Value-Added Medical Education: How Can Medical Students Meaningfully Contribute to Patient Care?

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Virginia Tech Carilion School of Medicine
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Upon completion of this session, participants will be able to:

1. Define value-added medical education,
2. Identify challenges for medical students within clinical learning environments to contribute to patient care,
3. Highlight several examples of pre-clerkship and clerkship roles that can potentially add value to the health system, and,
4. Identify the intersections between Health Systems Science education and value-added roles and tasks.
Are medical students an asset or a “liability” in the context of care delivery?
Are medical students an asset or “liability”?

“Value-Added Medical Education:” Experiential roles for students in practice environments that can positively impact patient and population health outcomes, costs of care, or other processes within the health system, while also enhancing student competencies in Clinical or Health Systems Science.

Shea et al. Compensation to a dept. of medicine for the teaching of medical students. NEJM 96
Jones et al. On the cost of educating a medical student. Acad Med 97
Gonzalo et al. Medical Students as Systems Ethnographers: Exploring Patient Experiences and Systems Vulnerabilities in the ED. AEM 2017
Gonzalo et al. A Constructive Reframing of Student Roles Using a “Communities of Practice” Lens. Acad Med 2017
### Cost-Benefit Scorecard

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health system</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient(s)</td>
<td>• Improved outcomes; patient experience</td>
<td>• Discomfort/dissatisfaction with program</td>
</tr>
<tr>
<td></td>
<td>• Lower utilization of resources or costs of care</td>
<td>• Stress or discomfort with process</td>
</tr>
<tr>
<td>Clinical educators</td>
<td>• Improved work efficiency and work experience</td>
<td>• Reduced clinical productivity</td>
</tr>
<tr>
<td></td>
<td>• Gratification in fulfilling social responsibility</td>
<td>• Concerns regarding quality of mentoring</td>
</tr>
<tr>
<td>Clinical or community Site</td>
<td>• Enhanced quality improvement programs</td>
<td>• Resources and time required for student presence and work</td>
</tr>
<tr>
<td></td>
<td>• Enhanced partnerships with community</td>
<td></td>
</tr>
<tr>
<td>Hospital system</td>
<td>• Improved relationships with community</td>
<td>• Time and resources to fund programs</td>
</tr>
<tr>
<td></td>
<td>• Improved efficiency through student presence</td>
<td></td>
</tr>
<tr>
<td><strong>Educational system</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learners</td>
<td>• Improved knowledge, skills, and attitudes in HSS</td>
<td>• Competing demands of courses/exams</td>
</tr>
<tr>
<td></td>
<td>• Improved attitudes of professional role identity</td>
<td>• Apprehension with performing patient-centered tasks</td>
</tr>
<tr>
<td></td>
<td>• Greater sense of civic responsibility for profession</td>
<td></td>
</tr>
<tr>
<td>Medical educators</td>
<td>• Improved knowledge and skills in HSS, thereby increasing education for other learners</td>
<td>• Investment in learning new concepts</td>
</tr>
<tr>
<td>Medical school</td>
<td>• Enhanced knowledge and skills in new initiative</td>
<td>• Competing demands of curricular initiatives</td>
</tr>
<tr>
<td></td>
<td>• Creation of meaningful clinical work for students</td>
<td>• Additional faculty/staff time</td>
</tr>
<tr>
<td></td>
<td>• Enhanced credibility in fulfilling social contract</td>
<td></td>
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</tbody>
</table>
## Value-Added Roles and Tasks

<table>
<thead>
<tr>
<th>Direct patient care</th>
<th>Care Extenders</th>
<th>Research and systems projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>History-taking</td>
<td>Clinical process extenders</td>
<td>“Systems” Projects</td>
</tr>
<tr>
<td>Evidence-based medicine</td>
<td>Patient navigator</td>
<td></td>
</tr>
<tr>
<td>Patient education</td>
<td>Safety analysts</td>
<td></td>
</tr>
<tr>
<td>Patient advocates</td>
<td>QI team extenders</td>
<td></td>
</tr>
<tr>
<td>Value chief</td>
<td>Population health managers</td>
<td></td>
</tr>
</tbody>
</table>

“New vs old”

*Shea et al. Compensation to a dept. of medicine for the teaching of medical students. NEJM 96*
*Jones et al. On the cost of educating a medical student. Acad Med 97*
*Lin, et al. Value-Added Medical Education: Engaging Future Doctors to Transform HealthCare Today, JGIM 2014*
*Gonzalo et al. Medical Students as Systems Ethnographers: Exploring Patient Experiences and Systems Vulnerabilities in the ED. AEM 2017*
*Gonzalo et al. A Constructive Reframing of Student Roles Using a “Communities of Practice” Lens. Acad Med 2017*
Current Education Model: The Mini Physician Model

Gonzalo et al. A Constructive Reframing of Student Roles Using a “Communities of Practice” Lens. Acad Med 2017
Hunderfund, Gonzalo et al. Value-Added Activities in Medical Education: Factors Influencing Their Potential Engagement. Acad Med 2018
Student Patient Navigator Network

**Inpatient Setting**
- Rehab Hospital Transitions Program
- Veteran’s Affairs
- Internal Medicine D/C Program
- Psychiatric Hospital Program
- Skilled Nursing Transitions Program

**Outpatient Setting**
- Breast Cancer Program
- Heart Failure Clinic
- Behavioral Health Clinic
- Senior Living Center
- Internal Medicine Clinic
- Family Practice Outreach Program
- High-Risk Outreach Clinic
- Patient-Centered Medical Home
- Lebanon Free Clinic
- Surgical Weight Loss Program
- Pain Management
- Pediatric Clinic

**24 Clinical Sites**
- 4+ health systems
- ~142 medical students

PSCOM Student Patient Navigator Program:
1. Started in 2014, now in Year 6
2. # of patients impacted by students: ~2500
# The Evolving Social History in Medicine

## Traditional Social History Components:

1. Racial or ethnic background
2. Marital status and children
3. Occupation
4. Highest level of education
5. Tobacco, ethanol, drugs
6. Seatbelt and helmet use
7. Firearms in the home
8. Victim of domestic violence

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7. Firearms in the home
8. Victim of domestic violence
9. Poverty
10. Cultural barrier
11. Poor neighborhood composition
12. Poor quality housing
13. Educational limitations
14. Unstable work schedule
15. Language barriers
16. Lack of access to healthcare
17. Unstable housing or homelessness
18. Legal troubles
19. Unemployed/underemployed
20. Lack of or no Insurance
21. Food insecurity/unhealthy diet
22. Family care demands
23. Near poverty/financial struggles
24. Visit no show/unable to reach patient
25. Social isolation
26. Health literacy limitations
27. Frequent healthcare utilization
28. Lifestyle quality
29. Elderly or disability
30. Transportation issues
31. Health system coordination/mistrust
32. Behavioral and mental health

Associated with patient outcomes

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[Image: PennState College of Medicine]
Patient Needs Identified By Students

- Poverty
- Poor Neighborhood Composition
- Cultural Barrier
- Language Barriers
- Educational Limitations
- Unstable work schedule
- Lack of Access to Healthcare
- Poor Quality Housing
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% of total
Educational Benefits
The “Third” Pillar

Health Systems Science

Basic Science

Clinical Science

Health Humanities

**Health Systems Science definition:**
the principles, methods, and practice of improving quality, outcomes, and costs of healthcare delivery for patients and populations within systems of medical care.
What are students learning?

1. Patient’s perspective on health care and his/her health
2. Patient’s social determinants that are impacting his/her health
3. Communicating with patients
4. Interprofessional collaboration and teamwork
5. Healthcare delivery and the system
6. Systems thinking
7. Clinical medicine
1st-year medical student working as a patient navigator in the Physical Medicine and Rehab Hospital was assigned to perform a home safety assessment for a patient pending discharge. He failed to attend the scheduled appointment with the patient, which was uncovered after the social worker talked to the patient the following week. When confronted with this information, the student communicated that it was not clear to him about the expectation for the experience.

“The Mini Stress Test”
Report of the Task Force on Health Systems Science and the VTCSOM Curriculum
Presented to Dean Lee Learman, January 31, 2020

IV. Recommendations for Year Two

The task force recommends consideration of the follow changes to the second year curriculum:

e. A new patient navigation experience (or similar) for M2 students should be created, in collaboration with our health system partner Carilion Clinic and working closely with the Carilion Office of Community Health Outreach as well as with additional, to be identified community health agencies. To create this experience, a total of five dedicated time slots have been identified as part of a revised curriculum schedule for the M2 year. To be of maximum impact, the navigation experiences must be designed to allow students to follow a patient/family longitudinally, and thus ideally would continue into subsequent years of the curriculum whenever feasible. It is also recommended that the M3 clerkship directors be included in the planning of the navigation experience, along with leadership of the current M1/M2 LACE program.
What do you see as the potential opportunity for designing and implementing a patient navigator program at VTCSOM?
Key Challenges and Principles
Current Education Model: The Mini Physician Model

Key Issues:
1. Student engagement, skills, assessments
2. Balance of service vs learning
3. Resources, logistics, supervision
4. Productivity and billing pressures
5. Current health system design and culture
6. Faculty issues

Gonzalo et al. A Constructive Reframing of Student Roles Using a “Communities of Practice” Lens. Acad Med 2017
Hunderfund, Gonzalo et al. Value-Added Activities in Medical Education: Factors Influencing Their Potential Engagement. Acad Med 2018
Figure 1: Percentage of first- and second-year U.S. medical students indicating moderate or very high desire to participate in value-added activities, from a survey of attitudes toward value-added education at nine U.S. medical schools, 2017.
### “Continuity”

<table>
<thead>
<tr>
<th>Continuity</th>
<th>Goals</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care</td>
<td>Learning through patient connection, caring, advocacy</td>
<td>Involvement with patient at the start and during course of illness</td>
</tr>
<tr>
<td>Curriculum</td>
<td>Learning in an integrated fashion to promote competence</td>
<td>Acquisition of competencies in developmental fashion; application of science to problem solving</td>
</tr>
<tr>
<td>Supervision</td>
<td>Learning from close and serial connection with most able educators</td>
<td>Community of learners, educators, caregivers; coaching and mentorship</td>
</tr>
</tbody>
</table>
**Key Driver Diagram for Implementing Value-Added Roles**

**Outcomes**

**Proximal Outcome:**
Successfully integrated value-added clinical systems learning roles for medical students that promote education and potential for student work to add value to patient care.

**Distal Outcome:**
Achievement of the Triple Aim – improved health for patient populations, patient experience, with reduced healthcare costs.

**Key Drivers (Priority Areas)**

- Student Engagement and Initiative
- Educational Value for Students
- Value Added to Patient Care
- Continuity of Care for Student Work
- Mentor Time and Clinic Capacity
- Working Relationships Between School, Site, and Students

Hirsh, Ogur, Thibault, Cox. “Continuity” as an Organizing Principle for Clinical Education Reform. NEJM 2007
Gonzalo et al. A practical guide for implementing and maintaining value-added clinical systems learning roles. Advances 2017
What are some of the anticipated challenges here at VTCSOM in developing and implementing a patient navigator program?
Take Aways: Top 5 Features for VAME Roles

1. Integrate students into interprofessional care teams.

2. Ensure students are aware of site functionality and role within team.

3. Provide students the opportunity to be active, “value-added” participants in the clinical site (i.e. not observers).

4. Provide students the opportunity to have a high degree of continuity within the clinical site and with patients.

5. Develop a proactive continuous quality improvement process between curriculum, students, and mentors.
Objectives

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Thank you!
VAME Roles – The Change Process

**Phase 1 – Vision and Planning**

1. **Problem Identification**
2. **Needs Assessment**
3. **Goals and Objectives**
4. **Educational Strategies**
5. **Implementation**
6. **Evaluation and Feedback**

**Kotter #1**
- Establish sense of urgency

**Kotter #2**
- Create guiding coalition

**Kotter #3**
- Develop a shared vision

**Kern’s Six Steps for Curriculum Development**

**Phase 2 – Sustaining and Growing**

- **Kotter #4**
  - Communicate vision

- **Kotter #5**
  - Empower broad-based action

- **Kotter #6**
  - Generate short-term wins

- **Kotter #7**
  - Consolidate gains

- **Kotter #8**
  - Anchor approaches in culture