s correlates with less effective public health responses.

Reference [5]
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IOM: 10,000-person shortage in public health physicians

Reference [6]

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- To strengthen America’s weakening public health infrastructure, policy changes should compel the medical education system to fully integrate public health curriculum for all medical students, thereby graduating joint MD (or DO)/MPH clinicians.
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- Mean %’s of students noting “inadequate instruction” were compared between these public health and medical areas of instruction

- Inter-quartile data ranges were used to assign a grade to the instruction of each of the 40 analyzed areas.
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Future policy recommendations based on study results.

Results: Medicine Areas of Instruction
### Results: Medicine Areas of Instruction (1 of 2)

<table>
<thead>
<tr>
<th>Area of Instruction</th>
<th>Mean %</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical ethics</td>
<td>12.96</td>
<td>B</td>
</tr>
<tr>
<td>Care of ambulatory patients</td>
<td>11.48</td>
<td>B</td>
</tr>
<tr>
<td>Care of hospitalized patients</td>
<td>2.59</td>
<td>A</td>
</tr>
<tr>
<td>Clinical reasoning</td>
<td>7.80</td>
<td>A</td>
</tr>
<tr>
<td>Continuity of care</td>
<td>19.85</td>
<td>B</td>
</tr>
<tr>
<td>Diagnosis of disease</td>
<td>5.22</td>
<td>A</td>
</tr>
<tr>
<td>Drug and alcohol abuse</td>
<td>9.55</td>
<td>A</td>
</tr>
<tr>
<td>Ethical decision making</td>
<td>9.96</td>
<td>B</td>
</tr>
<tr>
<td>Evidence-based medicine in general</td>
<td>13.09</td>
<td>B</td>
</tr>
<tr>
<td>Health maintenance</td>
<td>10.08</td>
<td>B</td>
</tr>
<tr>
<td>Interpretation of laboratory results</td>
<td>12.48</td>
<td>B</td>
</tr>
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<tbody>
<tr>
<td>Management of disease</td>
<td>8.46</td>
<td>A</td>
</tr>
<tr>
<td>Patient confidentiality and privacy; HIPAA</td>
<td>7.43</td>
<td>A</td>
</tr>
<tr>
<td>Patient interviewing skills</td>
<td>2.32</td>
<td>A</td>
</tr>
<tr>
<td>Physical examination skills</td>
<td>11.45</td>
<td>B</td>
</tr>
<tr>
<td>Physician-patient relationships &amp; communication skills</td>
<td>4.59</td>
<td>A</td>
</tr>
<tr>
<td>Physician-physician communication skills</td>
<td>16.79</td>
<td>B</td>
</tr>
<tr>
<td>Problem solving</td>
<td>6.60</td>
<td>A</td>
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<td>Professionalism</td>
<td>4.65</td>
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**Average Mean %:** 9.33

**Average Grade:** A

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### Results: Public Health Areas of Instruction

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<tr>
<td>Biological, chemical, &amp; natural disaster management</td>
<td>46.96</td>
<td>F</td>
</tr>
<tr>
<td>Biostatistics</td>
<td>27.51</td>
<td>C</td>
</tr>
<tr>
<td>Community medicine</td>
<td>23.31</td>
<td>C</td>
</tr>
<tr>
<td>Complementary &amp; alternative medicine</td>
<td>44.66</td>
<td>F</td>
</tr>
<tr>
<td>Culturally appropriate care for diverse populations</td>
<td>22.20</td>
<td>C</td>
</tr>
<tr>
<td>Disease prevention</td>
<td>15.58</td>
<td>B</td>
</tr>
<tr>
<td>Environmental health</td>
<td>40.88</td>
<td>C</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>22.20</td>
<td>C</td>
</tr>
<tr>
<td>Global health issues</td>
<td>42.90</td>
<td>F</td>
</tr>
<tr>
<td>Health care quality improvement/assurance</td>
<td>41.18</td>
<td>F</td>
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<tr>
<td>Health care systems</td>
<td>42.10</td>
<td>F</td>
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<td>Health services financing</td>
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<td>Occupational medicine</td>
<td>47.37</td>
<td>F</td>
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<td>Public health</td>
<td>28.73</td>
<td>C</td>
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<td>Role of community health and social service agencies</td>
<td>35.22</td>
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**Average Mean %: 37.14**  
**Average Grade: C**
Statistical Significance

% of students expressing “inadequate instruction”

(i) 99% CI: 25.31 – 48.96
(ii) 99% CI: 3.22 – 15.45

Results Summary
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• Previous research revealed infrastructural weaknesses:
  Decreasing physician leadership in public health
  Declining preventive medicine residencies
  Less effective public health responses

• This current research quantified glaring educational deficiencies between medicine and public health training for medical students.
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So what?

What to do?
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So what? What to do?

What can we do?
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- This current research quantified glaring educational deficiencies between medicine and public health training for medical students.

- Significant attention should be placed at our current educational policy.
- Therein, I propose that our medical education system should adjust and strive to graduate 100% of future medical students as joint MD (or DO)/MPH students.
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AND I think I know a way we can do it...
Recommendations

- Four recommendations to guide our target of graduating 100% MD (or DO)/MPH students.
Recommendations

Four recommendations to guide our target of graduating 100% MD (or DO)/MPH students.

Recommendation #1

Assemble key stakeholders to develop and mount an “educational innovation competition” to create a national MPH curriculum.

Schools of medicine and public health would “compete” in submitting their lesson plans, course blueprints, and exam questions for proposed courses.
Recommendations

- Four recommendations to guide our target of graduating 100% MD (or DO)/MPH students.

Recommendation #2

The MPH curriculum would be designed with a variety of focus areas (or academic concentrations in which students can specialize).

Each focus area built of modular core & elective courses.

Additional focus areas added/changed to keep up with student interests and evolving health care landscape.
Recommendations

Four recommendations to guide our target of graduating 100% MD (or DO)/MPH students.

Six proposed MPH academic focus areas:

- Health services research
- Health services management
- Public policy & governance
- Health promotion
- General public health
- Environmental health

Modular Design for MPH Academic Focus Areas:

- **Health services research**
  - Design & analysis of studies
  - Healthcare evaluation
  - Statistical modeling

- **Health services management**
  - Politics & health lobby
  - Economic evaluation
  - Organization & management

- **Public policy & governance**
  - Determinants of health
  - Politics & health lobby
  - Ethics & human rights

- **Health promotion**
  - Health promotion practice
  - Literature review
  - Determinants of health

- **General public health**
  - Determinants of health
  - Literature review
  - History of public health

- **Environmental health**
  - Globalization & health
  - Epidemiology & disease control
  - Organization & management

2011 TPHA Annual Conference
**Recommendations**

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**Recommendation #3**

Online course modules would integrate videos, computer presentations, and case studies.

Review quizzes & formal assessments would be completed via secure, online portals.

Design is lower cost and supports a COGME recommendation to use internet and distance learning.

Reference [7]
Recommendations

- Four recommendations to guide our target of graduating 100% MD (or DO)/MPH students.

Recommendation #4

Medical students would begin a 3-semester long MPH year as the first year within a new nationwide, universal five-year joint medicine-public health program.

First-semester modules = core course for MPH.

Second and third semester modules = elective courses based on academic focus area selected.

Proposed National MPH Curriculum Timeline

<table>
<thead>
<tr>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester 2 Modules (depend on academic focus)</td>
<td></td>
<td>Semester 3 Modules (depend on academic focus)</td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>June</td>
<td>July</td>
<td>August</td>
</tr>
<tr>
<td>Thesis/Research Project (subject related to academic focus)</td>
<td></td>
<td>MPH start / end</td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>October</td>
<td>November</td>
<td>December</td>
</tr>
<tr>
<td>Semester 1 Modules (core classes for any academic focus)</td>
<td></td>
<td></td>
<td></td>
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</table>
Conclusion

- Unique plan – to create a **low-cost, high-value public health curriculum** for all graduating medical students
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- Good timing – PPACA & the new multi-billion dollar “National Prevention and Health Promotion Strategy”
  
  → highlighting prevention and wellness
  
  → renewed focus on preventive services can then be used as the impecus to begin a dialogue to correct the infrastructural weaknesses & medical education deficiencies identified in this research

Thanks to...

TPHA and Dr. Zerwekh

Drs. Erwin & Myers from
UT Center for Health Policy & Services Research

Dr. Neutens from
UT Graduate School of Medicine
References


Questions & Discussion