QUESTIONS FOR SCHOOLS

JOHNS HOPKINS

ATTENDEES:
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DATE: 10/19/11  Phone Conversations

PROCESS OF CURRICULUM REDESIGN

Why did you redesign your curriculum?
Hopkins redesigned for 2 reasons: (1) to address LCME gaps in content and clinical experience, and (2) to begin to teach to future practice of medicine based on variations of biological, environmental and other factors on an individual’s health.

What were your goals?
Educate future physicians in areas from genetics to society and genes to society perspective as framework for translating basic science to clinical practice.

What was the timeframe?
They have 120 students per year; began as 3-year process, ended up as 5-year process, particularly due to addition of a building donated through Trustee who heard about redesign and wanted to commit a large donation. Currently in 3rd year of implementation and have assigned key roles including Vice Dean of Education, Assoc. Dean of Curriculum, and course directors for each of the courses that are non-departmental as well as three faculty who have been key to marketing this to all departments throughout the 5-year process.

What lessons were learned while constructing this curriculum? What would you do differently if starting all over again?
• Needed strong centralized (non-departmental) curriculum
• Need process to monitor vertical and horizontal content and methods.
• Needed and had full-time administrator at all meetings and in charge of website and marketing. This person has Masters in Hospital Management.
• At many times, this blank slate was overwhelming but encouraged to keep going and are now in implementation
• Need central voices with authority
• Still struggling with changing departments, particularly in 3rd and 4th year
• Struggles having longitudinal ambulatory clinics go beyond first two years as departmental clerkships are still not accustomed to giving up time to design or have integrated experiences. Feel this needs to come from top and be directed through Dean’s office.
If the school recently moved from a traditional curriculum that was heavily based on lectures into a new program that had limited lectures how did they assess what material was critical and incorporate this material into the curriculum? How did they work on obtaining buy-in from all stakeholders? What would have they done differently?

**GENERAL FRAMEWORK (BASIC STRUCTURE)**

- What is the basic structure of years 1 – 4 (and 5, if applicable)?
- How and when is the student introduced to clinical medicine?
- Are there required, formal inpatient clerkships?
  - Where do they appear in the curriculum?
  - Are there other requirements for students while doing required clerkships?
- Where in the curriculum is the physical exam learned and how is this facilitated and evaluated?
- How are basic sciences presented?

1. Scientific Foundation of Medicine. Foundations Course 4 months – accounts for three general boot-camp-like experiences (1) scientific foundations of medicine and these are all basic sciences, all integrated with exception of first 8 weeks is anatomy and that was designed that way so they can still have anatomy grade on transcripts (2) clinical course where history and exam are taught. 2-3 days per week for 4 months (3) once anatomy is finished, public health and population health bio-statistics foundations.

2. 15 months of systems-based courses, fully integrated both normals and abnormals of basic sciences but co-taught by both basic and clinical sciences, there is general director for Genes to Society and then each block has block head. Heads of blocks are given 10% time and the course directors, there are two basic scientists, pathologists and pulmonologist that co-direct Genes to Society.

3. Most unique – Intersessions. Themes that occur one week long throughout all 4 years. Themes in years 1 and 2 are clinical science themes, years 3 and 4 are basic science themes. The advantage of this is allowing for full integration across all 4 years. Basic scientists are thrilled to get exposed to 3rd and 4th years and the goals and objectives for these are integrated, no longer siloed.

4. Longitudinal ambulatory clinics, occur half days per week for two years, unable to extend to 3rd and 4th years as hoped, secondary to again inability to have message from top down to change departmental ownership of time.

5. Scholarly concentrations. Occur during intersessions, not within 1-week blocks. Occur for two years but could anticipate happening throughout 4 years and culminating in Capstone 4th year. These are areas that students choose one of five areas and they receive seminars
in small groups throughout the curriculum. Five areas are laid out during foundations course
could easily be model for our Masters concentration areas.)

6. Four-week introduction to transition to wards (EKG, etc.) integrated teaching with one
course director.

7. Six 8-wk core clerkships: Med, Surgery, Pediatrics, Ob/Gyn, Neuro/Psych, ER

8. Two required 4-wk advanced clerkships: (1) chronic care (2) intensive care unit. Students
choose sites.

9. 4-weeks of sub-I, area of students choice

10. Final 2-wk capstone course in prep for internship procedures, ALS, balancing life issues.

INTEGRATION (HORIZONTAL & LONGITUDINAL)

- If basic science is integrated into clinical discussions, how are the exercises developed,
  who is involved in delivering content and how is competency assessed? Do they utilize
  any innovative methods of integrating basic science into the clinical clerkships?
- Are there other mechanisms established for the integration of basic science into the
  clinical experiences? Are the basic scientists involved in teaching during the clinical
  experiences? (For example see the NY Academy of Science videos from their “Innovating
  and Updating the Medical School Curriculum” event. This presentation by Carol Storey-
  Johnson and the presentation by Erica Freidman discuss linking science and clinical
  training and what aspects of biomedical science are critical components of educational
  programs.)
- How did they accomplish vertical integration? How did they accomplish horizontal
  integration?

Hopkins had begun Basic Science integration during years 1 and 2 back in 2007 and have now
further integrated with clinical sciences across all 4 years, particularly in intersession areas.
Their foundations also integrate in their intersession themes are chosen based on areas from
basic sciences and clinical sciences that overlap across organ systems. Themes include:
genomics/proteomics, imaging, informatics, molecular embryology, pathology, pharmacology,
human development, pain, patient safety, professionalism, epidemiology, nutrition,
communication, cultural competence, public health, clinical reasoning, population medicine.
Advising during themes during intersessions.

All integrated intersessions are done in team-based learning where teams of scientists and
clinical scientists co-lead small groups. Integration encompasses all processes, no longer taught
like silos. For example, in the systems-based learning pulmonology block you’d have director of
each block charged with designing integrated goals and objectives and the faculty from
anatomy, physiology, pharmacology, etc. all work together to contribute to those integrated
goals and objectives. Groups all answer to system-wide integrated committee.
LONGITUDINAL CLINICAL EXPERIENCE

- Are students assigned clinical mentors and patients to follow longitudinally?
- If there is longitudinal patient exposure, how does the student maintain this relationship if the patient receives care out of the system? How do they maintain exposure during required inpatient clerkships (if these exist)? How do they maintain exposure during required lecture, labs, and small group learning based activities?
- What is the mentorship relationship like (frequency of meetings, responsibility of mentors for clinical education, requirements to be a mentor, demands on mentors)? Are they all primary care providers?
- Are there teams of students and how do these interact with mentors? What role do these teams play in the clinical and basic science education of the students? Do these teams last all 4 years? Do students receive education about how to effectively work in teams? Are students involved in the evaluation of teamwork and participation of fellow students?

School had, beginning in 1992, a course they struggled with called the Physician and Society, which had multiple renditions. Now have new clinical science committee that oversees clinical integration. Their clinical experience starts with day 1 with Clinical Foundations and continues in years 1 & 2 for 15 months and their longitudinal ambulatory clerkship. Have 4-week block Transition to Wards and then core clinical clerkships and advanced clerkships sub-I’s are still struggling to have longitudinal clerkship for 4 years and feel that message needs to come clearer and stronger to change culture of departmental ownership. Have Johns Hopkins multiple-disciplinary community-based practice that accounts for all ambulatory practices and does 60%+ of ambulatory clerkship. None of this occurs in hospital. They also use underserved community practices for placement. Capability of sites is limiting factor for expanding continuity clinic.

STUDENT INDIVIDUALIZATION

- How do they deal with the variable level of student capability at the outset (i.e., stepwise introduction of clinical responsibility)?
- How does this look from the student perspective?
  - How flexible is the program at dealing with students in unconventional tracks or those with advanced prior experience?
  - Do students have the ability to test out of specific learning experiences, i.e. is duration and nature of progression through curriculum at all competency-based?
  - What difficulties were encountered in terms of students experience if self-directed learning was introduced into the curriculum?
  - Does your curriculum give students the opportunity to individualize their experience either through specific tracks of study, masters or other mechanisms?
- How does the program support and teach student wellbeing?
They have Foundations block in beginning of year 1, which is equivalent of our thinking of a boot camp. They have no one testing out of this and they purposely want to tap into varying skill levels to provide peer-to-peer teaching in different areas and contributions to whole; students in small groups. Their overall curriculum allows for educational continuity with deliberate reinforcement with basic and clinical sciences over 4 years. Their monitoring of students comes heavily from college advising program. Their college advising program is key mentoring process for students in support of their educational learning. Five students are assigned to an advisor per year, so each advisor has 4 sets of 5 students or 20 advisees. For 120 students 30 colleges. Students work in these modules for 4 years and have set time and objectives, typically meeting Thursday afternoons during intersessions. Students can choose additional mentors in years 3 or 4 that make discipline-specific focus but they continue with these college advisors over 4 years in their small molecules of 5 students. Research is introduced early in year 1, again students choose one of five themes and work in teams learning research methods throughout the curriculum. They would like to have expanded this into 4 years and could envision this culminating in a capstone project.

**CURRICULUM CONTENT**

- How much is expected and what type of instruction do the students with regard to understanding of non-medical aspects that influence their assigned patients healthcare (insurance, the regulatory environment, socioeconomic factors, family factors, etc.)?
- Are there formal mechanisms for introducing and assessing other procedural skills (Sim center exposures, practical exposures, etc)?
- Is there a formal ethics curriculum? How many hours and what format?
- How is research introduced and encouraged in the curriculum?
  - Are there formal programs to match students with research projects?
  - Is there a research requirement?
- Are there central competencies and outcomes that drive the curriculum?

1. Based on LCME gaps they had to add behavioral and social sciences heavily to this and were primarily in intersession.
2. Also added population-based themes in clinical work
3. Tied biology and systems-based learning to population based care
4. These areas fall into intersession or horizontal integration
5. They also use OASIS software, which has proprietary to cover all topics, particularly horizontal themes and this manages redundancies and gaps...but a word of warning that it’s only as good as the input. Garbage In Garbage Out, so if you want detailed content, it needs to be monitored closely.
METHODS

- How are clinical skills taught?
- What is the structure (and mix)? Lectures? Labs? PBL? Case-based learning? What percent of time is spent in each year in lectures, small group learning, laboratory learning, and self directed learning? What are some examples of self directed learning?
- Are there specific or unique educational technologies (including software) used to develop or enhance flexibility of their curriculum?

Numerous methods have been added to their basic lecture format. One in particular is concept maps for learning; students in small groups create clinical maps to see how far they can push their clinical skills and understanding. They are facilitated by simulation center, new building to support electronic white boards, team based learning, tbo, web learning, simulation vignettes. Team based learning is used extremely heavily in all courses starting with anatomy on day one and throughout their training. Have learning workshops for exploring disease systems that are multi-discipline basic science/clinical science and team based.

FACULTY DEVELOPMENT/SITE DEVELOPMENT

- What support exists for site development (time and training)?
- ***Does your medical school provide funding for clinician teachers? In general terms, how much? What is the funding stream for that support? ***please use discretion in your contacts about this***
- What professional support is there for curriculum development, oversight and evaluation?
- How is mentoring supported? How are faculty/advisor relationships cultivated?
- How does this look from the faculty perspective?
  - Are there “master educators”?
  - Is there a formal faculty development program for medical education? Who organizes this?
  - Does your institution have an Academy of medical educators? How is membership determined?

Have great challenges but have major workshops, retreats, training and new pedagogy, as well as support for faculty development, teaching rewards, and promotion criteria. Have interdisciplinary teaching with single directors for each of the new integrated courses. Have integration curriculum director (Dr. Thomas), and she oversees all pieces. All course directors report back to this group. This is a non-departmental structure. They provide course directors roughly 20% FTE; and block heads, particularly block heads for disease system-based learning, roughly 10-15% FTE. All are usually co-lead by basic and clinical scientists. Mentoring and advising is mentioned earlier in college advising program.
EVALUATION AND REMEDIATION

- How is the assessment of basic science competency made?
- If basic science is integrated into years three and four, how are students prepared for the basic sciences in step one?
- How does the program teach, evaluate and remediate professionalism and communication issues?
  - Are there 360-degree evaluations (including peers and patients)? Where and when does this take place?
  - Do students participate in clinical performance outcome reviews?
  - How are these used to assess student performance?
- What are the curricular mechanisms for development and remediation of communication skills?
- Is there formal support of psychometricians for program and student evaluation?

Step 1 is offered Oct of 3rd year; no block time to study. Readiness assessments are done in multiple ways; still utilize knowledge exams in years one and two with team scores on concept maps. Workplace assessments, OSCEs and NBME for comprehensive exam in year 2. IRAT and GRAT scores and problem-based learning and they’ve created pre-assessments at beginning of all team-based learning case discussions. Simulation is also heavily used in team-based learning and rated highly by students. Measures of overall success have been faculty/student engagement and integration. They report faculty/students being pleased with process. Still challenged to look at outcomes beyond post-grad scores and residency placements for overall success of process.

OTHER

Are there unique features of the admissions process?
Board of Trustees unique funding opportunity for both new building as well as faculty protected time, and they found it valuable to present their model to Board of Trustees.

Unique Highlights
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3. Their monitoring of students comes heavily from college advising program. Their college advising program is key mentoring process for students in support of their educational learning. Five students are assigned to an advisor per year, so each advisor has 4 sets of 5 students or 20 advisees. For 120 students 30 colleges. Students work in these modules for 4 years and have set time and objectives, typically meeting Thursday afternoons during intersessions. Students can choose additional mentors in years 3 or 4 that make discipline-specific focus but they continue with these college advisors over 4 years in their small molecules of 5 students.

4. Integrated Genes to Society course

5. Foundations Boot Camp, including basic sciences, clinical sciences and public health sciences.

6. They have Foundations block in beginning of year 1, which is equivalent of our thinking of a boot camp. They have no one testing out of this and they purposely want to tap into varying skill levels to provide peer-to-peer teaching in different areas and contributions to whole; students in small groups. Their overall curriculum allows for educational continuity with deliberate reinforcement with basic and clinical sciences over 4 years.

Gaps per their Awareness
1. Inability to have longitudinal ambulatory clinical experience greater than 2 years due to culture of departmental autonomy.
2. Expansion of scholarly concentration throughout years 3 and 4.

Follow-up Steps
1. Basic science faculty from DMS is welcome to contact Mark Teaford for further information or details
2. Derrick Jones will connect student-to-student per recommendation of Dr. Thomas to get student input.
3. Dr. Thomas invites us both to connect to AAMC and to a formal visit to their site to tour their new building.