

*Scientific Foundations Committee*

*December 6, 2013*

*7:30 – 9:00 am, B-646 Mayo*

***In Attendance:*** S Allen, L Anderson, J Chipman, B Clarke, G Giesler, S Katz, R Kempainen, M Klimstra, S van den Hoogenhof, A Minenko, C Niewoehner, J Norrander, M Ramey, M Rosenberg, D Satin, P Southern, K Watson, T Weinhaus, K Wickman,

***Absent:*** R Amado, A Belzowski, E Coleman, G Filice, J Nixon, D Powell, M Sanders, L Schimmenti, K Setterholm, D Thompson, D Wangensteen, M Woods (CEC)

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**Consent Agenda**

**ACR Completion and Reporting Process (Item #1)**

Dr. Steve Katz reminded SFC members that details of the Annual Course Review had been discussed at previous meetings and that the document submitted for approval is to REMIND course directors in order to comply with the LCME standards. We are required to annually review and evaluate each course and to document the review for every course in the program. This has been done consistently overall, this specific document is to reaffirm that ACRs are to be completed at the end of the course while the information is current. Evaluation of the course considers what is working, where there are weaknesses, details of student input and how it impacts changes for the next academic year. Because not all courses can be scheduled to present at the end of the semester/period in which they were taught, SFC meetings are organized to permit presentations over the entire year. Due to other matters SFC needs to cover including new course and program development, changes to courses/faculty and Policy matters; finding appropriate time for all 17 ACR presentations in every academic year isn't functional. There times when some course directors do not complete the ACR at the end of their course, this also complicates scheduling presentations.

The goal with this document is to acknowledge through a vote of the Committee that every course is required to submit a completed ACR form. For 2011-12AY two courses did not complete the ACR and for the progress document UMMS was required to submit as follow-up to our last LCME reaccreditation site visit, Dr. Majka Woods was required to include that information in the formal "letter of response" submitted this month to LCME. The general practice in the future will be an expectation for each course director to present their ACR to the Committee every other year, which also will give SFC agendas the ability to cover areas other than the ACR presentations. Upon a motion duly made and seconded ACR Completion and Reporting Process passed with no changes or opposition.

**Secure Exam Debrief Procedure: Years 1 and 2**

This proposed standardized procedure establishes a suggested format for a debrief session after an exam, where a student can get the correct answers in a secure setting, once they have taken the exam. This may be done in different ways, but establishing suggested steps to use can help prevent students from being confused and jeopardizing their compliance with the secure exam Policy and practices. There have been several instances in the last several years where students have walked out of an exam with secure exam materials and answer sheet and have taken them home without being aware they still have the materials. This has happened twice in the last 6 months. Having it standardized would help establish a set routine in a high percentage of classes and students who can often be on auto-pilot (and disoriented) at the end of an exam, can exit without making this mistake. A key point that Dr. Woods is trying to highlight is that course managers know the steps that are required to help course directors ensure that a room is reserved, answer keys are available, and caution is taken to assure the exam materials are secure. Course managers are directed to assist with the debrief sessions.

Comments and questions included the following:

- Courses ending immediately before another Medical School class begins will make arrangements to hold their exam debrief session at a time other than immediately following completion of the of the exam period but should have similar procedures designed along the same lines.
- Students have commented that when leaving a 3-hr exam and attending a review session, they are exhausted and are not functioning very well.
- It was noted that review sessions require a lot of management and it's best to make use of the course managers' assistance in providing for areas they can manage. Students are definitely not at their best but a lot of teaching takes place in the sessions, with students motivated to understand where they were deficient and where they had a strong performance.

Upon a motion duly made and seconded, support for the nonbinding, standardized process for Secure Exam Debrief Procedures: Years 1 and 2 passed with no changes or objections.

## **Minutes**

Minutes for SFC Meeting, November 1, 2013 were approved with no changes or additions. Dr Katz does review and edit minutes before they are review by Committee members; members are encouraged to provide input. The minutes provide a record of areas discussed, actions taken and topics that should be reconsidered.

## **Announcements**

### Human Disease 4

Dr. Heather Thompson is the new course director HD4, she is working closely with Dr. Anne Blaise in the process to finalize her role in directing the course. She practices in Internal Medicine and has been on faculty for 10 years. She has been involved a great deal of teaching, most of it at the residency level, with some involvement in UME through ECM. Dr. Watson added that Dr. Thompson's expertise will combine two specialities in gastroenterology, hematology, and oncology. Her work with Dr. Blaes will assure continuity that has been present in the course. She is working with Dr. James Armstrong in Internal Medicine will add the perspective of a generalist who can work across specialists and aid in integrating the course.

### LCME

Dr. Kathleen Watson provided an update on progress to date on our responses to the citations that resulted from the 2012 LCME site visit.

- 1) We are out of compliance with MS-24 Student Indebtedness which grew last year, UMF/MMF funds did grow last year but not enough to impact at an acceptable level
- 2) MS-31 a. has been addressed with Learning Environment Rounds at all major affiliated clinical teaching sites in the Twin Cities, with the goal to complete the same evaluation of teaching sites in the Duluth area.
- 3) ED-30 we are non-compliant with late grades, after making great improvement, we are 95% compliant, but will be continue to non-compliant for very few remaining late grades.

There are many reasons grades are late; primarily the system for identifying late grade reporting works very well for the 6 week clerkships. It was recently recognized that the system doesn't pick up the 4 week late grades. The notifications were not going out, although the clerkship administrators would know grades haven't been submitted. MS-31a. Actions to review our Learning Environment through clinical rounds has been very well received at the teaching sites, feedback indicates there is great appreciation for cooperation /collaboration that has taken place during the visits.

## Annual Course Review

### Pharmacology

Dr. Kevin Wickman provided an introduction to the Pharmacology course, which takes place during the summer for Year 1 students. There are 21 lectures, 2 review sessions, 3 assessments; the final exam, a mid-term quiz and writing assignment. In terms of the structure of the course there are two main parts; first segment is about the

principles of pharmacology and the second portion is teaching about drugs and details of application, etc. Everyone passed this course; two initially didn't achieve 70% on the exam and were remediated by taking a shelf exam as a retake and did pass. Dr. Katz reiterated that students are required to achieve 70% of the total points for a course and also must achieve no less than 70% of the total final exam points to pass a course. Less than 70% in points on the course cumulative points requires retaking the course, less than 70% on the exam allows students to retest and pass the course. Students can earn Honors in the Pharm course; this year 25% of the class earned Honors and the criteria will be reviewed before the session in Summer of 2014. Student feedback ratings are at 4.0 to 4.5 on a 5 point scale overall and specifically on the statement "I've achieved a basic understanding of the course objectives".

Areas where the course is working well include organization of the content, an introduction provides basic information for how the course will flow, documents resources they will use and there is a tabulation of all drugs that will be covered in a spreadsheet. This allows students to begin preparing for that portion of the course immediately at the beginning of the course. Brian Woods, the course manager was very effective in helping to organize everything on Black Bag, was greatly appreciated by students.

Currently there is a group of 5 lecturers who have taught in this course for seven years, there isn't a great deal of interaction between them throughout the year; through online, email and other electronic interactions, Dr. Wickman feels they are achieving integration of content. Lecturers are well received and feedback is positive. Resources are generally well rated both hard copy and the online version. The PowerPoint slides, some supplemental information (online and in hard copy versions) students appreciate have several versions to choose from for preparation and study. The biggest concern is the mid-term quiz, the last two years there have been significant problems during the exam. The first year it was given on-line, students were given a set of criteria for taking the online exam and there were reported occurrences of dishonesty. In the second year the course was given in class, with standard secure exam format. Once again there was a clear violation of the secure exam policy, it was unintentional but caused a problem. This particular quiz is a gauge for the students to know where they are at before having to take the final exam. How to use the mid-term to the best advantage for students is being reconsidered and it may become an on-line collaborative activity for students to work on together. This change would have an effect on how Honors are determined. The theme taken from the student evaluations has been their comments on the level of memorization required to pass this course, which is understandable but disappointing. The goal in the next two years is to place a greater emphasis on the principles of pharmacology. The assessment will need to be changed to move the focus to the principles. There will also be transitions over the next year to accommodate the loss of one of the five lecturers and over a three year period two more of the current faculty will leave. It will be important to begin planning for transitions to those who can teach the topic. Currently there are unique lecturers who teach this course and during the upcoming sessions it will be important to have protégés attending sessions so they will begin to understand what they will need to cover. Shrinking the number of faculty allows for restructuring and hopefully at some point there will be two faculty one to teach all of the principles and Dr. Wickman would teach all of the drug related lectures. One other focus for change is to respond to student requests for more formative assessments, Dr. Wickman is working on a sample exam question bank that students can use for self-assessment, a very an important tool for students.

For the session in summer of 2014 the mid-term exam is being reconsidered. For the written assignment, a 1-page assignment where students have to report on several categories for the drug they select to research. It's a very labor intensive for both students and Dr. Wickman. It isn't possible to give a thorough feedback to every student to make it a valuable assignment. He is considering changing the assignment to another on-line formative quiz throughout the course.

#### Discussion:

- For the course there are topics covered that seem to be minutia, but then question are included at the Board level exam.
- A question for the Pharmacology course is where students should learn some of the information they

memorize, should it be covered in the first year. Student feedback for memorization is positive and they found it to be acceptable.

- Student feedback also supports keeping the mid-term as an in-class exam.
- There is interest from students in making changes to the written assignment and an on-line assessment is a good idea, it provides an opportunity to experience what testing will be like for the final exam. Exam style rather than open book, motivates students to learn the material rather than just be familiar with where to find the information in resource material.
- It may be unrealistic to think students will retain all they learn in the first experience, but it makes it easier to go back and study it the 2<sup>nd</sup> time & 3<sup>rd</sup> time as part of the whole learning experience in medicine as an apprenticeship process.
- There are still drugs in the Board exam that are no longer relevant to what is practiced. In a recent recertification for the specialty Boards there is still a fair amount of detail (minutia) and though recertification wasn't as challenging as Boards the first time, there was still a lot of detail regarding drugs, on-going side effects, and newly documented side effects.

## **Discussion**

### Milestone II Exam

Dr. Jeff Chipman reiterated a goal set by Dr. Katz as Chair, which will establish a working component within the monthly SFC meetings to advance the process of integration. All course directors and co-course directors are members; it's the one consistent place and time the group comes together. The proposal for exam is integration, which is the reason for working on it as a Committee. It affects a good deal of the teaching and courses. In the medical school we have had milestone achievement as part of the new curriculum, but an integrated cumulative progress to date has not been very well developed. This is a proposal in the effort to integrate the curriculum to create integrated assessments and to have some sort of cumulative milestone at the end of the second year and this proposal is a first effort toward that development. The plan is to determine if it works, look at the reliability of the exam and long range look at its validity. The Milestone measures progress toward the clinical years, ability to perform history and physical, recognition of physical findings and signs, correlation of the symptoms to the physical findings, basic treatment plans, assess organization, the ability to put all of the information together and their differential diagnosis. Having dealt with residents who are very smart on paper but have trouble integrating their medical knowledge to develop a treatment plan and realizing that there is nothing in the dean's letter or the application that really identifies that skill deficit. This is an opportunity to help ameliorate this situation in those graduating and moving on to residency. Lastly this is an attempt to utilize the Medical School's supported simulation center SimPortal. As the Medical School this facility is used on an occasional basis for medical students but not broadly across course. Exam would be administered in March/April in Year-2.

The exam will touch Human Disease I, Anatomy, Physiology, Physical Exam, Process of Care, etc. There are two scenarios; students will be randomized to one of the two scenarios. Each of the exams will take 20 to 30 minutes to complete and equals about 170 hr. of SimPortal time. The exams are simulated cases that have been found on the MedEd Portal, they were developed at Harvard and they're pulmonary based, a shunt from a severe pneumonia and the other a tension pneumothorax. These will be held in SimPortal, use of the SimMan, there will be some scenario background. Students have to take a history and perform a physical exam, and the human patient simulators pretty good at identifying these problems with symptom. The student has to request some vital sign monitoring, and they have to identify some tachycardia. From this information they have to develop a plan, identify the process, create a rudimentary treatment plan to stabilize and then identify improvement or deterioration.

The proposal also adds a rating tool to the process; it will be based on the literature using check boxes for whether they did or did not perform the necessary step and a global assessment for how well they did them. Dr. Chipman posed two questions for SFC members to think about; 1) are these questions appropriate for an MS-2 at the end of the 2<sup>nd</sup> year, 2) should they be able to elicit a history and physical, should they be able to perform a physical exam, should they recognize the need to request vital signs, should they be able to identify tachycardia, should they recognize the need to provide oxygen supplementation, should they be able to recognize improvement in the oxygen saturations with

supplemental oxygen, should they be able to recognize deterioration with these findings (increased tachycardia) how much should they be able to react to those deteriorating vital signs and how much of a treatment plan should they be able to develop.

Feedback from faculty,

- Yes, complete a history and physical
- Tension pneumothorax is mentioned and that it must be decompressed is taught but using a needle or chest tube to treat isn't covered.
- HD2 is focused on diagnostics; on the treatment side it's more principle based instead of details. Conceptually they know to decompress, but they won't know the technical steps to decompression.
- In HD2 there are 2 different frameworks happening; when it comes to diagnostic, management, etc., in the teaching history, physical and diagnosis precedes the action plan. In trauma week diagnosis and management are happening in rapid cycle, all at the same time. Students are very aware of the difference in the flow of the two scenarios. She asked if there might be a) a case that is more out-patient oriented pneumonia, not as urgent; or b) have the "worst first" in a more urgent setting, pickup on deterioration & interpretation and quickly moves to management without delay.
- Dr. Chipman responded it is more an ability to actually talk to someone; it's a pneumothorax not a crisis. There will be background provided so students can understand at what level the patient is being assessed.
- The pneumonia case and shunt really dovetails with what is taught in HD1; a lot of emphasis on understanding giving supplemental oxygen, they should be able to interpret what happens when oxygen is given and what it means. On the physical exam they should be able to do it; not an easy task for all, some will be better than others.
- A major consideration is for them to realize that they can take charge of a case by asking for vital sign monitoring. The context will be very new to them and somewhat confusing. They will need prepping in the background portion of the scenario.

Dr. Chapman made an observation that the discussion between the course directors is very integrated and across disciplines. Dr. Thompson asked if the students will have had any of the simulation experience before this testing process. He responded that this will be done in Duluth with students who have completed the HD1 equivalent in Duluth which includes simulation experience with the human patient simulator equipment on that campus. There will be a comparison between the Duluth student and the TC campus to see if there is an added advantage to using the simulation across courses in Year 1 and 2. The assessments will be done by SimPortal in Duluth, so the TC SimPortal Center staff will go to Duluth to evaluate the students. This will provide consistency in the assessment and evaluation of skills between those with simulation experience and those without this experience. The Simon will respond to questions and the operator. In Pathology students are getting some Simon experience in a pilot being run in that course. In Anatomy students are taught about the two layers of pleura and this should fit well with the areas being tested.

What is the timing for giving the exam from the perspective of the student and their course load? Do they need study time for this test or is it just to determine progress in these areas at this point in the curriculum. There will be an emphasis on the secure exam policy to help contain the information flow between segments taking the exam over a 2-week period. There will be two scenarios; it will be important for them to understand this is cumulative knowledge from the integration of their courses and it's a gauge of their skills, rather than a written test with 1 correct answer. In ECM 1 there is the hypothesis driven diagnosis exam, with answers to questions provided by the standardized patient; from that information they determine a diagnosis. It seems to be a preliminary to this more hands on assessment. They are told ahead of time what organ system is involved and students do well. Dr. Chipman noted this is an integration of ECM, HD1, Anatomy and across courses in the first two years. Dr. Satin asked where the disparities might fit in to the scenarios. What are the stakes? First year will be a look at the reliability of the exam, between campuses, ratings and SimPortal. Based upon the trial and error there shouldn't be a grading consequence in the pilot experiences. Dr. Southern noted that it is important to inform them that

they are “uniquely responsible for developing an immediate diagnosis and treatment plan for the patient”. Dr. Niewoehner asked about standardizing the raters so there is consistency in the scores. There will be 12 students per hour, they can sign up randomly for a test time, there will be a scripted scenario setting so all students receive the same information in preparation for the exam. There will be intensive training of the SimPortal staff to help standardize the testing scores. There have been other studies of this type for other grants and sets of individuals. As time passes other organ systems will be part of the assessment process. The Faculty Consultant Committee in discussion with the Dean about the lack of clinical sites and preceptors, he reported that simulation can be part of the solution. It is suggested that an orientation session be done as a class prior to the testing period, so all hear a semblance of the same scenario at the same time and have a chance to ask questions from a student perspective, having had little clinical exposure. Exposure to the SimPortal before hand will be very critical for most students, videos of what it should look like when they are working in that setting. There is a great need for a debrief and feedback after the exam and this is built into the session.

Dr. Rosenberg pointed out that SimPortal is heavily supported by the Medical School but underutilized in UME. He reported one major question is whether they have the capacity to test the entire class; this will be a good test of that functionality. Simulation is a key to future teaching and learning. Dr. Chipman gave examples of simulation practices across the country and our School hasn't benefited from this national trend. How close are the respiratory cases to the content, is the retention of the previous semester courses going to be a factor 6 months later? Duluth students will be a helpful indicator when the comparison is final with regard to their learning experience as opposed to those of the TC students without the simulation experience. This is part of the purpose of integration and teaching and assessing has to be present across the curriculum, taking this step is a way to determine where we are in getting this done. Students must recognize they have to see learning as an integration of all areas of medicine. There is the difficulty of combining the “what you are learning with the “why” you are learning it” and getting the students motivated to understand the two together. It may be that the combination of the check boxes and the global ratings together get at some of that information. During pulmonary simulations, the residents are required to verbalize every step of their examination, testing, diagnosis and treatment plan while in simulation. This is encouraged in the IERC activities that students are currently involved in Yr-1 & 2. They should be told to dress like a doctor and bring a stethoscope. There is a wide variation in how student approach, are interested in and react to learning experiences. Dr. Chipman asked for feedback and suggestions for other learning experiences/ simulations.

### **Next Meeting, January 10, 2014**