

## FUNDAMENTALS II MODULE REVIEW

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### REVIEW PROCESS:

The module review process consists of three parts: the self-study conducted by the course director with the aid of UME; the review meeting between representatives of the preclinical subcommittee of the MEC and UME, the student representative and the course director and the final report submitted to the pre-clinical subcommittee and then the MEC. Following is a copy of the review meeting and the Fundamentals II self-study report, including module strengths, weaknesses, and suggested areas for improvement.

### Summary:

Fundamentals II is a complex module in that it covers a breadth of material in a relatively brief span of time compared to the prior more traditional curriculum. Though there were nominal improvements from the inception of the course in 2007-2008, the current review suggests that further changes are needed to allow the course to fulfill its highest mission of presenting the basics of Immunology, Microbiology, Pharmacology, and General Pathology in a manner that is most comprehensible and effective for students approaching the Organ modules.

### STRENGTHS:

- 1) The module covers a broad array of material
- 2) Small groups are favorably rated by students
- 3) Students appreciate review sessions, and the PEIR online study was especially helpful in the course.

- 4) The course makes an effort to include a variety of teaching modalities, and to promote self-directed learning via the course website which provides images, pre-tests, and additional reading recommendations.
- 5) Many of the lecturers were highly regarded by students for their enthusiasm and expertise
- 6) The clinical co-director was regarded as very helpful by the students
- 7) The support staff and module coordinator were highly valued by students

#### **WEAKNESSES:**

- 1) Lack of consistent presentation of goals and objectives for individual lectures, and inconsistency between ITOs and actual lecture content.
- 2) Lack of consistent format for lectures, with some lecturers giving excessive detail at the expense of getting through basic material. This was especially problematic in the Pharmacology and Immunology lectures.
- 3) Lack of coordination of content between different modalities, with some lectures contradicting each other or textbook material.
- 4) Students' perception that the module director is either failing to monitor or does not care what is communicated to students
- 5) Students' perception that the module director is disrespectful of them and does not follow through
- 6) Lecture time remains excessive, though total weekly contact time meets the recommended less than 20 hours/week.

#### **REVIEW OF THE SELF-STUDY AREAS**

Each of the areas was reviewed in order.

##### **1) MODULE OBJECTIVES AND CONTENT**

Fundamentals II Module Objectives were well correlated with UASOM Goals and Objectives as well as ACGME Competencies. All the UASOM themes were addressed in some, if not all, components of the module, with less emphasis on some than others based on the content of the course.

Course content encompassed basics of general pathology, microbiology, immunology, and pharmacology.

##### **2) METHODS OF INSTRUCTION AND ASSESSMENT**

###### **A. METHODS**

Materials in Fundamentals II were covered by a variety of venues, including lecture, labs, projects, small groups, and reviews.

The self-study report encompasses all large group activities as “Lecture”, thereby attributing 92.5% of student contact hours to “lecture” compared to 90.8% in 2007-2008.

The bulk of time was dedicated to objectives related to knowledge and acquisition of learning skills, with a minimum of contact time devoted to self-directed and group learning (i.e., only 9 hours of the course specifically directed to this end).

## B. ASSESSMENT

Methods for assessment were outlined in the syllabus, with point totals and weights assigned for Knowledge Performance (70%) and Individual and Group Performance (30%).

### Knowledge Performance:

Three written exams were given, with proposed weights of 10, 20 and 25 percent of the total course score, totaling 55% of the module raw score. The reliability coefficient for the three exams were within the acceptable moderate (0.70-0.89) or high (0.90-1.0) ranges. The three exams accounted for 79% of the knowledge component of the score.

Interactive Pathology Quizzes and Immunology and Virology Case Studies accounted for 15% of the raw module score, though it is unclear from the review materials how reliability of these measures was ascertained.

Individual and Group Performance was assigned a weight of 30%, and encompassed Macroscopic Pathology Rounds, Pharmacology Cases, Microbiology labs, and lab Medicine Case Reviews. Students were to be graded on three one hour small group sessions discussing Pharmacology Cases. However, the professional form could not be utilized because contact with an individual preceptor was less than four hours, so students were given full credit if they attended and completed the associated quiz.

ARS participation was to account for a maximum 5% of the module score. However, there was a problem with AV techs capturing data, so credit for 67 lectures was attributed to class, raising the base to 100 lecture hours, raising the mean score for attendance to 99.4%.

## 3) STUDENT OUTCOMES

See ARS, above

Exams were reviewed by the review team. Approximately 14% of the exam questions were in standard NBME format (compared to 14-22% for other modules).

Mean scores for the three written exams were: Exam I - 84.2/ II – 70.1/ III - 81.1. A significant issue for students was that the course master stated the score would be scaled for Exam II, and then reneged.

Two students failed the course in 2008-2009, compared to one failure in 2007-2008.

Scores for Step I for the class who took the course 2008-2009 have not been analyzed fully.

#### 4) STUDENT EVALUATIONS OF MODULE

Student ratings of the module are expressed on a 5 point scale and/or as a percentage of students in agreement. Ratings are compared to the past years ratings and/or to other first year modules.

Several measures were assessed and reported in turn:

- A) Module goals and objectives clearly outlined  
3.5, with 62% affirmative, 2<sup>nd</sup> lowest of MS I modules
- B) Successful integration of basic and clinical sciences  
3.9, with 74% affirmative, 3<sup>rd</sup> lowest of MS I modules

Students rated the module in multiple domains, and those ratings were compared to the ratings of 2007-2008 and to other first year modules in 2008-2009. Areas with ratings which were

- C) Provision of planned opportunities to use outside resources  
3.5, with 55% reporting failure, 2<sup>nd</sup> lowest of MSI modules
- D) Module Director Evaluations (cp. to 2007-2008)
  - 1. Effective at organization: 3.3, or 55%, up from 3.2 and no change
  - 2. Responding to student concerns: 2.8 or 34%, up from 2.6 and 28%
- E) Module faculty facilitated learning: 3.5 and 66%, up from 49%
- F) Exams tested understanding of module content: 3.2 and 45%  
(down from 3.3 and 49%)
- G) Feedback provided: 2.6, down from 2.7
- H) Module components facilitated learning: % agree or strongly agree
  - 1) Projects: Majority of students answered N/A, 47% of students who responded put neutral, 27% agree
  - 2) Small groups: 52% up from 29%; 96.1% viewed as positive, up from 87.9% in 2007
  - 3) Computer based resources: 57%
  - 4) Lectures: 67%
  - 5) Texts/printed materials: 60%
  - 6) Independent learning assignments: 42%
- I) Small Groups

- 1) Aided understanding of module concepts 3.7 and 67%
- 2) Worked efficiently: 4.0 and 82%
- 3) Preceptor facilitation: 3.9 and 75%

J) ARS

The only positive student response was ease of use. Students who reported it encouraged preparation for class was 2.5/5 and 15% respectively. Unchanged from 2007-2008

K) Learning outcomes emphasized

Recall – 59% rated highest

Understanding concepts - 52% rated least

Ability to apply facts/concepts to clinical issues – 49% said 2<sup>nd</sup> most emphasized

L) Overall quality of module faculty: 1.9/3.0

14% Excellent

57% Satisfactory

29% Needs improvement

M) Overall quality of module 3.1/5.0

6% Outstanding

27% Good

44% Satisfactory

23% Weak to unsatisfactory

N) Factual versus Conceptual Learning

59% stated module recall of facts was most emphasized

52% stated understanding concepts was least emphasized

30% rated ability to apply facts and concepts as most emphasized

22% rated ability to apply facts and concepts as least emphasized

O) Specific module components (see H, above)

P) Nominal Group Technique

2 groups identified strengths and weaknesses of the course

Strengths:

The microbiology component of the course was felt to be the strongest aspect of the course. This was congruent with written student comments which were reviewed.

Weaknesses:

- 1) “Too many teaching modalities with minimal correlations”
- 2) “Dr. Anderson was apathetic and condescending to students”

This statement was also reflective of student written comments, many of which reflected dissatisfaction with organization and oversight of the course in addition to the perception of unprofessional relationships with students.

## **5) EVALUATIONS OF LECTURERS AND PRECEPTORS**

Individual preceptor evaluations were provided to reviewers in the form of tables, with preceptor identities blind to reviewers. It is unknown whether the number identifiers correlate from 2007-2008 to 2008-2009, so direct comparison of individual preceptors is not done, but rather, ranges are reported.

Preceptor rating scale: 7-9 Excellent, 4-6 Satisfactory, 1-3 Improvement Needed.

Preceptor ratings had a mean of 6.5 in 2008-2009 compared to 6.8 in 2007-2008. In 2008-2009, 11.7% of students rated any preceptor < 3 compared to 17.3% of students in 2007-2008.

Lecturer evaluations for Fundamentals II were 3.4-3.5 compared to those other MS I modules, and not improved from 2007-2008.

Small group preceptors were rated using the same scale, with those of Fundamentals II rated at 6.8 in 2008-2009 compared to 6.5 in 2007-2008. The Fundamentals II small group preceptors were rated marginally lower than the small group preceptors for PDS and Fundamentals I combined at 7.7 and 7.4 for 2008-2009 and 2007-2008, respectively.

Students identified having different small group preceptors as problematic, believing this led to inconsistencies in evaluation across preceptors.

## **6) IMPACT OF CHANGES FROM LAST YEAR**

The self-study reflects a successful decrease in the number of student contact hours to the ideal of less than 20 hours per week.

The lecture hours were reduced from 118.5 to 91.7, small group from 8.5 to 2.8, lab from 4.0 to 3.7, and case discussion from 2.0 to 1.8. There still remains questionable value to some of the changes based on student feedback and the effect of inability to reliably score students' group performance due to insufficient contact hours with a single faculty evaluator in group.

"Fewer themes" was noted in the self-study as "an improvement from last year." Upon examination of the data provided, it appears that Ethics specifically was removed from the lecture schedule and this seems to be the most obvious change to the module curriculum, and may account for some of the decrease in overall lecture time.

More review sessions were added, though their actual value is unclear, with 47% of students reporting that the large group laboratory medicine review was not helpful.

## **RECOMMENDATIONS FOR IMPROVEMENT:**

- 1) Application of a standardized lecture format. Each lecturer should provide Power Point presentation to include:
  - b) Goals and objectives
  - c) Outline of material to be presented
  - d) ARS questions
  - e) Summation of most important points
  - f) Recommended readings (pertinent papers, texts, on-line resources)

These should be reviewed prior to presentation by module director and/or module educational committee.

- 2) The module director or his designee should ensure that the format is indeed followed by each lecturer (this would prevent contradictory information being presented) and non-compliance with the aforementioned standards is not acceptable.
- 3) The course director should designate office hours in which he is available to address student concerns. If he chooses to communicate with students via e-mail, responses should be courteous and timely.
- 4) It is essential that students get the benefit of feedback from small group sessions. This can only happen if there are consistent and committed preceptors available and there is enough small group contact to use the designated evaluation forms.
- 5) Exams should be structured to reflect what is taught, and questions should more closely reflect NBME format.

## **SUMMARY STATEMENT**

The module continues to be top-heavy with traditional lecture-based instruction. The basic goals and objectives of the new curriculum should be embraced by the module leadership and the instructional methods revamped, rather than attempting to repackage the old curriculum into the more limited contact hours.