



Special CUMED 4/19/2018

PBL Standardization

Meeting was called to order at 12:03 pm

Attended: R. Christensen, K. Diebel, P. Fernandez-Funez, A. Greminger, R. Heuer, N. Jauss, K. Nordgren, J. Pearson, A. Shaw, M. Statz, G. Trachte

Absent: J. Boulger, R. Harden, A. Johns, R. Michaels, E. Onello, G. Simmons

Dr. Diebel summarize the CUMED meeting of April 10th that members were in favor of standardizing PBL groups to 9 and to enhance the introduction to the PBL process across courses.

- The **objective** for this special CUMED meeting is to continue the discussion of standardizing the PBL process:
 - PBL Group Size (9 groups).
 - PBL Introductions
 - Learning Objectives/Dissemination
 - Content Expert & Facilitator
 - PBL Assessment
 - PBL Wrap-up
 - Linking the process
- Recently, Dr. Diebel met with Dr. Lynne Bemis, BioMedical Department Head, regarding a requirement of having BioMed faculty sign up for an “x” number of PBL cases throughout the year to insure coverage. The discussion included:
 - BMS faculty buy in to this process.
 - What requirement is needed to be a facilitator?
 - Can facilitators include Post Docs or another method?
 - Facilitator training is required for faculty who have had little to no experience with the PBL process.

PBL Case Content:

Dr. Trachte indicated the need to discuss and address a curriculum decision on determining what diseases should be presented in PBL cases. What should be emphasized in PBL case content? Should students be given cases that are relevant to what they will see in clinic of uncommon diagnoses?

- Dr. Nordgren asked if PBL cases always need to be common disorders or diseases? The fundamental concepts and knowledge from a case are the importance of what is used in practice vs. common diseases. There may be other cases that highlights key concepts that cannot be taught as well through lecture and may not be a common disease.
- Dr. Trachte indicated if we want to deliver cases that are uncommon in clinic, that is fine, however, there needs to be a discussion about case types in PBL. The biggest criticisms in medical education by a physician or medical students is we teach a lot of uncommon medicine that they do not see or use. We need to be emphasizing relevant cases.
- Dr. Nordgren indicated this may be the discrepancy on how PBL cases are delivered across courses. Some courses use the common cases and others use the cases to teach fundamental concepts and knowledge.

- Dr. Diebel identified usher's syndrome as a rare condition, the idea of using this case is it reinforced and teach primary information on hearing and vision. This PBL case emphasized multiple fundamental concepts and knowledge while defining a disease.
- Dr. Christensen asked what differentiates a NP, PA and MD in the job market? Listening to RPAP students and seeing them bring in what were supposed to be simple cases had threads to difficult and uncommon diagnoses. As we reflect on what RPAP student and practice, we need to teach inquiry. The case diagnosis may not be what matters but giving students the tools to look deeper and the inquiry needed to look deeper. What makes an MD student stand out in our world? Picking out the outliers and going further into the care of a patient is what a community relies on.
- Dr. Fernandez-Funez sees commonalities in varied diseases but the way students work a case, i.e. anatomy of the ear, eye, pathology, histology etc. is how student approach the case and healing. The title of a case is about a student's ability to focus on the fundamentals and concepts from a basic science point of view.
- Dr. Trachte point is if a presented case is given and only 500 people in the world have, is that still OK to use the case.
- Dr. Nordgren questioned if PBL is teaching basic science concept or specific cases?
- Dr. Trachte asked if the PBL cases are to be taught in a meaning and relevant way? The question is if we should be doing diseases that are more relevant.
- Dr. Fernandez-Funez indicated PBL cases are about the process. Students are informed the importance is the process of asking the right questions. His experience with the students is they work hard on their concept mapping. If a rare disease can pull the concepts together it should be OK to use.
- Dr. Nordgren asked if the cases should be more high yield concepts. Dr. Trachte indicated if a case is more meaningful to clinical practice, students will be more driven to learn the concepts.
- Dr. Diebel stated a case rational is not about the diagnosis in the case but the facts the defect involved in the disease presentation causes many issues that bring meaningful foundational science together in a curriculum. Rare diseases capture multiple basic science concepts.
- Dr. Greminger has renal cases that are a less common diagnosis but the process brings together the common causes of renal failure, i.e. diabetes, hypertension. As an MD student they will need to go beyond the initial diagnosis in practice to remember the "other" pieces. Dr. Greminger indicated the case objectives are the most important.
- Dr. Fernandez-Funez said when we have a curriculum crisis, we deal with it and move forward and not think about them again. Going forward we need some agreement on a case process. The group needs to be proactive by reviewing cases and making appropriate changes for the desired outcomes (objectives, mechanisms, mapping etc.).
- Dr. Greminger indicated PBL cases are not the only active learning method. PBL is time intensive.
- Dr. Pearson agrees PBL is time intensive. Is it worth the number of student hours? Can we combine some of the extrapolations into other work throughout a course, i.e. in HRM is not just the diagnosis but the process leading to the clinical aspects. From a student perspective, we need to justify the time they are spending on a case.
- Dr. Diebel indicates there are two view points; teaching the most common (simple) diseases students will see in clinic or a more complex disease were students need to go broad, although a rare disease, can touch on many foundational science concepts. Students need guidance to go down complex avenues. There is room for both types of cases in PBL but as student's transition, we need to be able to tie foundational science concepts in a rare case. Again, it's about teaching students all the accessory things associated with a case.
- Dr. Pearson indicated if we guide the PBL learning into recognizing ways we can extrapolate that in different ways, students can get more out of a case.
- Dr. Greminger stated we need to be cognitive of how we teach comprehensive differential diagnosis. What is the most effective guidance? PBL is a great place to teach students the differential diagnoses in general.

- Dr. Diebel agrees the PBL content is important and should be better defined. The process of case content and delivery of PBL is a continual effort. If we can agree on well-defined standards to the PBL process, recommendations across case content can be better defined:
 - What PBL content has/is covered?
 - How and when is the PBL case covered?
 - What PBL cases have done well?
 - What PBL cases need work among authors/courses?
 - What PBL cases should be developed?

PBL FACULTY LEARNING OBJECTIVES:

- Dr. Nordgren would like to address faculty learning objectives.
 - How are faculty PBL learning objective handled across courses?
 - What faculty has access to PBL learning objectives?
 - When should PBL learning objectives be disseminated to students?
- Dr. Diebel asked if there should be two sets of PBL learning objectives: faculty learning objectives and student learning objective?
- Dr. Trachte indicated student directed learning *without* some direction will have a negative impact. Faculty objectives give student scaffolding, or what they are expected to learn. After a number of cases, students automatically become good at determining the direction of a case and what we expect. Students in a clinical setting will emphasize to the clinical side. We are asking students for the foundational science concept that leads to the clinical diagnosis.
- Dr. Diebel indicated courses have learning objectives as to what will be completed. In lieu of the faculty case objectives, every group gets an immediate review (at the end of the second case session) by a content expert to hear the student's justification of their mechanism. During a case wrap-up session, the whole class would be provided with narrative feedback, provide practice of core concepts with practice questions moving forward. This would replace a bullet point of faculty objectives. This may help with inconsistencies across courses.
- Dr. Fernandez-Funez indicated students will do their work. The learning objectives drive student questions. If we are thinking of not providing faculty objectives, we need to do this as a trial introduction for a case and assess the outcome.
- Dr. Nordgren indicated the concern and frustration with students is the scaffold process to student learning. Why are we providing students the scaffold after they built the mechanism? Students spend hours researching information only to find out they were *not* focusing on the correct area. Can a scaffold be broken up into chunks which allow students to ask their own questions to then see what the faculty learning objectives are and compare what they through was important in a case. Students could then focus their study on what we're are going to be assessing them on.
- Dr. Trachte indicated the literature on PBL states students will never develop the process to look things up on their own. Students need to go through the frustration of going down a wrong path and then correcting for it. After a few cases, students become very good at going through a case. The PBL process provides student experiences to look up any disease. Students practice and acquire the skills of fundamental science concept mapping necessary for a disease. If you take the student directed learning away, students won't develop the skill on their own.
- Dr. Nordgren wonders if having the faculty objectives at the end of a PBL session removes the experience of students searching through information? Do we want students to stumble across information? Dr. Trachte indicated students won't know what or how to look up correct information without some guidance. The PBL activity helps students

become independent learners. We all go down the wrong avenues searching for data and in this process, we learn more. Students pick up on other information as they search for answers to the case.

- Dr. Trachte adds there is literature on PBL advantages and disadvantages. The process is 60 years old and most of the trial and error of PBL activities has been done. We need to review those studies and aware of them if PBL will change.

Assessing PBL:

- Dr. Greminger has a concern on the disconnect from the assessment and the actual process of PBL. Independent learning is a great skill. We are asking students to show us mechanisms and we test them on a focused subset of things. Are we actually assessing students on what we are asking them to do in PBL cases? We ask students to think about the why, how and show us a beautiful mechanism but what is being assessed on is a narrow range of things. We need to find a better way to assess students using this process. Having practice questions are important as a guide but does not award the curiosity of the why, how and what they did.
- Dr. Trachte, as Course Director, stated students do better on PBL assessments than most lecture assessments. Students may not perceive that but the statistics show different. We need to improve our assessment questions and is not just a PBL problem.
- Dr. Fernandez-Funez indicates the style and type of questions is key. Dr. Greminger indicated in the Science and Engineering Department, students are given a project which is graded against the project. Students receive feedback on the project itself. Students are not tested separately from the project, this is its own process. This would create a lot of time for faculty, however, students are willing to do a lot on the project because that is what is being graded. If we are asking students to do a lot of work with mechanisms is there a way to assess the mechanism separate from lecture assessments? This type of assessment method identifies a bigger value to the time students spend on PBL cases.
- Dr. Fernandez-Funez does assign a PBL case students work on individually that requires a pass. The problem with a team PBL is creating equality across the group. Dr. Diebel indicated students can assess themselves as well as facilitators can monitor individual student effort. Dr. Fitzakerley has done this in her PBL groups.
- Rachel Heuer, MS I, has not heard of complaints by students in the assessment of PBLs. Common frustrations were the PBL learning objectives. Some groups spent a lot of time in one area and they later find out it was not even a learning objective. Groups have also missed an issue and the facilitator may or may not catch it as the group tries to move forward. Students understand the concept of doing the research and drawing the mechanisms. We learn from the process. Exam questions seem easier when its related to a PBL case. Rachel suggested to have a broad detailed list of areas that should be focused on; i.e. if MRI is involved, having a list of “x” areas to focus on to help direct learning.
- Dr. Diebel indicated the learning and assessment objectives should be linked. Objectives have been the driving force to student friction. If learning objectives are not explicit followed by a specific multiple-choice question and students may feel faculty did not give you enough guidance, even if you spend multiple hours on a topic and missed the question.
- Dr. Fernandez-Funez likes separating the discussion on student frustrations and the purpose of PBL activity. Faculty are aware students will become frustrated from time to time. Students learn in different ways. When we hear students are having difficult time researching, students find their weaknesses. The purpose of a facilitator is to pay attention to the group and help guide them through the process. This area needs to be better emphasized. Learning objectives may not be as important if a facilitator has clear expectations of guiding student learning in PBL.
- Dr. Pearson questioned if we would disrupt the process of a facilitator if we tell a group they missed a part of the case? The purest PBL would say we can't do student guidance but the PBL should be guiding students.

- Dr. Trachte trained in PBL at the University of New Mexico. The unguided PBL is good when PBL is the whole curriculum. Students become very good at mechanisms when that is all they do. Flipping between lecture and PBL will cause more confusion for students, therefore, guidance is needed. As PBL cases increase, facilitation can back off because the students become accustomed to what is expected. The University of New Mexico does not have exams. The National Board of Medical Examiner Step 1 scores were lower because of no exams. Their students did well when they reached their clinical years because that is what was emphasized in their cases.
- Dr. Greminger would like some PBL cases designated to give students credit or could be an assessment on its own. This would help show students we take their hours spent on PBL's seriously.
- Dr. Trachte mentioned the last visit by Dean Tolar seen a student mechanism. Dean Tolar took photos of the mechanism and was ecstatic to see the phenomenal work of our students. Dr. Skildum Tweets his student's mechanisms, showing the amazing work being done.

➤ **Summary:**

- Dr. Diebel summarized the conversation as members likes:
 1. The current PBL process of *learning objectives* coming after the second case
 2. Testing is on multiple choice examination (smoothing the process by better learning and test questions).
 3. A need for facilitator training to provide consistency.
 4. Piloting a PBL case by using alternative processes and compare with the current PBL process.
- Dr. Nordgren indicated there has already been discussions on the use of other methods to present some the PBL case concepts in the CRRAB course. The current plan in CRRAB is taking two PBL cases and turning them into a TBL to reduce the burden of time. There would be a metric to collect data to compare case delivery. This is still a work in process.
- Dr. Nordgren indicated she has been collecting data on paper vs. electronic learning. The two metrics being considered is student perception of learning and performance on assessments. This include basic science content and highlight whether or not in the control or treated group you have a noticeable difference of mastery of content. Just as much as learning or the retention of the material, the student experience plays a big role in that. Students may not have different access to recourses, however, if a group of students is frustrated with the process in what we ask them to learn, they may or may not have an impact on their actual learning. There is three years of controlled and electronic group. You can have quantitative and qualitative results. It's about the questions being asked. The three years of findings has not been fully analyzed yet.
- Dr. Fernandez-Funez indicated the last PBL case in Neuro is designed simpler. He would be willing to try a different process with that case.

Discussion: PBL Styles of Learning:

- Dr. Greminger added that not all PBL cases should be ruled out. The PBL cases cover very important concepts that are difficult to teach in other ways. The goal in exploring other case (or active learning methods) is to reduce the burnout with diversifying our portfolio of active learning.
- Dr. Shaw indicated she has not been a part of the PBL processes. She is aware of the frustrations brought up by students a number of times regarding the variations of PBL formats. Adding in trial PBL methods will increase this diversity and confusion among students. What should happen is an agreed type of PBL throughout the two years. If trials are being included, students need to be aware of the change. Drs. Nordgren and Greminger agree PBL needs consistency while here and if we try a new method.

- Dr. Nordgren indicated the trial models would be best to give to the groups that has been through the standard PBL process. Conversations with these groups on previous and trial experiences would then occur. We need to be explicate to the groups on the model, when it will occur, what is different, would not call the model PBL.
 - Dr. Fernandez-Funez stated we get hung up on historical complaints. There have been positive changes in PBL over the last few years with increased faculty, consistency of facilitators and the learning from each other. We approach active learning in a more focused way now by review of PBL outcomes, make modifications that enhance cases, etc.
 - Dr. Nordgren stated trial models is another conversation for the CUMED group. The objectives are how we will be testing new methods before we standardize the existing process.
 - Dr. Greminger asked if the current PBL model will occur across all courses? Are the different Course Directors going to have a different spin on PBL? There is agreement of members the PBL standardization across courses is improving.
 - Dr. Diebel indicated PBL is more consistent across courses. There are inconsistencies within the courses that use PBL that need to be addressed.
 - Dr. Diebel wants Course Directors to decide on the process and what it is they want their facilitators to look like. The facilitator training would be based on that agreement.
 - Dr. Nordgren asked if there should be consistency with the learning objectives and how they look between courses; i.e. how many objectives, objective consistency, what disciplines are touched on, how many test questions, how will these be assessed, etc.
 - Dr. Nordgren indicates in CRRAB, students exams have a large component based on PBL, then in Neuro students only have a few questions based on PBL. This sets up a disparity in how we value PBL between courses.
 - Dr. Trachte indicated he would have removed all lectures in CRRAB if he could and replace them with PBL. Dr. Greminger indicated there are PBL cases that lend themselves to a more robust pathology, histology, pathophysiology and there are cases that do not lend themselves as well. This is the challenge of cases; i.e. the heart cases are more likely to produce a microbiology, pathology, histology and then there are some cases that are less likely to produce that. Dr. Trachte indicated microbiology was the tough one.
- To standardize PBL objectives and questions, Dr. Diebel recommends Course Directors work as a team to refresh and revamp cases over the summer. By purposely working together standardize cases will occur across courses. Dr. Trachte agrees summer is a good time to standardize cases.

PBL Standardization Workshop:

- Dr. Greminger indicated if we are asking faculty to re-write objectives, they all need to be at the workshop. This includes clinical faculty. Dr. Diebel indicated *not* every objective needs to be rewritten. As a smaller group, we can identify how we want the learning objectives to look. The objectives that are problematic can be handled by a Course Director to reach out to the clinical faculty.
- Dr. Trachte indicated when we see the cases together, it can be challenging to decipher if an objective is similar.
- Dr. Fernandez-Funez indicated there is a significant amount of contribution to make cases similar.
- Dr. Statz acknowledged she is new to the PBL concept and is thinking of ways to integrate behavioral material. Dr. Greminger feels the faculty in BioBehavioral would make great facilitators.
- Dr. Fernandez-Funez stated facilitators are on a voluntary basis. In the Neuro PBL cases, students would benefit by having behavioral faculty facilitating. The National Board of Medical Examiners Step 1 combines the behavioral and neuro content. Dr. Trachte indicated there has been resistance by the BioBehavioral Chair in the

past. Dr. Statz indicated she is very agreeable to incorporate behavioral content and willing to sit in on cases that ensue. Dr. Statz requested the possibility of her connecting remotely for the summer workshops.

- Dr. Nordgren would like clarification on who should be the facilitators? As Course Director for CRRAB I, she did not facilitate a group because of the work to get everything set for the case. Students have a perception that if you have the Course Director as a facilitator, that group receives a better experience on the case.
- Dr. Fernandez-Funez adds content experts are important to key points of a PBL case.
- Dr. Diebel performed stats in the Neuro PBL cases over the last two years. The Content expert and Course Director did not provide a case boost to student. Content experts sometimes added a little more when they facilitated.

PBL Facilitating with 9 Groups:

- Dr. Fernandez-Funez would like faculty to sign up for a chunk of cases in a course. Dr. Nordgren echoed this. Having the same faculty do a few cases in a row allows them to get to know the students and vs. versa. When faculty sporadically facilitate throughout the year and across multiple courses does not lend to positive outcomes.
 - As Course Director, Dr. Trachte facilitated groups and they performed fine but not always the highest performing group. The group configuration has improved over the past few years. The distribution of academic ability has provided some equally across groups.
 - Dr. Trachte indicated graduate and post doc students need teaching experience and it makes them more marketable. There can be ways to make PBL attractive to them. Making PBL attractive to internal faculty is a challenge. Senior faculty have gone to Department Heads saying they do not feel very involved in the curriculum. This is a topic to be revisited.
 - Dr. Shaw would like faculty to follow an experienced facilitator. Dr. Nordgren indicated there is a difference with some senior faculty wanting to be involved and those who do not. Dr. Shaw adds that some senior faculty may be intimidated by any type of active learning. She just helped a senior faculty go through an active learning session and was excited with the experience. A shadowing experience may eliminate their anxieties.
 - Dr. Statz adds an additional resource is tapping into the MDT faculty. Without details, there may be a requirement for them to do some teaching in the future.
 - A mini active learning seminar in a Town Meeting may open up faculty shadowing/participation. Dr. Pearson indicated active learning needs to be packaged as a win-win. Begin by acknowledging faculty demands (teaching, publications, research, clinic). Followed by the support from the Regional Dean. Dr. Fernandez-Funez reminded members of the junior faculty pressures to get ROIs. There could be a mini One-Button presentation.
 - Dr. Diebel reiterated, years down the road, there will be more junior faculty and retirement. If all junior faculty have protected time we will not have enough faculty to sustain PBL. Dr. Trachte indicated in other institutions, the more senior faculty (as they progress through their career) have taken on more teaching and committee obligations. At this time, our current senior faculty feel disconnected.
- With facilitator training, all faculty will need to adhere to the training and respect the process of PBL, which requires self-restraint.
 - Dr. Diebel will work with Administrators to see what can be done regarding faculty participation. Dr. Fernandez-Funez adds this request will need the Regional Dean's input with regards to faculty contracts. As part of the school and culture we need assistance moving forward. This may a mandate or additional dollars to pay for outside facilitators.
 - For CUMED, we will need to come to a consensus on the process of assigning co-facilitators to help elevate the main group facilitators.

- For academic year 18-19, emeritus faculty could be an option to help fill facilitator needs. Dr. Trachte supports the use of emeritus faculty to fill this need. Drs. Elliott, Heller, Hovland, Hoffman, Morhman, Prohaska are already familiar with PBL and have had some training. It would be beneficial to have a colleague reach out to them and ask of a willingness to participate.
- Emeritus faculty may be a contract reimbursement or as a clinical faculty reimbursement. This is not known at this time. For budgeting, Course Directors would need to take this into consideration. Dr. Trachte indicates we have a number of outside faculty that volunteer.
- Course Budgets for AY2018-19 is in full swing. If a Course Director is aware of increased financial need for next year, they should submit their requests to the Assistant Dean for Curriculum by mid-June.
- Dr. Diebel indicated the *downside* is it seems to undermines the idea of having a new facilitator training and everyone on board.
- Moving forward, how long will emeritus fill in for faculty that we have whom are unwilling to participate? We have the faculty; how do we get them engaged?
- Dr. Nordgren indicated there will need to be a requirement of the faculty. Dr. Trachte indicated this is an Administrative decision and not CUMED. CUMED can advocate for more faculty involvement.
- Dr. Fernandez-Funez states the Tenure faculty have restrictions on teaching hours. Dr. Greminger adds PBL is a different type of learning activity. If a faculty has a requirement to do 20 hours of teaching a year, is it fair to say PBL for the next 4-weeks and you're done. The preparation for PBL is very different than lecture.
- In the Tenure Track contract, how should PBL be viewed?
 - Dr. Fernandez-Funez indicates PBL is not listed in the contract. If PBL is going to be introduced in the contract, the group will need recommend equivalencies; i.e. how many hours of lecture is equivalent to "x" hours of PBL. Dr. Nordgren indicated PBL is easier than lecture.
 - Dr. Pearson indicated this is opening Pandora's box. She teaches multiple ways that require different energies. Once we open up this conversation you must strategize which gets difficult. Dr. Trachte indicated Dr. Regal tried to do this through Faculty Affairs. Clinical hours are counting as 1 hour of prep, lecture hours were counting as 8 hours. This did not go over well with faculty. Dr. Fernandez-Funez indicated we do not need to do an equivalency, we can keep the 5-20-hour progression then indicate they need to do "x" cases of PBL. We are not trying to do an equivalency. Dr. Diebel indicated PBL is not sustainable unless Tenure Track faculty get a pass.
- Dr. Nordgren indicated if we do run out of facilitators, someone will need to have the authority that PBL is required of every person which brings this back to the Regional Dean.
- Dr. Shaw indicated faculty schedules prohibit them from participating in full course PBL. If there was flexibility to co-facilitate, it may open up more facultors to signing up. Dr. Trachte agrees there needs to be compromise, especially in the fall semester.
- Dr. Pearson adds it is ideal to have consistency with PBL cases, the reality is we need to marry co-facilitation.
- Dr. Fernandez-Funez experienced a need to quick substitute faculty for Neuro and IHO. Dr. Rose-Hellekant did a wonderful job and is gaining experience in PBL. Dr. Skildum filled in for a few cases in CRRAB were there were gaps. Dr. Scott participated in a few cases as well. Although these faculty were not available for the whole course, they provide a need when a gap occurred. Dr. Trachte mentioned Dr. Melvin (Dr. Bemis's lab) who trained in PBL at the same time as Dr. Skildum as Post Docs. Dr. Melvin is interested in facilitation. There will be a cost to use him but is a resource.
- Dr. Nordgren has 13 cases in CRRAB and consistency was the goal. When consistency was not an option (6 groups affected this past year), she was able to use the same two fill-in facilitators for these gaps. Students at least had familiar faces.

- Dr. Greminger stated clinical faculty have a difficult time based on clinic schedules.
 - Dr. Pearson said doctors work to their degree. Do PBL facilitators need to be a PhD? What is the minimal requirement? Dr. Trachte indicated *facilitators must be faculty or adequate training*.
 - Post Docs use requires them to have the PI's approval to release their time. Then they need facilitator training. Post Docs are paid off of a grant. PI's are not going to spend their grant money for Post Docs to be facilitators. This will require additional school funding to pay for their time. The draw back to this is the amount of facilitator turn over. Again, this is dependent of the PI releasing the Post Doc. The use of Post Docs does not seem sustainable.
 - Dr. Fernandez-Funez indicates the return on investment using non-faculty is unknown. Dr. Shaw reiterated we do not have the consistent faculty to have a sustainable PBL process. We consistently ask the current faculty to do more and this is taxing and exhausting our faculty.
- Dr. Diebel likes having co-facilitators (back-ups) for each group as a compromise. This does provide a level of consistency among students and to help with needed flexibility among faculty. To have co-facilitators, there will need to be another 18 faculty contributors to participate to see the groups through the *whole* curriculum.

Why Consider Facilitation of PBL vs. Lecture?

- PBL and lecture are not equal.
- Dr. Nordgren reiterated there needs to be a curriculum shift to other forms of active learning in addition to PBL. We need a diverse curriculum and students learn in different ways. PBL is time consuming for facilitators, however, this is twice the time for students and they do not have an option to pick or choose. Student are getting burned out and tired.
- How should we determine what amount of PBL should be in each course? Should there be further discussion about the best set-up of a course: i.e. "x" lecture, PBL, other active learning, ILT. Dr. Greminger indicated we need to know what the faculty would like to see within the curriculum before we make a recommendation.
- Dr. Trachte agrees we need faculty agreement. The bottom up approach to identify and solve ways to deliver the curriculum is better. Having agreement among ourselves on curriculum needs will show solidarity when presenting facilitator needs to the Regional Dean. Again, if faculty agree courses need "x" number of cases and not having the faculty compliment will either encourage a mandate or more financial support by the Regional Dean.
- Dr. Nordgren asked if there should be a cap on the number of PBL cases per course. Dr. Greminger questioned developing more PBL cases in our curriculum without adequate resources. It is irresponsible to keep developing a curriculum model that does not have the resources to sustain it.
- Dr. Pearson indicated we are outcome based. How many PBL cases do we need to have the same outcome? As we drive the curriculum, we need to have this balance were students get the benefit from this. There are intrinsic limitations and we need to balance these.
- Dr. Fernandez-Funez adds we need to continue in a direction to enhance curriculum even if it creates a crisis. We need to find a solution to the problem. The solution may be the argument we need more space, faculty, etc. Dr. Nordgren indicate we have enough faculty to deliver the current curriculum but only enough if every faculty is involved equally.
- Dr. Trachte indicated literature shows PBL cost has a break-even point of 70-100 students. This theory is based on lecture vs. a PBL curriculum. The issue with Duluth is there is a lot of redundancy doing both PBL and lecture on the same topics. This creates more time and expense. PBL would be more doable if the lecture was cut. If we cut a lecture that is delivered for a number of years, said faculty will need buy in to do PBL on the topic vs. "1" hour of lecture.

- Outcomes of our student should be the primary concern. If the group thinks there is a better outcome with PBL, we need to move forward. Logistically, PBL needs to be made attractive.
- Dr. Greminger indicated if the group wants to move forward with this process this fall semester, we need to approach faculty to encourage them to shadow in the IHO PBLs now.
- TC campus hires medical students to help out in their curriculum.
- Dr. Diebel indicated Regional Dean Termuhlen wants the group to explore all available options. We need to look at ways to engage faculty with the PBL process and prove that the efforts taken were not enough to meet the PBL need.
- There are University's that have PBL training.

Meeting adjourned at 2:01 pm. Next CUMED meeting: **Tuesday, May 8th @ 8 am (104 Med)**.
Minutes transcribed by Brenda Doup and reviewed by Dr. Diebel (Chair) & Dr. Johns (ex-Officio)