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Medical Student Bridge Program Case: Mary Beth Chrispy

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Abstract

Introduction: Many colleges and medical schools are incorporating boot camps and transition programs for students prior to their first year of medical school. In these prematriculation programs, students are given early introductions to teaching modalities and study strategies. This resource provides a realistic case scenario that introduces students to the basic case format while guiding them through the thought process needed to work through a case. Additionally, it provides students with small-group skills that will be beneficial when working through cases in the first and second years of medical school. **Methods:** The case features Mary Beth Chrispy, a 25-year-old second-year medical student who visits her primary care physician with complaints of fatigue and difficulty with focusing on her studies. Presenting questions throughout the case help guide students in making necessary connections and allow the facilitator to lead the students through each section of the case. There is no prereading to be done before the first meeting of the case. Students need to be willing to participate in the motions of the case so that they are prepared for their actual casework in the first year of medical school. **Results:** Six questions pertaining to the case were placed on a self-assessment, and the students' ability to answer the questions, based on their work throughout the week, was measured. On five out of six questions, 94.4% of students ($N = 19$) answered correctly. On the remaining question, 100% of the students were able to answer correctly. We concluded that the activity met our learning objectives. **Discussion:** Institutions that would like to include this case in their own prematriculation programs may want to utilize a standardized patient during its introductory clinical encounter.

Keywords

Facilitator, Prematriculation Program, Case-Based Learning, Case, Remediation, Bridge Program, Independent Learning

Educational Objectives

By the end of this session, learners will be able to:

1. Formulate the beginnings of a differential when given a case using basic clinical reasoning.
2. Identify resources that can be used to help solve clinical cases.
3. Recognize the presentation and pathophysiology of Epstein-Barr virus.
4. Identify early habits that can lead to burnout in medical school and how to avoid them in order to prevent burnout over the course of the next 4 years.

Introduction

Many colleges and medical schools are incorporating boot camps and transition programs for students prior to entering freshman year. Over a dozen medical schools currently have bridge or prematriculation programs, which can be anywhere from a week to 2 months long. In these programs, study strategies are highly emphasized along with early introductions to faculty and teaching modalities.¹ For example, students may be exposed to an anatomy lecture and lab so that they are able to practice how to review and prepare for high-yield information.

Appendices

- A. Mary Beth Chrispy Student Copy.doc
- B. Mary Beth Chrispy Facilitator Copy.doc
- C. Self-Assessment Questions Student.docx
- D. Self-Assessment Questions with Answers and Rationale .docx

*All appendices are peer reviewed as
integral parts of the Original
Publication.*

The goal of these programs is to better prepare students for the experience of medical education, with the understanding that most bridge programs target underserved and diverse student populations. The University of Nevada School of Medicine (UNSOM) has implemented a bridge program designed to prepare incoming medical students, identified by the Admissions Executive Committee, for the academically rigorous learning environment of medical school. All programs utilize an application process; UNSOM has adapted a holistic review approach to admissions to ensure the academic success of a more diverse student body in medical education.

UNSOM faculty partnered with the Khan Academy to identify content areas and create digital learning resources for use by these students before entering the bridge program. The utilization of precourse material is new to bridge programs in medical education, as faculty have indicated that there are some topics they would like students to have a better understanding of before they enter the classroom. Moreover, some students may not have been exposed to or fully grasped more complex science concepts in their undergraduate education, which can hinder their learning.²

This resource provides a realistic case scenario that introduces students to the basic case format while guiding them through the thought process needed to work through a case. Additionally, it provides students with small-group skills that will be beneficial when working through cases in the first and second years of medical school. The case features Mary Beth Chrispy, a 25-year-old second-year medical student who visits her primary care physician due to trouble focusing on her studies and complaints of fatigue. Presenting questions throughout the case help guide the students in making necessary connections and allow the facilitator to direct the students through each section of the case.

MedEdPORTAL has published numerous cases covering clinical skills for residents, case-based learning for specific topics, and objective structured clinical examination training for third-year medical students. However, there are currently no cases on MedEdPORTAL designed for incoming students before they start medical school. This case is unique in that it was designed specifically to help such students become familiar with what they are about to see.

Based on Dr. John Pelley's theory on expert skills learning through deliberate practice,³ we designed this resource to help grow each student's mind-set through active learning, rather than passive learning. Deliberate practice, designed specifically to improve performance academically and clinically, is defined as a practice requiring self-awareness and self-acceptance to correct weaknesses and limitations. Within the UNSOM bridge program, teachers provide feedback and support, which are required in deliberate practice techniques. Additionally, the introduction of small-group study skills encourages students to avoid automated behavior, such as loss of focus while reading.

Methods

This case is presented in a progressive disclosure format over the course of a week. Included in the materials for this case are two guides, a student guide (Appendix A) and a facilitator guide (Appendix B). Each guide includes the whole case, broken up into 2 separate days. Our recommendation is to hold two separate group sessions with a facilitator, one session for each day, followed by a wrap-up session on a third day.

Students are not required to complete any prestudying or prereadings before starting the case. The case presentation is done the first morning of the bridge program so there is no preparation needed by the students; there are no assignments for students after the case since this is meant to be an immersion program. The UNSOM curriculum utilizes the case-of-the-week format, and exposing students to this early can be beneficial. Since the week is voluntary, we do not give them direct assignments.

The facilitator of the group has the facilitator guide containing questions in red to help direct the discussion for each day of the case. These questions are not included in the student copies. The facilitator should have one copy of the student guide per learner and pass out each page of the guide as the group works through the case. Therefore, we recommend not giving the students the whole guide at once, since the progressive disclosure format allows the group to systematically work toward a diagnosis. At the end

of each day, there are questions that the students are to answer as a group. These questions are also displayed in red in the facilitator guide but are included in the student guide so that they can be answered.

Upon completing the second-day questions, in the same format as on the first day, there are two short wrap-up paragraphs included to provide the students with some concluding information about Mary Beth Chrispy. These final paragraphs can be presented to the students either at the end of the second-day session or during the case wrap-up. The facilitator can elaborate on the clinical significance of Epstein-Barr virus, along with answering any questions that the students may have in regard to the case or clinical aspects of Epstein-Barr virus infection.

During the small-group time, the students are encouraged to place questions for further learning (i.e., learning issues) on the whiteboard for further independent exploration.

Upon finishing the case, there are six self-assessment questions (Appendix C). At UNSOM, we utilize weekly self-assessments to gauge the students' understanding of the week's material. We incorporated six questions from this case into this weekly self-assessment. If an institution has a similar format, then these questions can be submitted into its own weekly self-assessment. If not, these six questions can stand alone and be administered in a paper format. These questions have been designed to assess the students' ability to work through the case and demonstrate their completion of the above learning objectives. All questions have been addressed at some point throughout the case and include learning points that students would have come across through researching the information necessary to complete the case. Answers and rationale for the self-assessment questions are included (Appendix D) if clarification on answer choices is sought.

Preparation

The preparation for this weeklong activity includes printing out all guides for facilitators and students, as well as printing out the self-assessment (it may also be given electronically).

Schedule rooms not just for the case introductions and wrap-ups, which will include the group as a whole, but also individually for each group. This allows each group to have time to work on the case individually with the help of the facilitator.

On the first day of the case, a 1-hour case introduction, presented by a clinician, is given to the students. The clinician introduces the case in the standard format by which clinicians present patients. The students are given the opportunity to ask any questions about the case that they may have before forming small groups. After the case introduction, the students form small groups consisting of five to eight students and a faculty facilitator. The first small-group session lasts approximately 1 hour. In these groups, the facilitator guides the students through the Day 1 information and corresponding questions, using the guides in the appendices. In addition, the facilitator highlights strengths, weaknesses, and potential pitfalls of small-group work and suggests a recommended strategy for small-group success.

On the second day, the student groups and facilitators reconvene and work through Day 2 of the case along with its corresponding questions. This session again lasts for approximately 1 hour.

On the third day, a 1-hour case wrap-up is provided in which the concluding pages of the case can be presented to the students and reviewed. The wrap-up may be completed by the original clinician who introduced the case or by a different clinician. This session allows the students to ask any remaining questions they may have about the case and lets the clinician further elaborate on the clinical significance of the Epstein-Barr virus.

Results

The ability of this case to teach the learning objectives outlined above was measured via the self-assessment questions administered to the students. The questions were based on the learning objectives and were developed in such a way that they could be easily answered if the students had participated and been engaged in the case throughout the week. The questions include items that students specifically had to research. Six questions pertaining to the case were placed on the self-assessment, and the

students' ability to answer the questions based on their work throughout the week was measured. On five out of six questions, 94.4% of students ($N = 19$) answered correctly. On the remaining question, 100% of the students were able to answer correctly. We concluded that the activity met our learning objectives.

From a qualitative aspect, the faculty and students enjoyed the case. Positive qualitative feedback from students included this: "I liked the direction that we were given, and I really don't see much room for improvement." Suggestions from learners included having the students individually provide a diagnosis before meeting as a group so as to compare for and against their diagnosis.

Discussion

Because some groups had the ability to work faster than others, the hour-long sessions for the small groups, case introductions, and case wrap-ups could be both too much time and not enough. Therefore, the timing for group work should be flexible and based on how each group is known to work together. Timing also varied based on the presentations for the case introduction and the case wrap-ups. The case introduction was mostly consistent with the 1-hour allotted time; however, we found that the length of the presentation given by the guest clinician largely determined the case wrap-up length. Another factor that should be considered is the amount of questions students may have. More questions means that the case wrap-up could be longer, while fewer questions means it could be shorter. There should be coordination between those conducting the case and the clinician presenting the introduction and wrap-up to assure that an appropriate amount of time is provided.

We also benefited from conducting a meeting with all case facilitators and those who put the case together. This allowed them to work together and walk through the case page by page to make sure that all instructions and questions were clear before having facilitators meet in small groups. A similar meeting should be done with clinicians agreeing to participate in the case introduction and case wrap-up. This allows the clinicians to ask any questions they have regarding the case and to become familiar with the case and what relevant information should be addressed in the case wrap-up.

A limitation to this resource was that it did not incorporate a standardized patient. A suggestion for this limitation would be to incorporate a standardized patient into the case introduction. Possible scenarios for this format could include a standardized patient present in the room with the large group of students or via videoconference. The standardized patient would be given a copy of the case to familiarize him- or herself with. The students would then be allowed to ask the standardized patient questions about the chief complaint, history of present illness, past medical history, family history, social history, and review of symptoms. This gives the students an opportunity to work on developing skills in asking open-ended questions and incorporating information received into a possible differential. If this were to occur, it could replace the previous given format for the case introduction and provide a more interactive way of obtaining the same information. One thing to note is that if this format were to be chosen, it would still be of great benefit to have a clinician involved to answer any pressing questions that the students may have. Additionally, the use of this format may change the amount of time required for the case introduction so that students still have enough time to ask the needed questions to progress to the next steps of the case.

A second limitation could be drawn from the self-assessment that was given to the students. All received nearly perfect scores on the self-assessment, which could be a weakness of the questions that were written. To answer these questions correctly required that a student attend the groups and actively participate in the discussions. More challenging questions not only would have drawn from the fundamentals learned throughout the week but also would have required application and more critical thinking.

Each year, we refine the learning assessment based on feedback from faculty and students to make it more efficacious for the program. We refine the case, objectives, and student assessment questions on an annual basis based on feedback from students, faculty, and other administrators. Open-box narrative feedback is used as part of our midyear and end-of-year survey. We are considering adding open-boxed questions or Likert-scale questions to the postassessment.

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Ethical Approval

Reported as not applicable.

References

1. Patel R, Tarrant C, Bonas S, Yates J, Sandars J. The struggling student: a thematic analysis from the self-regulated learning perspective. *Med Educ*. 2015;49(4):417-426. <http://dx.doi.org/10.1111/medu.12651>
 2. Artino AR Jr, Hemmer PA, Durning SJ. Using self-regulated learning theory to understand the beliefs, emotions, and behaviors of struggling medical students. *Acad Med*. 2011;86(10)(suppl):S35-S38. <http://dx.doi.org/10.1097/ACM.0b013e31822a603d>
 3. Pelley J. Deliberate practice—a primer: a resource for TTUHSCSOM Expert Skills Program. Upstate Medical University Web site. http://www.upstate.edu/com/document/primer_deliberate_practice.pdf. Published February 27, 2012. Updated April 2013.
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