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Practical and customizable study strategies for clerkship year success
Des stratégies d'étude pratiques et personnalisables pour réussir son année d'externat

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Article abstract

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We describe several customizable study approaches, advice on selecting resources, and methods for applying the educational framework of deliberate practice and corrective feedback to learning during a medical student's clerkship years. These strategies focus on intentional and outcome-driven self-assessments to identify and patch knowledge gaps tailored to the clerkship year that will empower learners.

Practical and customizable study strategies for clerkship year success
Des stratégies d'étude pratiques et personnalisables pour réussir son année d'externat

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Abstract

The transition from a pre-clerkship curriculum to the clerkship year presents a need to re-examine and modify study strategies for clinical subject examinations and ultimately the United States Medical License Examination STEP 2 Clinical Knowledge. Efficient and effective learning are keys in balancing the significantly increased responsibility of patient care and decreased time for examination preparation.

We describe several customizable study approaches, advice on selecting resources, and methods for applying the educational framework of deliberate practice and corrective feedback to learning during a medical student's clerkship years. These strategies focus on intentional and outcome-driven self-assessments to identify and patch knowledge gaps tailored to the clerkship year that will empower learners.

Résumé

Le passage du programme de préexternat à l'année d'externat exige que les étudiants revoient leurs stratégies d'étude pour les examens de matières cliniques et, à terme, pour l'examen STEP 2 Clinical Knowledge du United States Medical License Examination. Un apprentissage efficace et efficient est essentiel pour trouver un équilibre entre l'importante augmentation des responsabilités de soins aux patients et la diminution du temps consacré à la préparation des examens.

Nous proposons aux étudiants en médecine plusieurs approches d'étude personnalisables, ainsi que des conseils sur la sélection de ressources et méthodes pour appliquer le modèle éducatif de la pratique délibérée et de la rétroaction corrective à leur apprentissage pendant les années d'externat. Ces stratégies, adaptées à l'année d'externat, sont focalisées sur l'autoévaluation intentionnelle et axée sur les résultats pour repérer et combler les lacunes en matière de connaissances. Elles aideront les apprenants à se sentir en confiance de leurs moyens.

Introduction

Transitioning from the pre-clerkship to clinical phase of medical school can be challenging.[1-3] While pre-clerkship curricula are generally classroom-centered, clerkships are completed in the hospital where students participate in and learn from patient care while also preparing for clinical knowledge assessments, which include the National Board of Medical Education (NBME) clinical science subject examinations (SHELF). The limited time available to prepare for these examinations means that learners must be able to self-direct their learning, reflect on their effectiveness, and implement changes to improve their performance.[1]

Most clinical curricula focus on patient care and diagnostics, both of which aid in SHELF examination preparation, but are not specifically geared toward it. Moreover, with long clinical hours students have limited time for studying. As a result, many learners find that study strategies they used in the pre-clerkship setting are no longer successful. This results in increased stress, frustration, and ultimately ineffective retention of material.

Research describing examination preparation strategies under these circumstances is limited, but often contains themes of deliberate practice and corrective feedback.[4] Activities geared toward improving one's performance combined with feedback aimed to enhance learning and retention help create successful strategies.[5,6] Guided by this framework, YH created two methods to combat the roadblocks above.[7-10] First is recognition and correction of weak topics via Self-assessment, Identification, and Patching of knowledge gaps (SIP). These are topics in which the learner frequently misses questions or lacks understanding. Second is intentional acquisition and retention using Goals, Means, and Outcomes (GMO). These strategies work together to develop a goal that is feasible, manageable, and measurable within the time available.[11]

Here, we describe four ways to create an integrated approach for developing effective study habits for clinical examinations, as well as examples of their implementation from the experiences of two learners at different medical schools (CZ and HJ).

How to get a grip on studying during the clerkship years

1. Be the boss of question banks
Question banks are among the most popular tools for learners. In Uworld, questions are organized by organ systems. Therefore, a systems-based approach allows for targeted assessment (e.g., learning about Gastrointestinal (GI) is followed by self-assessing GI). Initially focusing on subtopics within a discipline (e.g., hepatic disorders) can aid in the initial self-assessment of knowledge. This strategy is more conducive for learners to assess what they have learned and patch gaps before combining topics. Analysis of missed questions within each self-assessment is critical. For example, a systematic breakdown of missed questions allows learners to identify which topics to focus their efforts on to maximize their effectiveness (Figure 1).

Diagnosis is a high-yield topic assessed on clinical examinations. One method of analyzing diagnostic errors in questions is to create comparison tables, focusing on key differences between diagnoses. For example, when author CZ incorrectly selected schizophreniform disorder in a question involving the diagnosis of schizophrenia, she did not differentiate duration of symptoms as a key diagnostic criterion. Therefore, she created a table comparing the two diseases to emphasize this difference.[5] Active processes such as this provide an additional layer of engagement and understanding.

2. Be intentional with self-assessment
STEP 2 CK is more comprehensive and challenging in comparison to single-subject SHELF examinations. In preparation, it is important to reflect on strategies used for SHELF examinations by reviewing and analyzing longitudinal performance data from question banks.

An example best demonstrates the application of SIP and GMO in this context. In preparation for STEP 2 CK, HJ utilized her performance in UWorld to identify Family Medicine as a weak subject from her clerkship year. She further identified her weakest subtopics using past performance data to help her create a study plan using the GMO framework. Her method was to select questions and learn from both incorrect and correct answers, supplementing with textbooks or videos if needed. After reaching her outcome (70% correct), she could move these topics from her "weak topics'' list and shift focus to other lower-scoring areas. Through these methods, she drastically improved her performance and surpassed her SHELF performance on STEP 2 CK.

3. Select individualized resources
Resource selection is largely based on students' past experiences and time constraints. One example is texts such as *First Aid for Step 2 CK*, *Step Up*, or *Case Files.*[13-15] These books consist of topic descriptions and questions aimed to assess understanding of the material. Another example is videos, such as *Online MedEd,* which focuses on the key differentiating features of similar diseases, as well as pathophysiology, diagnosis, and treatment.

Flashcards (Anki), can be helpful for retaining details quickly and efficiently, as well as for quick self-assessment. HJ selected cards from premade decks based on her weaker topics, which allowed her to create a customized resource. CZ preferred to utilize cards to train herself to identify key features that differentiated diagnoses, treatments, etc. For example, if a card emphasized that the patient with chest pain also has a nosebleed, it triggered her to ask why this detail was mentioned.

No matter the resource selected, monitoring its effectiveness through self-assessments, which both first authors found to be the most useful tool, is essential and can be made more efficient through SIP and GMO. It also allows learners to practice in the format that they will be assessed.

4. Manage time

Managing time while on clinical rotations can be difficult. Creating a feasible strategy and breaking material into segments is key. When it comes to question banks, dividing the total questions in one category by days on a rotation gives a rough framework of time that should be spent daily on examination preparation. Reviewing content from incorrect questions and re-testing missed concepts should occur parallel to this process to monitor for weaker topics and evaluate effectiveness.

Final thoughts

Transitioning from pre-clerkship to clinical curricula creates an opportunity to revamp strategies for knowledge acquisition, retention, and time management. Utilizing GMO and SIP within the framework of deliberate practice, corrective feedback, and reinforcement, we have provided strategies that can be customized to individuals for their clerkship year. Continued efforts in self-reflection and deliberate practice while incorporating corrective feedback are learning skills which can improve a student's performance on future examinations.
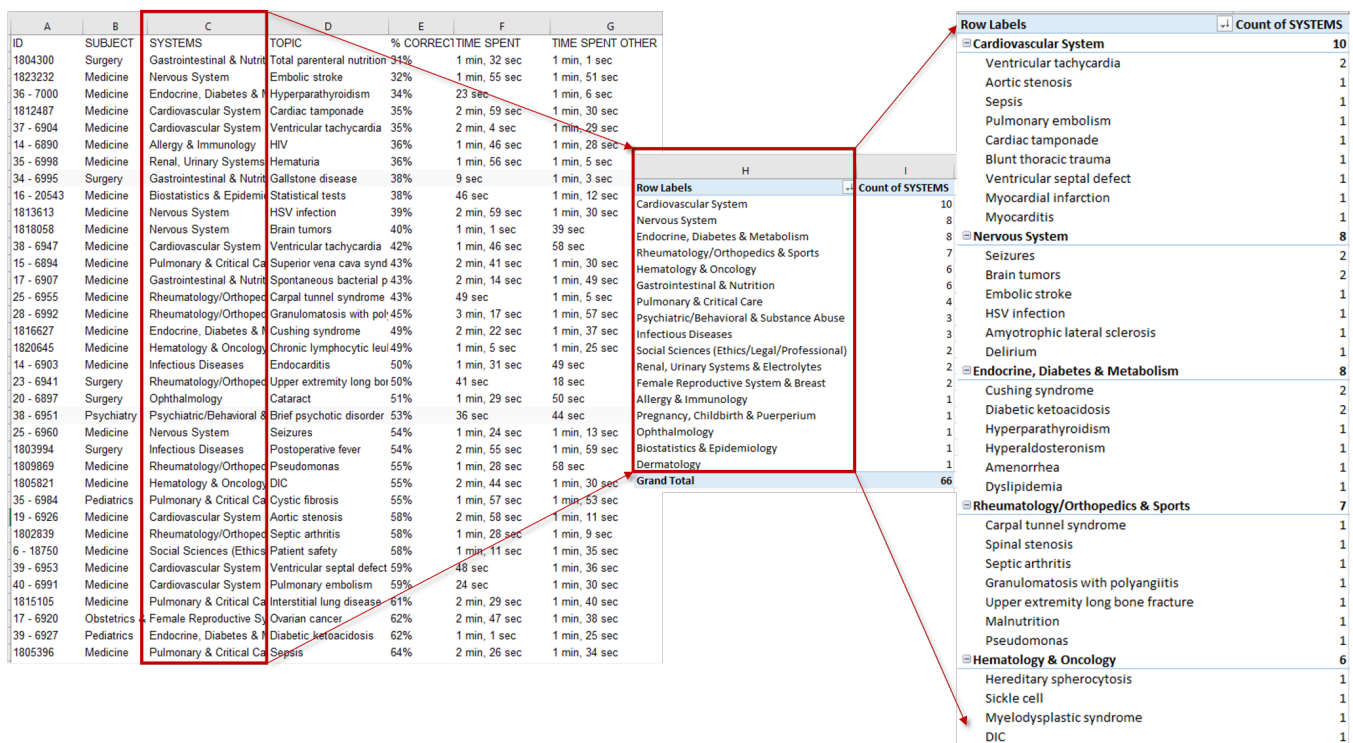

Figure 1 An example of analyzing performance data using the pivot table function in an excel sheet. Learners can directly import the missed questions on a question bank, already organized by ID, Subject, Systems, Topics, % correct others, Time spent, and Time spent others onto an excel document. In this example, the data shows the number of missed questions organized in each system, and the topics within the systems.

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