Proposal for a New Quillen College of Medicine Curriculum

First Report of the Curriculum Redesign Working Group
July 7, 2008
Members

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Int Med/Academic Affairs
Biochemistry
Psychiatry
Pathology (Micro)
Physiology
4th year medical student
Family Medicine
Academic Affairs/Dean’s Office
Academic Affairs
Academic Affairs (admin support)
Current Curriculum

• Traditional sequence
  • 2 years basic science
  • 2 years clinical

• Most courses departmentally & discipline based

• Has worked well
  • Graduates perform at national average on USMLE exams
  • Graduates successful in competing for post-graduate training
  • Perform well as practicing physicians
As scientific knowledge advances, new information added without always revisiting relevance of previous content

Curriculum becomes more fact dense

New issues relevant to future clinical practice have not been included:

- New ethical issues
- Changing health care delivery mechanisms
- Evolving technology
- Changing student learning styles
Current Curriculum - Limitations

• USMLE plans to update examinations
• Assess abilities at two points in time
  • Supervised practice of medicine (residency)
  • Unsupervised practice of medicine
• Increased attention to ethical and social issues in the evaluation process
June 2007 MSEC meeting – Dr. Bagnell charged committee to:

- Examine curriculum
- Consider reducing basic science content by 25%
- Increase clinically relevant content
Curriculum Redesign Working Group

- Carefully appraised details of each first and second year course
- Reviewed medical education literature
- Studied a variety of curriculum models from other schools
- Contacted faculty at other schools currently implementing curriculum revision
Goals

- Shift focus toward teaching concepts most relevant to the future practice of medicine
- Increase integration to help learners appreciate the relationships among the various basic science subjects and between the basic and clinical sciences
- Heighten students’ abilities to maintain a practice of life-long learning
- Enhance the curriculum by including important topics currently omitted – especially social context
Principles

• Maintain integrity of basic science content while improving organization of delivery
• Present material in a logical sequence
• Recognize changing learning styles and use of technology by the current generation of students
• Increase student engagement and knowledge retention by allowing more time for self-directed learning and a variety of active learning techniques
• Alter curriculum to insure students are capable of 1) critically appraising scientific advances 2) dealing with the ambiguity faced in clinical practice
Principles

- Provide time for new content by eliminating excessive detail
- Enhance integration of material in a clinically relevant way
- Focus first year on normal structure and function
- Focus second year on abnormal structure, function, and fundamentals of prevention, diagnosis and treatment
- Present material in integrated course blocks
Advantages

- Provides opportunity for comprehensive review of the curriculum and for rebalancing concepts presented in the curriculum
- Provides opportunity for interdisciplinary faculty interaction and collaboration
- Provides opportunity to include new content to better prepare students for (new) USMLE testing and for practice
- Increases efficiency of curriculum
- Increases self-directed learning
- Reduces competition (for student attention) between courses
Potential Problems

- Requires faculty to learn new teaching techniques
- Requires more basic science and clinical faculty members to serve as small group leaders
- Requires significant resources (faculty / new faculty / administrative) and work to reorganize curriculum
- Faculty members must have a greater awareness of the curriculum as a whole
- Working outside of current departmental structure, presents implementation challenges
Assumptions

- 20 weeks per semester (including finals)
- Keep Thursdays (first year) and Tuesdays (second year) available for RPCT
- Each of Blocks 1-5 will have one basic scientist and one physician as co-directors along with a steering committee of faculty with appropriate expertise
Assumptions

- Block 6 will have a full-time clinical course director with appropriate support
- Each organ-based subset will have a section director with appropriate expertise
- Greater proportion of alternative instructional strategies
- Limit contact hours to allow for more self-directed learning
- Evaluation techniques reasonably standardized across the curriculum, integrated within a course, and include non-cognitive assessments, e.g. ~50-60% exams, 25% quizzes, 15-25% task completion/non-cognitive
Summary – Year 1

• Introduction to Medicine (1-2 weeks)
• Four major basic science blocks interspersed with two clinical blocks
• Communications taught spanning the two blocks of fall semester
• “Physician, Profession & Society 1” spans the entire first year
Summary – Year 2

- One basic science block
- Major course for the year is an integrated organ system block which spans both semesters
- A course will be developed to bridge to the clinical years
- “Physician, Profession & Society 2” spans the entire second year
- Also, Practice of Medicine runs throughout the year
Orientation

- One week before semester begins
Year 1
Introduction to Profession

- 1 - 2 weeks at beginning of semester before other courses
- Begins introduction to becoming part of the profession
- Introduces topics and issues which will be addressed in the future such as:
  - Professionalism/leadership
  - History of Medicine
  - Physician roles, identity and functions
  - Patient-centered care
  - Social and community context of medicine
  - Rural practice of medicine
  - Basic clinical skills
  - Shadowing/health coaching
Block 1 – Cellular & Molecular Medicine

- Biochemistry
- Cell biology & physiology
- Molecular genetics
- Case oriented learning activity
- 8-9 weeks
Block 2 – Human Body – Structure and Development

- Gross anatomy
- Embryology
- Introduction to physical examination
- Case oriented learning activity
- Introduction to imaging
- 8-9 weeks
Block 3 – Human Body – Tissue Structure and Function

- Cell & Tissue without basic cell biology covered in Block 1
- Physiology without basic cell physiology covered in Block 1
- Case oriented learning activity
- 9-10 weeks
Block 4 – Pathogens, Immunity & Antimicrobials

- Micro/immunology
  - Note: This will include much of current course content, but aspects that can be moved to the integrated organ systems course, will be presented there.

- Introductory principles of pharmacology
  - Presentation of pharmacokinetics and pharmacodynamics in context of antimicrobial therapy

- 8 -9 weeks
Communications

- Spans Blocks 1 & 2 in the fall; similar number of hours as in current course
- Inter-professional
- Skills of patient-centered communication, including in challenging situations (bad news, domestic abuse, depression, end of life, grieving; dealing with errors)
- Communication with other health professionals
Physician, Profession & Society 1

(Alternative title: Patient, Physician and Profession)

Spans the entire first year, two hours per week

Potential Topics:

- Leadership
- Ethics/professionalism (including topical discussions: neonatal, genetic, research, reproductive, bioterrorism, impairment and collegial responsibility, social justice, etc)
- Self-care
- Prevention (The Healthy Human)
- Population health
- Behavioral science (other than lifespan)
Potential topics continued:

- Cultural issues/global medicine
- Health disparities
- Complementary and alternative medicine
- Professional communication and relationships/teams
- Quality Improvement/ reducing medical errors
- Gender issues
- Chronic disease
Clinical Modules – 1st year

Potential Topics:

- Lifespan development
- Human Sexuality
- Disease that integrates previous module’s basic science material
- Thematic approaches to integration:
  - Disease from a lifespan perspective
  - From a cultural perspective
  - From health policy/systems/financing perspective
- Continue traditional spring preceptorship
- 1.5-2.5 weeks
Year 2
Block 5 – Mind, Brain & Behavior

- Current neurosciences course with less focus on clinical neurology (this will be covered in neuro/psych component of Block 6)
- Some components of current behavioral sciences course
- Pharmacology topics relevant to nervous system including autonomic pharmacology
- 8 weeks
## Block 6 – Mechanisms, Diagnosis & Treatment of Disease

<table>
<thead>
<tr>
<th>Content</th>
<th>Topic</th>
<th>Time</th>
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<tbody>
<tr>
<td>Pathology</td>
<td>Genetics</td>
<td>2 wks</td>
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<tr>
<td>Pathophysiology</td>
<td>Rheumatology &amp; Immunology</td>
<td>2 wks</td>
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<tr>
<td>Pharmacology &amp; other therapeutics</td>
<td>Endocrine</td>
<td>2 wks</td>
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<tr>
<td>Microbiology</td>
<td>Cardiovascular</td>
<td>3 wks</td>
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<td>Laboratory Medicine</td>
<td>Respiratory</td>
<td>3 wks</td>
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<tr>
<td>Imaging</td>
<td>Renal/GU</td>
<td>2 wks</td>
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<td>Nutrition</td>
<td>Gastrointestinal</td>
<td>2 wks</td>
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<tr>
<td>Behavior &amp; Lifestyle</td>
<td>Neurology/Psychiatry</td>
<td>4 wks</td>
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<td></td>
<td>Dermatology</td>
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<td>Reproductive/Sexuality</td>
<td>2 wks</td>
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<tr>
<td></td>
<td>Hematology/Oncology</td>
<td>3 wks</td>
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<tr>
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<td>Total=26 wks</td>
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Block 7 – Transition to 3rd year

- Biostatistics & Epidemiology (may be placed earlier depending on content of clinical modules and other courses)
- LINC course (*Learn, INtegrate, Consolidate*)
  - Bench to bedside
  - Cycle of life
  - Mind-body connection
  - Metabolic/Nutrition
- Clinical boot camp/introduction to 3rd yr
  - ECG interpretation
  - CXR interpretation
  - Practicing clinical procedures
  - BLS/ACLS
- OSCE
- 4 weeks
Practice of Medicine

- Integration, review and application of basic science pathophysiology
- Introduction to the culture of medicine
- Build on physical exam skills from M1 experience
- Enhance communication skills from M1 experience
- Basic interpretation of EKGs, lab data & diagnostic imaging studies
- Learn to package historical, physical exam & other data
- Learn to formulate a differential diagnosis
- Runs through year
Physician, Profession & Society 2

(Alternative title: Patient, Physician and Profession)

Spans the entire second year, two hours per week

Potential Topics:
- Evidence based medicine
- Biostatistics
- Epidemiology
- End-of-life issues
- Palliative care
- Health care systems/medical economics
- Clinical problem solving (How doctors think: critical reasoning and pitfalls)
- Pain management
- Introduction to Clerkships
- Boundaries
- Disruptive/abusive/intimidating behavior
- Medical legal issues
Potential Topics:

- Continue traditional fall preceptorship
- Evidence based medicine
- End-of-life issues
- Clinical problem solving
- 3 weeks
Cross cutting themes

- Ethics/professionalism
- Women’s health
- Geriatrics
- Nutrition
- Genomics
- Cultural Competence