Incorporating Curriculum within Learning Communities

Lars Osterberg, MD
Michael Pilla, MD
James Wagner, MD
Outline

• LCs a good fit for incorporating curriculum
• Models of incorporating curriculum in LCs
  – Vanderbilt
  – Stanford
  – University of Texas Southwestern
• Outcomes
• Developing your curriculum
  – Breakout
  – Return to large group for sharing
Why Incorporate Curriculum in LCs?

• Longitudinal small groups and a structure
• Faculty
  – chosen for humanism
  – interest/quality in teaching
• Social learning theory
  – “most human behavior is learned observationally through modeling”
  – Better understanding of students strengths/weaknesses
• Safe learning environment
• Individualized instruction based on needs
• Longitudinal evaluation; benchmarks/milestones
Vanderbilt University School of Medicine
Michael Pilla, MD

- Foundations of Medical Knowledge (1)
- Foundations of Clinical Care (2)
- Immersions (3 & 4)
- Vanderbilt Core Clinical Curriculum
- Foundations of Health Care Delivery
- Learning Communities
Figure 2  Colleges restructured as learning communities, Vanderbilt University School of Medicine (VUSM), 2011. AAMC CiM indicates Association of American Medical Colleges Careers in Medicine; VCIM, Vanderbilt Careers in Medicine.
LC-FMK (Foundational Sciences)

- **Timeline**: 1st year, 13 months – Fridays, 2 hours
  - 1st week of med school – “Foundations of the Profession” & White Coat Ceremony – oath taking
- **Focus**: student development as professionals
- **Topics**: metacognition, ethics, leadership, service, healthcare policy
- Integrated weekly readings, posted questions, context talk, College sessions
- Tested, reflections
- **1st year retreat**: “Thriving v. Surviving”
LC-FMK

- **LC-FMK sessions**
  - Ethics
    - Medical ethics
    - Virtue ethics & conscious
    - Informed consent
    - Genetics, newborn screenings
    - Ethics at the end of life
    - Ethics in the public health role of the physician
    - Religion, spirituality, and worldview in healthcare
  
  - Leadership
    - Self-awareness
    - Time management
    - Conflict management
    - Coping and resilience

- **LC-FMK sessions**
  - Health policy
    - Overview of the US healthcare system
    - Insurance design, provider payment, and cost growth
    - The Affordable Care Act
  
  - Colloquium
    - Narrative medicine
    - How we reflect
    - How we perceive/misperceive
    - How we think
    - How we learn
    - Being wrong and making mistakes
    - Empathy
    - Memory, cognition, and identity
    - How we understand illness and dying
LC-FCC (Clerkship Year)

- **Timeline:** 2\textsuperscript{nd} year, five 8-week clerkship blocks, monthly meetings / reflections (1-LC, 1-ethics by course)
- **Focus:** continued development in clinical context
- Development of image, skill set
- Application of ethical principles to real patients / cases seen in hospital & clinics
- Discussion of moral distress
- Reflections, small group discussions
- **2\textsuperscript{nd} year retreat:** “Can-do v. Motivational Abilities”
LC-FCC

- 3 Types of sessions
  - Mentor-led topical sessions
    - Curiosity and Asking Questions
    - Clinical reasoning & cognitive strategies
    - How we pay attention
    - Self-assessment & adaptive expertise in medicine
  - Ethics Discussions (by course, ethics faculty-led)
  - Mentor-led reflection sessions
LC-IMM (individualized senior courses)

- **Timeline:** 3rd & 4th years, students required to take 8 LC modules (i-month each) over the 2 years

- **Focus:** continued professional development
- Continued theme of ethics within context of clinical medicine
- Foundational leadership development, communication

- **3rd year retreat:** “Resilience”
LC-IMM

• 8 units
  – Applied Ethics
  – Lifelong Learning
  – Situational Leadership
  – Problem Solving
  – Priority Setting
  – Change Management
  – Dealing with Ambiguity
  – Leading and Managing Up
The Educators 4 CARE
Learning Communities at Stanford University School of Medicine

Lars Osterberg, MD, MPH
Educators 4 CARE (E4C) Program:
Compassion, Advocacy, Responsibility, Empathy
Stanford University School of Medicine

17 faculty/student communities named after trees

The real Stanford Tree
Educators-4-CARE Faculty
Primarily Devoted to Clinical Skills Teaching

• Seventeen Faculty total with each providing support, teaching, & mentoring for 5-6 students in each class
• Teach clinical skills in Doctoring Course two ½ days per week
• Evaluate clinical skills- end of quarter clinical skills exams
• Facilitate small group discussions with clinical students in Doctoring with CARE- every other month for 90 minutes
  – Discussion of students’ “critical incident” experiences on the wards
  – Near peer mentoring
• Assist in remediation of students as needed
• Participate in student milestone events
• Students have separate advisors who write dean’s letter
Continuity and Coherence
Learning Communities at Stanford

from student perspective

with curriculum
with faculty mentor
with student colleagues

with curriculum
with students
with faculty colleagues

from faculty perspective
Since its inception in Fall 2008, the E4C program has been working to develop a set of benchmarks for our MD curriculum in the following skill areas:

- Physical Exam
- Clinical Reasoning
- Oral Presentations
- Patient Write-ups
- Communication
- Professionalism
- Ethics
- Personal Wellness

Our objective in creating these benchmarks is to provide students and faculty with clear, consistent, developmental guidelines for the acquisition of essential clinical and professional skills pursuant to the MD degree at Stanford. Over the coming months and years, E4C will continue to work closely with the Practice of Medicine course, with
## Cardiovascular

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Do</strong></td>
<td><strong>Know</strong></td>
<td><strong>Do</strong></td>
</tr>
<tr>
<td>1. Inspect and Palpate from patient’s right side</td>
<td>• The right atrium sits 5cm below the sternal angle, no matter what position the patient is in. The normal JVP is up to 10 cm H₂O.</td>
<td>• The abdominojugular reflux is performed by pressing for 30-60 seconds to the right of the midline below the liver and observing the JVP. A sustained rise in the JVP &gt;3cm from baseline is considered positive.</td>
</tr>
<tr>
<td>• With patient at 30-45 degrees identify highest pulsations of internal jugular vein (or external jugular vein column).</td>
<td>• The PMI is only palpable in ~25% of adults, is &lt;2cm in diameter (&lt;4cm in left lateral decubitus), palpated at or medial to the mid-clavicular line in the 4th-5th interspace.</td>
<td></td>
</tr>
<tr>
<td>• Palpate the carotid pulses on each side, then auscultate each</td>
<td>• A lift (also heave) is an abnormal sustained, systolic outward movement of the precordium associated with heart failure. A right ventricular lift is felt best at the left stern border and left ventricular lift felt best at the cardiac apex</td>
<td></td>
</tr>
<tr>
<td>(while patient holding breath)</td>
<td>• A thrill is a palpable vibration felt when a cardiac murmur is grade IV-VI.</td>
<td></td>
</tr>
<tr>
<td>• Examine the patient in the supine and in the partial left lateral decubitus position (45° to the left side).</td>
<td>• The bell is best for hearing low frequency sounds of S3 and S4 and mitral stenosis.</td>
<td></td>
</tr>
<tr>
<td>• Inspect and then palpate the precordium for the point of maximal impulse (PMI), and lifts.</td>
<td>• The order of timing of the heart valves is mitral and tricuspid (creating S1) followed by aortic and pulmonary (creating S2)</td>
<td></td>
</tr>
<tr>
<td>2. Auscultate</td>
<td>• The S2 normally splits with inspiration and is heard in the pulmonic region appreciated in about 50% of adults.</td>
<td>• S3 occurs during diastole with passive filling of blood into an overfilled non-compliant left ventricle. In patients over 40 it indicates systolic dysfunction or valvular heart disease and in younger patients it may be normal.</td>
</tr>
<tr>
<td>• Listen at four basic locations (and associated valves) using the</td>
<td>• How to grade murmurs:</td>
<td>• S4 occurs during late diastole with atrial contraction into a stiff ventricle (due to hypertrophy or fibrosis).</td>
</tr>
<tr>
<td>diaphragm: apex (mitral), LLSB (tricuspid), L 2nd ICS (pulmonic), R</td>
<td>I – don’t hear immediately, need a quiet room</td>
<td>• The abdominojugular reflux is seen in heart failure and correlates well with an elevated pulmonary capillary wedge pressure.</td>
</tr>
<tr>
<td>2nd ICS (aortic) and again at apex with bell.</td>
<td>II-heard fairly easily</td>
<td></td>
</tr>
<tr>
<td>At each location listen first to S1 and S2, observing amplitude and</td>
<td>III-loud</td>
<td></td>
</tr>
<tr>
<td>splitting then for several cardiac cycles do the same for systole</td>
<td>IV-associated with a thrill</td>
<td></td>
</tr>
<tr>
<td>then diastole. If you hear a murmur or extra sound, “inch” your stethoscope to hear where it is heard best.</td>
<td>V-able to hear with the stethoscope on edge</td>
<td></td>
</tr>
<tr>
<td>• Auscultate the femoral arteries with the bell</td>
<td>VI-able to hear with stethoscope off chest</td>
<td></td>
</tr>
<tr>
<td>• Listen at L sternal border &amp; apex leaning forward</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Palpate peripheral pulses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Palpate brachial, radial, femoral, popliteal, dorsalis pedis, and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>posterior tibial pulses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Check for edema by pressing on skin at ankles</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Know</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The JVP is 5cm added to the vertical distance of the sternal angle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>to the internal (or external) jugular venous pulsations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Colleges at UT Southwestern
Learning to be a Physician: Beginning a life of healing

“In what may be called the natural method of teaching, the student begins with the patient, continues with the patient, and ends his studies with the patient, using books and lectures as tools, as means to an end.” -Sir William Osler

Cary Estabrook  Fashena  Pritchard  Seldin Sprague
Curriculum Outline

FOUNDATION FOR EXCELLENCE CURRICULUM

PRE-CLERKSHIP

YEAR 1

Academic Colleges (Weekly)

BSF

FBS

Integrated Medicine: Health to Disease

CLERKSHIP

YEAR 2

Academic Colleges (Monthly)

FCR

TC

USMLE Prep

Growth and Exploration

Clinical Core Blocks (48 Weeks Total)

Scholarly Activity Blocks (12 Weeks Total)

YEAR 3

POST-CLERKSHIP

YEAR 4

BTB

BTB

BTB

BTB

PS

TCT

Graduation

Abbreviations: BSF = Body Structure Foundations  FBS = Fundamentals of Biomedical Sciences  FCR = Foundations of Clinical Reasoning  TC = Transitions to Clerkship  BTB = Back to Basics  PS = Physicians and Society  TCT = Transitions in Clinical Training
Academic Colleges
Primarily Devoted to Clinical Skills Teaching

• Sixty faculty total
  – 6-7 mentors in each College
  – 5-6 students in each class

• Frequent meetings with students
  – Pre-Clerkship Period: Weekly for 90 minutes
  – Clerkship and Post-Clerkship Periods: Monthly for 60 minutes

• Teach clinical skills (Pre-Clerkship period)
  – Seven Skills Clinics
  – Six Physical Examination sessions
  – Hospital visits

• Evaluate clinical skills
  – Seven Skills Clinics (with recordings in B-Line)
  – Two end of period clinical skills exams (10 station OSCEs)

• Facilitate small group discussions
  – Ethics and wellness sessions
  – Discussion of students’ “reflective essay” experiences on the wards

• Peer (MS4) mentors used
• Students have separate advisors who write dean’s letter
Stanford Outcomes

• E4C description (Clinical skills, wellness, every other month reflection in clinical years)

• E4C Outcomes:
  – E4C students scored higher on all domains of CPX
  – No decline in empathy from first to second clinical year (as is usually seen)
  – Faculty: increased job satisfaction, sense of belonging at institution
  • Osterberg et al. *From High School to Medical School: The Importance of Community in Education*. Med Sci Educ 2014
UT Southwestern Outcomes

- Evaluation of program
  - By students
  - By mentors/masters
  - By mentor specialty
- Evaluations of mentors
  - By student
  - By master
- Evaluations of students
  - By mentor
  - By clinical skills examination
Evaluations of Mentors by Students

Fashena College by Semester
(Student Evaluation of Mentor)

- Average 4.69
- Stdev 0.43
- Median 4.85
- Mode 5.00

- Mentor 1
- Mentor 2
- Mentor 3
- Mentor 4
- Mentor 5
- Mentor 6
- Mentor 7
- Mentor 8
- Mentor 9
- Mentor 10

Combined Score

Spring 15 Average
Fall 15 Average Semesters
Spring 16 Average
# Evaluation of Students by OSCE

## Cumulative Colleges OSCE/COSCE Report (2009 - 2016)

<table>
<thead>
<tr>
<th>College</th>
<th>Count of Students</th>
<th>Average of MS2OSCE-CIS</th>
<th>Average of MS2OSCE-ICE</th>
<th>Average of MS2OSCE-SEP</th>
<th>Average of COSCE-CIS</th>
<th>Average of COSCE-ICE</th>
<th>Average of COSCE-SEP</th>
<th>Overall Average</th>
<th>Count of Step2 CS Failures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cary</td>
<td>341</td>
<td>86.42%</td>
<td>76.49%</td>
<td>98.01%</td>
<td>82.93%</td>
<td>67.24%</td>
<td>99.23%</td>
<td>92.82%</td>
<td>11</td>
</tr>
<tr>
<td>Estabrook</td>
<td>164</td>
<td>87.30%</td>
<td>76.73%</td>
<td>98.72%</td>
<td>81.83%</td>
<td>66.55%</td>
<td>99.16%</td>
<td>93.23%</td>
<td>0</td>
</tr>
<tr>
<td>Fashena</td>
<td>329</td>
<td>86.02%</td>
<td>74.65%</td>
<td>98.67%</td>
<td>81.96%</td>
<td>63.95%</td>
<td>98.98%</td>
<td>92.50%</td>
<td>11</td>
</tr>
<tr>
<td>Pritohard</td>
<td>333</td>
<td>86.45%</td>
<td>77.53%</td>
<td>97.74%</td>
<td>81.95%</td>
<td>66.64%</td>
<td>99.27%</td>
<td>92.86%</td>
<td>3</td>
</tr>
<tr>
<td>Seldin</td>
<td>357</td>
<td>86.79%</td>
<td>76.51%</td>
<td>97.86%</td>
<td>82.77%</td>
<td>65.95%</td>
<td>99.30%</td>
<td>93.05%</td>
<td>6</td>
</tr>
<tr>
<td>Sprague</td>
<td>334</td>
<td>86.45%</td>
<td>75.63%</td>
<td>98.44%</td>
<td>83.53%</td>
<td>67.28%</td>
<td>98.97%</td>
<td>92.71%</td>
<td>3</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>1858</strong></td>
<td><strong>86.51%</strong></td>
<td><strong>76.22%</strong></td>
<td><strong>98.19%</strong></td>
<td><strong>82.56%</strong></td>
<td><strong>66.46%</strong></td>
<td><strong>99.16%</strong></td>
<td><strong>92.83%</strong></td>
<td><strong>34</strong></td>
</tr>
</tbody>
</table>

### Scoring Legend
- Lowest column performance
- Highest column performance

### Report Legend
- MS2 OSCE: Standardized patient examination at the end of MS2 yr.
- COSCE: Standardized patient examination at the end of Clerkship semesters
- CIS: Communication & Interpersonal Skills
- ICE: Integrated Clinical Encounter (note writing skills)
- SEP: Spoken English Proficiency
Questions for breakout groups

• Describe the experience of incorporating curriculum delivery and reflect on how this instruction integrates within the context of a LC

• What is a typical "core curriculum" for new LC faculty to teach within your LC
  – How best to deliver this?
  – Who should deliver this?
  – How to deliver ongoing faculty development?

• What are benefits of incorporating curriculum in context of LCs?

• What are possible drawbacks? How might these be mitigated?