MEC Evaluation of 1\textsuperscript{st} Year Curriculum

DMS I, II, and III Curriculum Representatives
Purpose

• Although Dartmouth is known for providing an exceptional education, the 1st year curriculum has not undergone revision for many years

• We want to bring a number of first year problems/concerns to the attention of the MEC
Current Curriculum

• Three 12-week terms

• Fall: HAE, CTO, Biochemistry, and Cardiac/Respiratory Physiology

• Winter: HAE, Metabolism, Immunology/Virology, Renal/Endocrine Physiology

• Spring: Neuroscience, Pathology, Bacteriology, Biostatistics

• Each course offered by the individual department

• No Director of Year I
  – Dr. Nattie serves as First Year Coordinator
DMS I: A Transition Year

• Students come from many different backgrounds (cultural, educational, geographic, age, life experience)

• Isolation and lack of local support system

• Introduction to Dartmouth’s community and to the culture of medicine

• 1\textsuperscript{st} year curriculum is the framework of the 1\textsuperscript{st} year experience
Organization

• 1st year policies are unclear- no handbook
  – Policies of reviewing exams
  – Class-wide communication
  – Office and devoted staff
  – Lack of class surveys and class meetings
  – Academic remediation
    • In the Fall semester of Year I, 40.5% of students failed a quiz
    • Of those students, only 13% were contacted by a course director every time and offered additional help
    • Moreover, 62% of all students said that if they were to fail a quiz, they would prefer to be contacted by the course director and offered additional help
Organization

• Notes
  – Different formats, length, depth, and quality
  – Some lectures have no notes
  – Lack of revision from year to year

• Lectures
  – Depth of detail varies widely
  – Often difficult to tell important points
  – Little clinical relevance
  – Lack of lecture revision from year to year
  – Attitudes of lecturers variable
  – Amount of lecture time vs. small group (passive vs. active learning)
### Importance of Improvement

31. Rate the following first-year course issues based on how important improvement in each area is to you:

<table>
<thead>
<tr>
<th>Issue</th>
<th>no improvement needed</th>
<th>low importance</th>
<th>neutral</th>
<th>high importance</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of PowerPoint presentations</td>
<td>5.4% (4)</td>
<td>10.8% (8)</td>
<td>9.5% (7)</td>
<td>31.1% (23)</td>
<td>29.7% (22)</td>
<td>4.43</td>
</tr>
<tr>
<td>Quality of notes</td>
<td>4.1% (3)</td>
<td>6.8% (5)</td>
<td>6.8% (5)</td>
<td>31.1% (23)</td>
<td>41.9% (31)</td>
<td>4.82</td>
</tr>
<tr>
<td>Timeliness of note availability</td>
<td>20.3% (15)</td>
<td>12.2% (9)</td>
<td>5.4% (4)</td>
<td>21.6% (16)</td>
<td>21.6% (16)</td>
<td>3.74</td>
</tr>
<tr>
<td>Creation of a book of course notes for each course</td>
<td>9.5% (7)</td>
<td>12.2% (9)</td>
<td>2.7% (2)</td>
<td>18.9% (14)</td>
<td>36.5% (27)</td>
<td>4.36</td>
</tr>
<tr>
<td>Quality of course websites</td>
<td>10.8% (6)</td>
<td>9.5% (7)</td>
<td>8.1% (6)</td>
<td>23.0% (17)</td>
<td>16.2% (12)</td>
<td>3.96</td>
</tr>
<tr>
<td>Availability of practice quizzes</td>
<td>2.7% (2)</td>
<td>8.1% (6)</td>
<td>4.1% (3)</td>
<td>25.7% (19)</td>
<td>51.4% (38)</td>
<td>5.00</td>
</tr>
<tr>
<td>Accessibility of electronic versions of lectures</td>
<td>20.8% (15)</td>
<td>11.1% (8)</td>
<td>5.6% (4)</td>
<td>18.1% (13)</td>
<td>25.0% (18)</td>
<td>3.78</td>
</tr>
<tr>
<td>Quality of lectures/notes</td>
<td>6.6% (5)</td>
<td>9.2% (7)</td>
<td>6.6% (5)</td>
<td>21.1% (16)</td>
<td>31.6% (24)</td>
<td>4.43</td>
</tr>
</tbody>
</table>

_skiped question 2_
Organization

• Exam styles
  – Inconsistency of exam style (question structure, number of questions, depth of questions)
  – Board style questions and eliminate double negatives

• Lack of a standard or goal about depth of knowledge
Streamlining the Curriculum for the Boards and Wards

• High volume of information, not much editing
  – “The focus was on the tree (actually, more like the bark and leaves), and it was up to us to orient ourselves in the forest.”
    – member of DMS ‘10
  – Board topics missed or too many extra topics presented

• Learning objectives of most courses are unclear
Cohesion

• 1st Year curriculum comes off as a set of “a la carte” classes that bare little relation to one another
  – Little attempt to relate material among classes in a given term
  – Little apparent logic to the order of the courses

• Yet, there is considerable overlap between different courses and specific lectures
  – Eg. Two lectures in one week on gram negative sepsis
  – Eg. “We learned about hemoglobin 4 times. The departments aren’t communicating within themselves or with each other nearly enough.”

• Often poor communication between and within departments
Student Dissatisfaction

• In many students’ minds, the first year is the weakest year in our medical education
• Many are frustrated by inefficiency of the first year curriculum
• These are shared among all four classes and the same complaints are voiced in evaluations and to curriculum representatives year after year, resulting in little change
• Students falling through the cracks
Grading System

• Current grading system is Honors/Pass/Fail

• Pass/Fail grading system was previously proposed when grading was letter based
  – A compromise on H/P/F was made

• Yet, this system is unpopular among the students
  – Too much pressure in an already difficult year
  – Student morale and mood can be affected
  – Competition can result
  – Many other medical schools are P/F for first year
Grading System: Data Collection

In late December, first-year students were surveyed on advising, curricular, and remediation topics.

Survey:
- 40 questions, with options for comments
- on-line (surveymonk.com), anonymous
- average 74 responses (88% response rate)
## Grading System: Importance to First-Years

4. Rate the following first-year curriculum issues based on how important improvement in each area is to you:

<table>
<thead>
<tr>
<th></th>
<th>no improvement needed</th>
<th>low importance</th>
<th>medium importance</th>
<th>high importance</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiz/Exam schedule:</td>
<td>19.7% (15)</td>
<td>23.7% (18)</td>
<td>13.2% (10)</td>
<td>25.0% (19)</td>
<td>6.6% (5)</td>
<td>76</td>
</tr>
<tr>
<td>Quality of lectures/notes:</td>
<td>6.6% (5)</td>
<td>9.2% (7)</td>
<td>6.8% (5)</td>
<td>21.1% (16)</td>
<td>25.0% (19)</td>
<td>4.43</td>
</tr>
<tr>
<td>Grading system:</td>
<td>5.3% (4)</td>
<td>11.8% (9)</td>
<td>11.8% (9)</td>
<td>17.1% (13)</td>
<td>38.2% (29)</td>
<td>4.41</td>
</tr>
<tr>
<td>Advising system:</td>
<td>12.2% (9)</td>
<td>9.5% (7)</td>
<td>16.2% (12)</td>
<td>25.7% (22)</td>
<td>17.6% (13)</td>
<td>3.76</td>
</tr>
</tbody>
</table>

| Other (please specify) | 5                     |

answered question 76
skipped question 0
Grading System: Preferences of First-Years

8. The best grading system for me would be:

<table>
<thead>
<tr>
<th>Grading System</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass/Fail</td>
<td>72.0%</td>
<td>54</td>
</tr>
<tr>
<td>Honors/Pass/Fail</td>
<td>21.3%</td>
<td>16</td>
</tr>
<tr>
<td>A/B/C/Fail</td>
<td>6.7%</td>
<td>5</td>
</tr>
</tbody>
</table>

answered question: 75
skipped question: 1

9. The best grading system for the first-year medical class (as a whole) would be:

<table>
<thead>
<tr>
<th>Grading System</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass/Fail</td>
<td>84.0%</td>
<td>63</td>
</tr>
<tr>
<td>Honors/Pass/Fail</td>
<td>12.0%</td>
<td>9</td>
</tr>
<tr>
<td>A/B/C/Fail</td>
<td>4.0%</td>
<td>3</td>
</tr>
</tbody>
</table>

answered question: 75
skipped question: 1
Grading System: Comments

“There should not be any grades. We're motivated enough to do these things on our own and it only encourages competition b/w hardworking people.”

“I think going P/F would be very helpful. If necessary the failing mark can be raised as well. With grades being quantized at the end of the term, there are two good options: either have A/B/C/F (so have a lot of divisions), or have P/F. When you have quantized grades and something in the middle, like H/P/F, then it places students in more of an awkward position. In this case, there aren't as many divisions like A,B,C,F, so there is less motivation to do the best on each subject. I think A/B/C/F would breed competitiveness, so the next best thing is an unintuitive leap to the P/F system…”
Grading System: Comments

“...what purpose does it serve when 45% of people get honors, and the rest don't only because they scored an 89, not a 90.”

“The best Ivy League schools are moving away from H/P/F. Someone in our class just told me that Columbia, for example, just got rid of Honors for their current second year class. Harvard does not have AOA or Honors. Etc, etc.”

Excerpt from admission brochure cited by one student when referring to the grading system: “Dartmouth's unusually collegial culture fosters a sense of collaboration rather than competition.”
Grading System: Recent Change to P/F at University of Virginia
(Bloodgood et al., in press)

Results: Student Academic Performance Data

An average of all course grades was calculated for each student in the Graded and Pass/Fail Classes

<table>
<thead>
<tr>
<th>Class</th>
<th>n</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graded All</td>
<td>137</td>
<td>87.14</td>
</tr>
<tr>
<td>P/F All</td>
<td>138</td>
<td>87.46</td>
</tr>
<tr>
<td>Graded Male</td>
<td>53</td>
<td>88.06</td>
</tr>
<tr>
<td>P/F Male</td>
<td>74</td>
<td>88.02</td>
</tr>
<tr>
<td>Graded Female</td>
<td>84</td>
<td>86.56</td>
</tr>
<tr>
<td>P/F Female</td>
<td>64</td>
<td>86.81</td>
</tr>
</tbody>
</table>
Grading System: Recent Change to P/F at University of Virginia

(Bloodgood et al., in press)
Grading System: Grading is related to Wellness, which relates to Quality Patient Care

Using the Beck Depression Inventory (BDI), Clark and Zeldow (1988) followed a class of medical students through their student careers. They found that - on average - 12% of medical students had major symptomology of depression (BDI of 14 or greater) at sample points. The highest incidence was at the end of sophomore year, when 25% of medical students had a BDI of 14 or greater. Furthermore, over the first three years of medical school the median class BDI increased by 300%.

Dyrbye et al (2006) found correlations between mental health and empathy in medical students. The strongest results correlated high burnout scores and low quality of life scores with low empathy scores. A similar study surveying medical students was published by Thomas et al (2007) and showed a positive correlation between wellbeing and empathy, and a negative correlation between burnout and empathy.
Summary of Issues

• Policies are inconsistent and unclear
• Notes are variable
• Lectures often lack clinical relevance, too detailed, and vary in quality of teaching
• Exam styles differ
• Lack of cohesion among courses
• Unintended, unnecessary overlap of lectures, poor communication among professors/departments
• Curriculum has non-productive extraneous/redundant information
• Student dissatisfaction about inefficiency, passive learning method, and grading system
What is the Goal of the First Year Curriculum?
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Proposed Solution - Organization

• Create a central office of Year I with devoted staff
• Director of Year I
  – Similar to Dr. Nierenberg’s role as the Director of SBM
• Duties:
  – Oversees the entire first year curriculum, ensuring cohesion and integration
  – Continually evaluates the curriculum to meet the evolving needs of the current students
    • Eg. Pediatrics in Year II
  – Centralizes and standardizes quality control of lectures, notes, exams, courses, etc.
  – Facilitates communication among departments and lecturers
  – Advocates for continual improvement in clinical relevance, Board preparation, and editing of superfluous subject matter
  – Supervises remediation and academic counseling
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• Student dissatisfaction about inefficiency, passive learning method, and grading system
Proposed Solution - Cohesion

• Move toward greater emphasis on quality of teaching
  – Clinical Correlations
  – Distilled course outlines/notes
  – Review sessions that emphasize key concepts
  – Opportunities for clinical engagement/application
  – Board style exam questions/review questions

• Use more active forms of learning rather than passive
  – Eg. small group conferences

• Director of Year I offer guidance for course directors and mentorship for professors

• Teaching Institute for professors/workshops for preparing lectures, powerpoints, notes (UVA model)
Proposed Solution - Cohesion

• Course director meetings to facilitate integration and eliminate needless repetition, and to establish clear learning objectives for Year One

• Intradepartmental meetings
  – Encourage faculty to examine and refine the material they are presenting, with the goal of providing a relevant introduction for our clinical education as well as adequate preparation for our second year courses and the boards

• Utilize expertise of housestaff

• Make sure faculty have Blackboard access to all course offerings

• Responsiveness to course evaluations
Summary of Issues

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- Exam styles differ
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- Unintended unnecessary overlap of lectures, poor communication among professors
- Curriculum has non-productive extraneous/redundant information
- **Student dissatisfaction about inefficiency, passive learning method, and grading system**
Proposed Solutions- Student Dissatisfaction

• Make Year I Pass/Fail

• This will decrease pressure and competitiveness, while improving students’ mood and well-being

• Dr. Bloodgood’s Research
Summary of Issues

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- Student dissatisfaction about inefficiency, passive learning method, and grading system
Proposed Solutions-
Improve Course Evaluation Process

- Improve survey response rates
  - Timing - make available for longer period
  - Uniform policy to increase compliance

- Change Survey Format
  - Edit questions to be more informative and concise
  - Increase scale from 1-5 to 1-10

- Utilize evaluations to make recommendations for improvement and implement curricular change

- LCME cycle of Year I presentations are finishing and this is a good time to revise the processing of evaluations

- Yearly meetings with the course director, Director of Year I, and the evaluations committee to discuss the results and future changes
Summary of Issues

• **Policies are inconsistent and unclear**
• Notes are variable
• Lectures often lack clinical relevance, too detailed, and vary in quality of teaching
• Exam styles differ
• Lack of cohesion among courses
• Unintended unnecessary overlap of lectures, poor communication among professors
• Curriculum has non-productive extraneous/redundant information
• Student dissatisfaction about inefficiency, passive learning method, and grading system
Proposed Solutions—Improved Remediation

- When students struggle in first year courses they must be contacted by the course directors
  - In the Fall semester of Year I, 40.5% of students failed a quiz
  - Of those students, only 13% were contacted by a course director every time and offered additional help
  - Moreover, 62% of students said that if they were to fail a quiz, they would prefer to be contacted by the course director and offered additional help

- Students have different educational backgrounds and study habits

- Remediation should involve professors not use of 2nd year tutors
  - Eg. Anatomy Dept.
Conclusion

With the many issues that have been discussed we propose an MEC subcommittee to:

1) Evaluate the Year I curriculum and

2) Consider the possible solutions we have provided today as well as those offered in student evaluations and in collaboration with Year I faculty