

Module Review

Endocrine Winter Semester 2010

Course Director: Shawn Galin
Co-director: Hussein Abdul-Latif

Course Date: January 19th-February 10th, 2010

Review Date: December 8th 2010

Present:	Cathy Fuller	Chair, Pre-clinical Sub-Committee
	Carmel McNicholas	Ad hoc reviewer
	Shawn Galin	Course Director
	Hussein Abdul-Latif	Course Co-director
	Ryan Miller	Student Course Representative
	Sandrine Niyongere	Student Course Representative
	James Jackson	UME
	Mike Belue	UME

Apologies: Kristina Panizzi-Woodley UME Administration

Review Process:

The module review process consists of three parts; the self-study conducted by the course directors with the aid of UME, the review, i.e., the face-to-face meeting between representatives of the pre-clinical sub-committee of the MEC, the student representatives and the course directors (the review committee) and the final part, the report to the Pre-clinical sub-committee and thence to the MEC. The review committee received the self-study material approximately 7 weeks in advance of the meeting. Below is a summary of the face-to-face meeting, highlighting strengths and weaknesses of the course, and outlining areas for improvement. This is followed by the detailed report, which provides the rationale for the recommendations and overall evaluation.

Summary:

Endocrine was highly popular with the students. According to the student evaluations, the main reasons for this were the teaching and organizational skills, and approachability of the two module directors. In general, the faculty involved with this module scored among the highest of any faculty involved in the pre-clinical curriculum. However, there were some areas where improvements could be made, particularly in the exams, which need to include more challenging questions and in the omission of some topics, particularly those in pharmacology.

Strengths:

The two directors are seen as a major contributing factor to the success of this module.

Other strengths include:

Accessibility of module directors

Overall module organization

Small groups

Weaknesses:

Pharmacology of the endocrine system was not well covered.

Exams were insufficiently challenging.

Repetition of obesity information between endocrine and other modules

BMI practical

Coverage of MEN I and II syndromes and pheochromocytoma

Few themes were addressed

No grading of small groups

Recommendations for Improvement:

Include a list of module objectives in the syllabus provided for the students.

Include pharmacology topics during the course either as specific lectures or incorporated into existing lectures.

Increase difficulty of exams to include additional clinical scenarios and move towards the benchmark of 70-80% of questions in NBME format.

Review how obesity information is integrated into module and review the usefulness of the BMI practical.

Grade small group performance according to current protocol

Consider inclusion of an EBM activity or topic into the course.

Increase coverage of MEN I and II and pheochromocytoma

Consider providing high yield summaries of the pathology of each disease

Recommendation:

The endocrine module is a strong module that is very popular with the students. This largely reflects the popularity of the two directors, who are viewed as accessible, caring

and considerate. However, this overall view of the course on the part of the students is no doubt enhanced by the high mean average of the exams. Thus, increasing the difficulty of the module tests is a key recommendation. A second important area on which to focus is the relative lack of instruction in pharmacology, an area that has in the past been poorly handled by several modules. However, deficiencies in this topic area have been recognized and steps to improve coverage of pharmacological topics have been increased in other modules and it is strongly recommended that this also be the case for endocrinology. It is recommended that this course be reviewed in one year.

Report of Endocrine Review Committee Meeting, December 8th 2010

All six of the self-study areas were reviewed in order.

Module Objectives and Content

As with the majority of first year modules, objectives related to “commitment to patient good” (UASOM Objective 1, O1) were not really relevant to the Endocrine module. However, it was noted that several activities that took place during the module did fulfill some of the SOM module criteria although these were not identified as such by the two directors during the self study. For example, Objective 4, “...demonstrate the ability to apply information compiled from all sources into a coherent prioritized differential diagnosis and make appropriate clinical decisions” could be fulfilled by the small group activities. Overall the module did address the majority of the SOM objectives. . In terms of content, topics taught by Endocrine covered the vast majority of subjects listed under Normal and Abnormal processes as they relate to the Endocrine system. However there were some omissions listed as follows:

Pharmacology: According to the self-study, none of the USMLE objectives for pharmacology were covered in the endocrine module, i.e., Principles of Therapeutics subsection. It is understood that some lectures did in fact touch on pharmacological topics, such as Dr. Saag’s lecture on Osteoporosis, as well as lectures on Diabetes. However, the amount of pharmacology actually covered in this module needs to increase and be better identified in the self study. Similarly in the exams, only seven questions from a total 115 (over two exams) addressed a pharmacologic topic

Other: Some other disorders were also not covered, not identified as being covered by the directors or were covered only briefly. These include infectious disorders, e.g., mumps, inflammatory and traumatic disorders, systemic disorders and disorders due to the side effects of drugs. One student commented on brief coverage of pheochromocytoma,, while other mentioned that increased coverage of multiple endocrine neoplasia syndromes (MEN I and II) would be helpful.

Endocrine only covered material from two of the five SOM themes into the course, with lectures of one hour each on Geriatrics (Special Populations theme), Ethics (Professionalism and Ethics theme). However, part of this may be due to areas not recognized by the module directors as being part of a theme – for example, aspects of some lectures on reproductive physiology (e.g., contraception), may conceivably contribute to the Women’s Health theme, while the BMI practical could also contribute to the clinical skills theme. One noticeable deficiency was the lack of an evidenced-based medicine component in the course.

Methods of Instruction and Assessment

All of the materials relating to SOM objectives that were relevant for Endocrine were covered by lecture, small group, labs, large discussion groups, review sessions or a combination of these activities.

The majority of the material taught related to the “Biomedical Knowledge; Normal Structure/Function” and “Causes of Disease” sub-objectives of UASOM O3. In terms of student contact hours, 78.8% was spent in lecture (slightly up from 77.1% in 2008-2009),

which is above the 2010 benchmark of 50% lecture. The remaining ~ 20% of time was spent in a combination of other activities, including large group activities and small groups; the largest portion of the remaining time was spent on labs (13.5%). Total student contact hours (including ICM) did not exceed the 20 hour/week benchmark in any week of the three week module. However, lectures were well received for the most part, with 83% of the class rating them as outstanding or good.

The Endocrine module had two small group sessions covering diabetes, hyperthyroidism, GH deficiency, hypercalcemia, congenital adrenal hyperplasia, and Cushing's syndrome. Students were not evaluated using the current form, but were given full participation points for attending the sessions. The small groups were very well received by the students, 75% of the students agreeing or strongly agreeing that the small groups increased their understanding of the material. The students appreciated not having to prepare for these sessions, and thought that the timing of the sessions prior to the exams provided a good review. In contrast some students did not like the timing as the small groups took away from study time. There were also some comments concerning the use of non-expert faculty to lead some of the sessions, with some students being frustrated that some preceptors were unfamiliar with the Endocrine systems being studied, or presented information that conflicted with that presented in class. However, in general the small groups were seen as successful by the majority of students.

The only other point of note was that the experience in the Anatomy lab seemed to be somewhat variable, some students commenting that it seemed to be disorganized and that there seemed to be a difference in the experience of the first and second lab groups.

Exams: In this module, multiple choice questions accounted for 100% of the knowledge component but 80% for final tabulation (above benchmark of <50%). The percentage of questions in NBME format were 24% on Exam I (midterm) and 11% on Exam II (final). The benchmark is to obtain 70%-80% of questions in NBME format by 2010. The average number of questions per lecture hour was 2.9, and the majority of lectures seem to have questions associated with them on the exams. One area that appeared to be lacking was the renin/angiotensin system, but this is more likely and perhaps more appropriately covered in the Renal Module. There also appeared to be large gaps in the data – for example, no questions on Grave's/Hashimoto's disease, but this was due to confusion on how to complete the self study, rather than to real gaps in topic coverage. As a result of the face-to-face meeting it seemed as if the vast majority of USMLE1 content areas were in fact covered and tested. Approximately 7 questions (from a total of 119 over two exams) related to pharmacological or other treatments for endocrine disorders. Cronbach's alpha was 0.58 for Exam 1 (low reliability) and 0.77 (moderate reliability) for Exam II.

Student Outcomes

The required attendance for Endocrine was set at 70%; 92.6% of students attended 70% or more of lectures over the course. ARS questions were used to monitor attendance as with other modules.

Module raw score means for the class of 2008/2009 (91%) was slightly lower than that for 2007/2008 (92.4%), but was still the third highest of all pre-clinical courses taken by

the class of 2012. In terms on individual exams, the raw score (2008) for Exam I (Midterm) was 89.4%, for Exam II, (Final) 88.4%. In class answers to ARS questions were not tracked for Knowledge Performance but for attendance purposes only. The overall knowledge performance mean was 88.9% in 2009 and 90.7% in 2008. Individual group/performance means (composed of scores for small group participation and attendance at lectures were 99.4% in 2009 and 99.5% in 2008. There were no failures in the Endocrine module in 2009 or in 2008.

Student Evaluation of Module

The student evaluations of Endocrine were generally extremely favorable, which no doubt reflects the high module scores. Approximately 94% of the class thought the goals were clearly outlined (agreed or strongly agreed), 93% that basic and clinical sciences were well integrated, and 61% that there were planned opportunities to use outside resources (though from the review of the module it is unclear what these were). Fifty-six percent of students agreed that recall of facts and definitions was emphasized least, whereas 47% thought that understanding concepts was emphasized the most. Eighty-three percent of students agreed or strongly agreed that the lectures were helpful, 75% that the small groups facilitated understanding and 81% that exams tested student understanding of the module. Most students thought the exams were fair, with 81% of the class agreeing or strongly agreeing that the exams appropriately tested their knowledge and understanding of the material. Interestingly, many students commented that the exams were somewhat too easy, were not “board style” and did not allow for adequate discrimination between students.

Despite the fact that lectures were well attended and popular, the attendance policy was the single biggest complaint in this module, although this is not a module specific issue. Similarly, ARS was also a cause of complaint and had the lowest ratings of all evaluated parameters, scoring less than 50% in each area (made me prepare for class, made class more fun, made me feel actively involved etc.). The only area in which ARS scored more highly was in “ease of use” (73%). These findings are in common with all other modules evaluated to date.

Overall, 83% of students thought that the module was good or outstanding.

Based on the 2008-09 Nominal Group Technique (NGT) results, students thought most strongly that learning could be improved by providing more information on MEN syndromes and pheochromocytoma, making tests harder and more “board style”, and providing high yield summaries of the pathology of each disease. Students identified Dr. Galin’s lectures and module direction, the review provided by small groups, and the overall organization of lectures as the most helpful for their learning.

Consistent with the overall success of this module, only a few items were of concern to the students:

The BMI lab was thought to be too simple or just not helpful by a number of students. Along the same lines they commented that obesity lectures simply repeated much material that they had received several times previously. There were a few comments that the anatomy lab was disorganized and not particularly helpful – one suggestion was the possibility of having on-line demonstrations of the dissection that the students are meant to perform – however, in general most students seemed to appreciate the

anatomy sessions. There were several comments on the exams concerning the lack of rigor and board style phrasing, and that too many of the questions were “fact recall”. There were some complaints about individual questions that were confusingly written and that perennial comment that students did not receive enough feedback concerning incorrect questions. There were also several comments concerning the availability of exams for review such that “students could learn from their mistakes” and that there was insufficient feedback. It should be noted that making papers available to the students post-exam is contrary to current policy and as such this is not a direct decision of the module directors. The module directors did not run post-exam review sessions as do many modules; however, given that the exam mean was very high, with nearly all students doing very well on the exam, there was perhaps no necessity for a review! In addition, some students complained about the timing of the shelf exam with regards to the final exam for the module. However, the shelf exam is meant to be taken “cold” without the need for revision. One student commented that diabetes was not well covered, but this does not seem to be the case based on the evidence as there were multiple lectures on diabetes and closely related topics.

Evaluation of Lecturers and Preceptors

The overall quality of the faculty is rated Excellent or Satisfactory by 83% of the students in 2009 and 91% noted that the module faculty facilitated student learning. In 2007, 99% of the students thought the overall quality of the faculty was Excellent or Satisfactory. Many students particularly singled out the two course directors as being outstanding in terms of their organization of the module, their concern for the students, and their teaching abilities.

In terms of small group preceptors, 80% of the class agreed or strongly agreed that their preceptors facilitated effectively. There were some individual complaints about certain preceptors, in particular those who were not endocrine clinical or basic science faculty, as being insufficiently knowledgeable about the topics under discussion, but generally these seemed to be in the minority.

Impact of Changes from Last Year

One extra week was added to the endocrine module in 2009 as compared to 2008 and so student contact time increased from 34 to 52 contact hours. Lectures on reproductive physiology were added into the additional time slots available. This was a positive move from the first iteration of this course, where reproductive physiology was not extensively covered.