INTERNAL MEDICINE

SUBINTERNSHIP CURRICULUM 2.0

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Introduction

While the time period between medical school graduation and the start of graduate medical training (internship) may be short, the transformation from medical student to intern is a significant one. New interns are expected to assume higher levels of responsibility and workload in the setting of challenging clinical, social, and emotional contexts. Surveys of residency program directors[1,2] and empirical studies[3-6] have noted gaps and variability in knowledge and skills among new interns. These gaps have prompted medical educators to turn their attention to the fourth year of medical school in an effort to strengthen students' preparedness for internship.[7-11] Among the wide array of fourth-year courses, the subinternship (also known as acting internship) is commonly viewed as one of the most important clinical experiences in helping senior medical students prepare for internship. This view has been shared by both faculty[2,12] and residents.[13]

The origin of the subinternship can be traced back to World War II, a time when the national shortage of interns necessitated the creation of "acting internships" for senior medical students. Seen as a logical extension of the "progressive graded responsibility" concept already in place for residency programs, this new rotation for senior medical students became widely adopted after the war.[14] Over time, this popular course has evolved into an integral component of undergraduate medical training and is now required at 90% of U.S. allopathic medical schools.[9] Despite its longstanding tenure, medical educators have only begun to establish some standardized structure and content for the subinternship in the past two decades. In 1998, Fagan and colleagues began this process by outlining specific recommendations for the internal medicine (IM) subinternship's structure and experience.[15] In 2002, the Clerkship Directors in Internal Medicine (CDIM) Subinternship Task Force developed a core curriculum for the IM subinternship.[16,17] This curriculum was based upon a needs assessment survey of IM residency program directors, subinternship directors, and interns.[18]

The landscape of graduate medical education (GME) and medical practice has changed significantly since the turn of this century, prompting national organizations to call for reforms to the medical school curriculum so that medical students are more adequately prepared for post-graduate training. The Association of Program Directors in Internal Medicine (APDIM) surveyed its members in 2010 and put forth four core skills all IM interns should possess at the start of residency training.[19] Soon thereafter, the Alliance for Academic Internal Medicine (AAIM) formed a joint CDIM-APDIM Committee on Transition to Internship (CACTI) to examine the fourth year of medical school with the aim of making evidence-based recommendations to help students optimize their preparation for internship.[9-13] The Association of American Medical Colleges (AAMC) also established thirteen core entrustable professional activities for entering residency (EPA) that define a set of foundational skills and behaviors expected of all medical school graduates. The core EPAs were created as a practical approach to assess the Accreditation Council for Graduate Medical Education (ACGME) six core competencies in real-world settings (Table 1).[20] Over this same time period the medical education community became increasingly aware of the distress and burnout problem among residents and medical students,[21-23] resulting in calls for interventions to improve medical students' well-being and resilience in hopes of getting them better

prepared for their next phase of clinical training.[24,25]

Table 1. The Association of American Medical Colleges (AAMC) 13 Core EPAs

EPA 1	Gather a history and perform a physical examination
EPA 2	Prioritize a differential diagnosis following a clinical encounter
EPA 3	Recommend and interpret common diagnostic and screening tests
EPA 4	Enter and discuss orders and prescriptions
EPA 5	Document a clinical encounter in the patient record
EPA 6	Provide an oral presentation of a clinical encounter
EPA 7	Form clinical questions and retrieve evidence to advance patient care
EPA 8	Give or receive a patient handover to transition care responsibility
EPA 9	Collaborate as a member of an interprofessional team
EPA 10	Recognize a patient requiring urgent or emergent care and initiate evaluation and management
EPA 11	Obtain informed consent for tests and/or procedures
EPA 12	Perform general procedures of a physician
EPA 13	Identify system failures and contribute to a culture of safety and improvement

Source: https://members.aamc.org/eweb/upload/core%20EPA%20Curriculum%20Dev%20Guide.pdf

With the vastly changed GME landscape and national calls for better preparation of medical graduates, the purpose of this project is to build on the previously published subinternship curriculum[16,17] and its primer[26] in order to create an updated curricular guide for subinternship directors and their core teaching faculty. Contributing authors of this document conducted thorough reviews of the medical education literature to provide the most updated and relevant curricular content. Our hope is that this curricular guide can serve as an educational framework for both teachers and students alike.

Results from the 2010 survey of APDIM members,[19] recommendations from the joint CDIM-APDIM position paper about the IM subinternship,[11] and the concerning issue of resident and medical student distress/burnout informed our committee's work on this project. More specifically, IM residency program directors established the following four core skills that they expect from new interns: recognizing sick vs. non-sick patients, knowing when to ask for assistance, managing time wisely, and communicating effectively within healthcare teams.[19] Two of these four core skills map directly to very similar core EPAs for entering residency. While EPAs have a synthetic nature because, by definition, they require the integration of various competencies in order to perform a certain task, they can be quite numerous and render a curriculum too complex and unwieldy to be useful. We further found that some of the core EPAs for entering residency serve as prerequisites to enable other core EPAs in the list of thirteen established by the AAMC. For example, being able to gather a history and perform a physical examination (EPA-1), prioritize a differential diagnosis following a clinical encounter (EPA-2), recommend and interpret common diagnostic and screening tests (EPA-3), and enter and discuss orders/prescriptions (EPA-4) are all needed in order to enable the ability to recognize a patient requiring urgent/emergent care and initiate evaluation and management (EPA-10). Therefore, our committee

chose to use the four core skills outlined by the IM residency program directors along with medical student wellness as the central framework upon which to build this updated curricular guide. Furthermore, these four skills have a naturally and logically linked relationship with one another especially when viewed in the healthcare workplace context. Figure 1 illustrates this interrelationship between these four skills. In addition to EPAs to further support these core skills, we also chose to use the RIME (Reporter-Interpreter-Manager-Educator) framework[27] for not only its practical linkage to patient care responsibilities but also for its developmental nature[28] and predictive validity of future performance during internship.[29] Table 2 outlines the linkage between the supporting core EPAs, the core ACGME competencies, and the RIME model to the four core skills recommended by IM residency program directors.

Figure 1. Inter-relationships of the 4 core skills for subinterns recommended by APDIM

Table 2. Relationship between core skills from APDIM survey, core EPAs for entering residency and their prerequisites, core ACGME competencies, and RIME model

Core skills from APDIM survey	Corresponding core EPA for entering residency	Prerequisite/enabling, or related core EPAs	Corresponding ACGME competencies	RIME model
Time management skills	N/A	N/A	P, ICS, SBP, PC	Consistent Reporter and Interpreter with some initial Manager skills
Communicating effectively within healthcare teams	EPA-9	EPA-5, EPA-6, EPA-8	ICS, SBP, P, PC	Consistent Reporter and Interpreter with some initial Manager and Educator skills
Patient evaluation skills (e.g., recognizing sick patients)	EPA-10	EPA-1, EPA-2, EPA-3, EPA-4, EPA-10	PC, MK, ICS, SBP	Consistent Reporter and Interpreter with some initial Manager skills
Knowing when to ask for assistance	N/A	EPA-7, EPA-9, EPA-10	PBLI, ICS, SBP, PC	Consistent Reporter and Interpreter with some initial Manager skills

Legend:

PC = Patient Care
MK = Medical Knowledge
ICS = Interpersonal and Communication Skills
SBP = Systems-Based Practice
PBLI = Practice-Based Learning and Improvement
P = Professionalism

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Chapter 1:   Time management skills

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Background

Both program directors and residents have identified efficiency and organization as two essential skills for new interns.[1,2] In a 2013-14 survey of over 24,000 internal medicine residents taking the yearly in-training exam, 88% of respondents identified time management and prioritization of tasks as very important skills that trainees should learn prior to starting internship.[1] For residents to be effective in their daily work, they need to have well-developed organizational skills.[3] The subinternship is a logical place to develop and to refine these skills.

Efficient use of time of both medical students and residents has been evaluated via workflow analysis captured in time-motion studies. A British study examining early medical students (i.e. those who enter medical school directly from high school) revealed that almost a quarter of first-year students had deficiencies in organizational skills and an additional 16% were noted to have similar deficiencies in their second year. The authors concluded that lack of time management skills would impair their study habits going forward.[4] However, teaching organizational skills proved to be difficult in one Dutch study of residents from multiple specialties in which an intensive intervention (two 4-hour sessions, homework assignments and a post-test) showed an insignificant improvement in the intervention group compared to the group that did not receive the intervention.[5] The results of this study leaves the following questions: *Does training help those with inefficient organizational skills?* and *What training should subinterns receive in this area?*

In one study of PGY-1 residents at 2 internal medicine residency programs, only 12% of duty time was spent on direct patient care compared to 64% of time spent on indirect patient care. About 40% of total time was spent using a computer.[6] A more recent time-motion study of internal medicine residents indicated further erosion of direct patient contact. In this study, over 50% of shift time was spent using computers and less than 10% was spent with patients.[7] With the 2003 ACGME duty hour restrictions, the authors discussed strategies to increase direct patient contact for residents, including geographic patient assignment in the hospital and task-sharing with non-medical personnel.[6] In a review of several time-motion studies on internal medicine residents, approximately 42% of time was spent in patient care activities, 18% in communication activities, 14% in education, and 20% in other and personal activities.   There was no significant change between studies done before or after the 2003 duty hour mandate.[8]   Given duty hour limits and competing demands for time and attention, subinterns must learn to organize their day in the most efficient manner to not miss clinical changes, opportunities to further their education such as morning teaching conferences, or chances to strengthen the patient-physician relationship through increased direct patient care interaction. The subinternship is an ideal

place to develop these organizational skills.

Although time-management is not specifically included in the 13 core EPAs, this particular skill may provide a framework around which subinterns can organize and prioritize their 'professional activities.' For example, while documentation in the medical record is important (EPA-5), subinterns should recognize electronic order placement (EPA-4) and communication with other members of the interprofessional team (e.g., nurses, consultants, etc.) (EPA-9) usually take precedent over note-writing.

Learning Objectives

By the end of their rotation, subinterns should be able to:

1. Organize a daily patient care task list for each patient in a structured and systematic way so that required tasks (e.g., daily notes, orders, etc) are not overlooked.
2. Prioritize daily patient care task list according to degree of importance/urgency.
3. Prioritize patients' clinical problems according to degree of clinical importance/urgency.
4. Recognize one's own limitations and call on other team members to help.

Proposed Recommendations

While it may seem intuitive to seasoned clinicians, students may not possess a good understanding of how to best utilize their time on a daily basis on the wards, but we believe this skill can be taught. We propose that students be given a basic daily "schedule" to follow that they can then modify as needed based on their patients' needs. In essence, there are four main tasks each day for each patient: interview and examine the patient, write a daily progress note including relevant data from the last 24 hours, order labs/studies for the next 24 hours, and handoff the patient to the next team, which could be the night float or the day team. While there are many methods of organizing these tasks, the simplest is something we refer to as the one-page box system (Figure 1). Each patient gets a 4x4 box, with each small box representing one of the tasks to complete. To the right of the box, the trainee can have a running list to track the important labs/studies, updates from consultants, and other "to-do's" for the patient such as rechecking a lab in eight hours or calling the family to update them. Ideally, the trainee should complete the first two tasks prior to attending rounds.

Figure 2. Tips to Stay Organized:

Four Basic Tasks that must be done every day for each patient

1. Interview/examine the patient
2. Write a daily progress note
3. Write orders
4. Complete a handoff

The ONE page system:

1. Print out a list of all of the patients on one sheet of paper.
2. On the left hand side next to each patient's name draw a square with four quadrants.
3. Each box represents one of the four basic tasks and as soon as the task is completed blacken the inside of the box.

This gives a visual aid to guide what work has been completed.

4. Under the patient's name record the vitals so that they are clear and easily accessible.
5. On the right hand side create a task list and blacken boxes as these task are completed.
6. Important labs that need to be recorded can be written next to the task list or you can fold about two inches of the paper on the right side and record the labs on the back.

Handoff	See the patient
Write Orders	Write Note
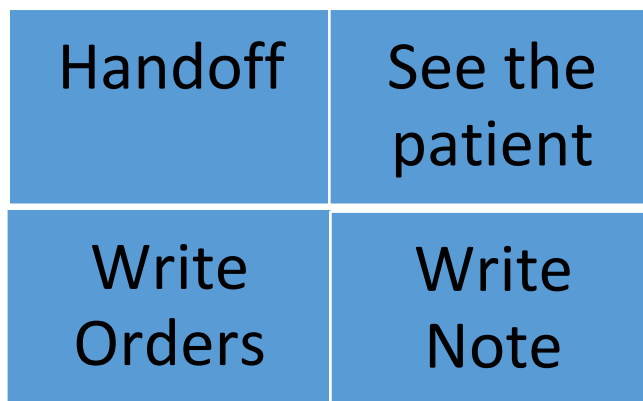
One-box system (developed by Cori Salvit, MD)

Having an efficient and productive morning on the wards requires the subintern to balance the work of the day with clinical knowledge and critical thinking. Starting with review of vital signs and trends, the subintern should then determine any overnight events, highlighting the need for understanding systems-based practice and interpersonal/interprofessional and communication skills as he/she speaks to the nurse and other team members about the patient. Next, the subintern should evaluate the patient personally, focusing on both the initial complaint as well as quickly screening for any high-stakes diagnoses or complications that may have developed. Immediately after seeing the patient, he/she should gather any laboratory or study data from the medical record to complete the objective data gathering tasks. At this point, the subintern must apply his/her medical knowledge and clinical reasoning skills to interpret and synthesize the entire data set to develop a preliminary plan, which includes creating and prioritizing a to-do task list. The subintern should identify critical vital signs and

labs and act on them expediently (example: a serum potassium of 6.8 should trigger the clinician to act immediately, not just add it to the list to address later). Throughout this process, the subintern must also demonstrate the ability to seek help, as discussed in Chapter 4, so that if he/she is overwhelmed by the task list or if he/she is unsure about how to handle a clinical situation, he/she must communicate this to his/her supervisor in a timely manner.

Emphasizing the need for a systematic approach to each patient and a one-page organization system will provide the learner with the framework needed to develop efficiency and organization on the wards. The RIME framework[9] can be applied to teach and evaluate these clinical tasks of the subintern: *Reporter* skills of gathering data from patients, nurses, and EMR and documenting that data in the daily progress note; *Interpreter* skills of analyzing diagnostic test results and synthesizing with other data to formulate a prioritized problem list; *Manager* skills of acting on life-threatening problems – whether plans include further diagnostic and/or treatment for the life-threatening problem or to call someone more senior for help.

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Chapter 2: Communicating Effectively Within Healthcare Teams

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Background

This core skill is broad, not only addressing how to effectively communicate patient care information to all interprofessional team members but also addressing the necessary tools to allow subinterns to successfully complete required clinical work in a timely manner. Communication about patient care information takes on many forms and includes but is not limited to the following methods: written documentation in medical records, oral presentation of a clinical encounter, giving and receiving patient handoffs to transition care responsibility, requesting specialty/subspecialty consultation, collaborative communication with nursing and pharmacy staff, and discharge planning communication with team case manager/social worker and outpatient care provider. Interns will encounter a wide range of situations (clinical, contextual, personal, etc.) which will require assistance from either supervising team members (faculty or upper level resident) or ancillary team members (e.g., nurse, pharmacist, social worker, etc.). As such, knowing *when* to ask for help (see core skill #4 of this document) and *how* to ask for this help will be of critical importance for subinterns to learn in order to optimize their readiness for internship.

Regarding written documentation in medical records, admission history and physical exams (H&Ps) and daily progress notes are basic skills that are typically emphasized and taught during core third year clerkships. Given the developmental nature of medical trainees along the continuum, this curriculum will not address these types of notes but will rather focus on notes dealing with transitions of care, important junctures that can leave patients particularly vulnerable. Therefore, it is critical subinterns learn and hone their written and verbal communication skills to cohesively summarize important issues as they pertain to these transition points. Accordingly, transfer/accept notes, discharge summaries, and cross cover notes will be the main focus of this curriculum.

Of the thirteen Core EPAs, four of these relate directly to this curriculum's core skill and were adapted to build our curriculum. These four EPAs are:
- Document a clinical encounter in the patient record (EPA-5)
- Provide an oral presentation of a clinical encounter (EPA-6)
- Give or receive a patient handover to transition care responsibility (EPA-8)
- Collaborate as a member of an interprofessional team (EPA-9)

Global Learning Objectives

By the end of their rotation, subinterns should be able to:

1. Write a transfer/accept note for patients who transfer to/from a different service
2. Write a discharge summary
3. Write a cross-cover note
4. Provide an oral presentation of a clinical encounter, tailoring length and content according to context
5. Give and receive patient handoffs (both in writing and verbally) to transition care responsibility
6. Speak with specialist/subspecialist colleagues to request consultation
7. Communicate collaboratively with nursing and pharmacy staff to enhance patient care
8. Communicate effectively with team case manager, social worker, and outpatient care providers to facilitate discharge planning

More specific learning objectives will be discussed for each of the four EPAs related to this core skill.

EPA-5: Document a clinical encounter in the patient record

Transition points of care have a high potential to jeopardize patient safety.[1-6] Therefore, effective documentation that accurately and cohesively captures these transition points of patient care to enhance continuity of care is an important skill for subinterns to develop.

Learning Objectives

1. Write accurate, concise, and well-organized transfer/accept notes, discharge summaries, and cross-cover notes
   a. Filter, prioritize, and organize all information
   b. Synthesize and summarize information into a cogent narrative for the hospital course, ICU course, etc.
   c. Document a prioritized problem list with an assessment and plan for each problem
   d. Document the supporting rationale for each management decision so that any reader can understand the reasoning behind the clinical decision making
   e. Document appropriate pending tests/issues and follow-up plans for the next healthcare provider(s) who will assume care of the patient to optimize continuity of care

The following sections on transfer/accept notes, discharge summaries, and cross-cover notes were adapted from the "Primer to the Internal Medicine Subinternship -- A Guide Produced by the Clerkship Directors in Internal Medicine"[7] with permission from the editors and authors.

Transfer/Accept Notes

As patients transfer from an intensive care setting to a ward setting or from one inpatient specialty service to another (e.g., a neurology team to a general internal medicine team), a transfer note by the

transferring team and an accept note by the receiving team should contain similar components.[2-6]

The key elements of a transfer/accept note are:
- Date of admission
- Admitting diagnosis
- Date of transfer
- Current primary diagnosis/problem (on date of transfer)
- Brief summary statement: 1-2 sentences
- Hospital course to date: include the following –
    - Briefly summarize each major problem (prioritize from most to least important)
    - Diagnostic test results, including procedures
    - Therapeutic interventions – provide rationale and outcomes
    - Consultants (may incorporate into above points about diagnostic tests and therapeutics)
    - Complications (if applicable)
    - Current mental and physical status of the patient
    - How does this status compare to time of admission? To the patient's baseline health?
- Current Medications at time of transfer (include their rationale)
- Allergies
- Physical exam (including vital signs) on day of transfer
- Diagnostic test results on day of transfer
    - Include pending studies (e.g., cultures, biopsy, etc)
- Problem list: each problem should be followed by an assessment and then plan. Include the following at the end of the problem list
    - Current code status
    - Any challenging or unique family, cultural, and/or psychosocial issues
- Assessment: should follow each problem; discuss how patient is progressing (or not) and the updated assessment for each problem
- Plan: outline further management plans (both diagnostic testing and/or therapeutics)

The patient safety literature recommends that to further decrease the risk of miscommunication, ambiguities, or unanswered questions, transferring and accepting teams should discuss the patient verbally (ideally face-to-face) in addition to written documentation.[8]

Discharge Summaries
When a patient is transferred from acute care setting to a subacute or chronic care setting or to their home, a discharge summary is written with emphasis on ongoing treatments, pending studies, and the baseline clinical status of the patient (see below). An effective discharge summary provides the critical information to other caregivers necessary to facilitate continuity of care and is often the only reliable information other healthcare professionals receive about the patient's hospitalization.[1,4,6] Therefore, it should be thoughtfully written. The most ideal discharge summaries are usually done within 24 hours,

are generally less than two pages, and contain pertinent data that concentrates upon discharge information necessary to provide a smooth transition of care. Many hospitals may provide their own standardized discharge summary template. If not, a consistent format should be followed when writing or dictating discharge summaries.

The key elements of a discharge summary are:
- Date of Admission
- Date of Discharge
- Admitting Diagnosis: This item is the condition that you feel is responsible for the patient's admission. It is your working diagnosis, not the chief complaint.
- Primary Discharge Diagnosis: List a specific diagnosis and not a sign or symptom.
- Secondary Diagnoses: Include all active medical problems regardless of whether they were diagnosed this admission. (Active medical problems include any condition for which the patient may be receiving treatment.)
- Procedures: List all procedures with the date of occurrence and key findings.
- Consultants: List all consultants and key findings/recommendations.
- History of Presenting Illness: (optional except when discharge diagnosis is uncertain). Typically, this brief snapshot of how the patient presented to the hospital is followed by the phrase "see dictated full H&P for details." It is basically the same thing you would write as your one to two sentence summary statement under the assessment before you detail your thought processes, differentials, and plan. You may want to include pertinent and abnormal physical findings.
- Hospital Course: This section is not a day-to-day account of the hospital course. It needs to balance appropriate details with conciseness. Include any major interventions, key findings and test results, and complications. Self-limited electrolyte abnormalities, minor medication adjustments, and routine fluid administration are too detailed. For hospitalizations less than three days, two or three sentences will likely suffice.
- Condition at discharge: Provide a brief functional and cognitive assessment (e.g., "ambulatory with walker;" "stable but confused and requires assistance with ADLs").
- Disposition: This item notes where the patient is going upon discharge (e.g., "home with home health," "daughter's home," "Frazier Rehab Center," or "Northfield Nursing Home").
- Discharge Medications: List all medications including doses, route, frequency, and duration if applicable. On this list of discharge medications, explicitly identify:
  - Any changes from the patient's admission medications and the rationale for change.
  - Any medications that the patient should no longer take.
  - Any new medications started during the hospitalization.
- Discharge Instructions: Include diet, activity level, wound care, and other pertinent issues. (This is different from the discharge instructions you give to patients, which include signs and symptoms to report or seek care and uses basic language. These instructions are for other health care providers.)
- Pending Studies/Issues: List all important tests/labs that are outstanding and to whom the

results will be sent. List outstanding medical or social issues at discharge. List the abnormal laboratory data that require follow-up.
- Follow-up: If possible, schedule appointment(s) for patient and include name of doctor and specialty, date of appointment, phone number, address, and visit purpose. If the patient will schedule the appointment, be sure to include the timeframe by which the patient should schedule the appointment (e.g., "Patient to arrange follow-up appointment within two weeks").
- Prognosis/ Resuscitation Status: When prognosis is grave, note whether the issue was discussed with patient and family.

If the discharge summary is completed online, determine whether it is hospital policy to give a copy to the patient.

Cross-Cover Notes
When covering for a colleague, it is critical to communicate medical information effectively. Information that must be conveyed includes your assessment, changes in patient's clinical status, therapeutic and diagnostic intervention and response to treatment. Cross-coverage notes are an efficient way to ensure all caregivers are aware of significant medical events. (Please see appendix C for an example of a cross cover note)
 Best practices of a cross cover note are:
- Write clearly and succinctly.
- Document the time and date when you saw the patient.
- Identify the time and the main reason you were called to assess the patient.
- Derive the history of the event from the nurse and the patient.
- Describe briefly the pertinent physical exam findings at the time of your evaluation.
- Discuss briefly your assessment and plan, including medications given and tests ordered.
- Document your interpretation of any EKGs and radiological studies performed.
- Document tasks pending completion or follow up ("To Do" list).
- Document discussions you had with the patient, family, or consultants.
- Document change in code status if applicable (This should be communicated verbally as well).
- Sign legibly and leave your contact information for questions.

Tips for cross-cover notes:
- Always write them immediately after your encounter with the patient
- Should be written as a separate document in the chart, i.e., not an addendum to daily progress note written by primary team earlier in the day
- Write an addendum to the note if additional information becomes available or you go back to reassess the patient

EPA-6: Providing an oral presentation of a clinical encounter
The oral presentation of a clinical encounter is a critical component of interprofessional communication.

Effective presentations may help facilitate patient care, improve efficiency on rounds, serve as a stimulus for individual and group learning, and allow for student and resident evaluation.[9] The Internal Medicine accrediting bodies have highlighted the importance of communication through incorporation of specific program requirements and milestones.[10,11] Providing an effective oral presentation of a clinical encounter is a common skill across all disciplines and has been included in the 13 Core EPAs.[12] Program directors in Internal Medicine relay that being able to provide an oral presentation of a patient encounter is one of the most essential of the AAMC's Core EPAs, yet it was also identified as having one of the largest gaps between expected and observed performance.[13] This is not surprising as delivering an effective oral presentation is a complex task that requires the presenter to draw upon many other skills. Students must have requisite data gathering skills to collect accurate information about their patients through history taking, performing a physical examination and integration of laboratory and imaging studies. They should work towards building the medical knowledge and clinical reasoning skills to organize and synthesize vast amounts of information into a logical framework that incorporates the 'pertinent' details without hiding such details in excessive 'extraneous' information.

While it has been suggested that students perceive the need to present by applying rigid rules,[14] the competent student should be able to adjust their presentation to meet the needs of the person receiving the information and ensure closed-loop communication to confirm a shared understanding of the patient's condition between the presenter and receiver. Green et al. developed instructions for students for presenting new patients on work rounds,[9] while Dhaliwal and Hauer proposed an alternative structure to present new patients who were admitted overnight by the night float team.[15] Furthermore, the verbal portion of the handoff is another specific form of oral communication that is discussed elsewhere in this curriculum. These instructions have been adapted below with a focus on developing the behaviors and skills required for entrustment.

Learning Objectives
1. Provide a well-organized, accurate, concise oral presentation
2. Tailor the oral presentation based on the specific situation and needs of the receiver
3. Summarize the presentation in a manner that demonstrates clinical reasoning skills

Oral Presentation of Clinical Encounter
- Chief Complaint
    - Briefly state chief complaint/reason for admission with chronicity
    - Include age of patient
    - Include relevant past history that may impact chief complaint
- History of Present Illness
    - State when patient was last well/baseline status
    - Clearly describe chronology of symptom development
    - Describe pertinent positives and negatives
        - Your HPI and description of pertinent positives and negatives should be guided

by your differential diagnosis and give the receiver a clear sense of what differentials you are considering
- ○ Touch upon:
    - ● Onset
    - ● Location/radiation
    - ● Duration/progression
    - ● Severity/character
    - ● What makes this better
    - ● What makes this worse
    - ● What can the patient no longer do
    - ● Why did they come in today
    - ● State when patient was last well/baseline status
- ● Past Medical/Family/Social History
    - ○ Present past medical history with supporting data (has history of heart failure with reduced ejection fraction, last known EF 35%; has history of chronic renal insufficiency, last creatinine 1.6, etc)
    - ○ You may exclude minor diagnosis that do not add to case (diagnosis of osteoarthritis in an 88 year old)
    - ○ Include relevant family history that may impact the patient's current problem
    - ○ Include relevant social history such as tobacco or alcohol use, if patient is elderly or debilitated describe normal level of functioning (do they need help with ADLs?)
- ● Medications and Allergies
    - ○ Consider listing medications by problem rather than alphabetically or otherwise (i.e. if a patient has heart failure and is on a loop diuretic, ACE inhibitor, beta blocker and spironolactone, list these medicines together)
    - ○ Include dosages for relevant medication
    - ○ Clearly state in a medication is new or if the dose has recently been changed
    - ○ Don't forget about over the counter/herbal medications
    - ○ List the patient's allergies with the specific reaction
- ● Review of Systems
    - ○ Do not repeat information given as part of the history of present illness
- ● Physical Examination
    - ○ Always start with vital signs and the patient's general appearance
    - ○ Present the examination in an organized, systematic manner
    - ○ Include all information on the examination of the key systems related to the presenting complaint (i.e. all elements of the neurological examination in a patient presenting with a stroke)
    - ○ Describe all abnormal findings even if from a system that does not directly relate to the patient's presenting symptoms
    - ○ If a non-key element of the physical exam is normal, it is OK to state it as such (i.e. in a

patient with cellulitis of the leg, you do not have to report that pupils are equal, round, 4mm and reactive to light and accommodation; his tympanic membranes show normal landmarks without scarring or fluid behind the membrane; his nasal turbinates are patent and non-boggy; oral pharynx reveals no oral ulcers, cobblestoning, erythema or exudates…you can simply state HEENT examination is normal.)

- Labs and Imaging
    - Be able to present all laboratory findings in a systematic manner
    - It is fine to refer to paper/computer for lab data, but pertinent labs should be known (i.e. in a patient with a GI bleed, you should not need to look up his hemoglobin/hematocrit)
    - While it is essential to know the reports of imaging studies, every attempt should be made to review studies in person with the appropriate attending
- Summary/Clinical Synthesis
    - At the end of your presentation, you should give a brief summary.
    - This summary should NOT simply be a reiteration of the same information you provided previously
    - Your summary should demonstrate how you are synthesizing all of the pertinent information to formulate a patient's central clinical problem (i.e. demonstrate your clinical reasoning skills)
- Problem List and Plan
    - Always start with the patient's central clinical problem/most important/most imminent problem
    - You may group several problems together if they seem to be related, even if you do not have a confirmed diagnosis at the time (i.e. tachycardia, tachypnea, hypoxia and hemoptysis noted at the time of admission may later turn into pulmonary embolism on your problem list once the diagnosis has been confirmed)
    - State your specific plan for evaluating or treating each problem with your reasoning for why you think this is a reasonable course of action (i.e. for this patient with pneumonia I recommend we start ceftriaxone and azithromycin as I think this is most likely community acquired pneumonia. The patient is from home, has not been in contact with the health-care system and does not have any risk factors for multi-drug resistant bacteria.)

EPA 8: Give or receive a patient handover to transition care responsibility

Handoffs involve the delivery of patient information required to transfer responsibility from one person or team to another.[16] External as well as internal regulatory bodies have weighed in on the importance of good communication and handoffs. In 2003, Accreditation Council for Graduate Medical Education (ACGME) defined the limitations for duty hours for residents. The duty hours limits were intended to improve patient care by addressing sleep deprivation; however, it also necessitated more patient handoffs per admission. Moreover, a change in the workforce itself, including the growth of the

hospitalist movement has also contributed. The very nature of the shift work increases patient handoffs. In 2006, the Joint Commission on Accreditation of Healthcare Organizations required that hospitals standardize handoffs.[17] Studies of patient safety and patient errors have shown that miscommunication during handoffs lead to patient harm.[2,3] Transitions of care, including handoffs, are one of the six focus areas of the ACGME Clinical Learning Environment (CLER) program.[18] The AAMC Core EPAs include handoffs in EPA 8.[12]

Good handoffs are central to improving patient care and safety. Although handoff curricula have been emphasized by the AAMC, ACGME and Joint Commission, many institutions have not implemented one. In June 2012, a CDIM survey revealed that only a minority of respondents (approx. 15%) reported a structured handoff curriculum during the IM core clerkship and only 37% reported a structured handoff during the IM sub-internship. However 93% responded that subinterns performed handoff activities.[19]

Learning Objectives
1. Define the essential components of a successful handoff
2. Perform a verbal handoff
3. Perform a written handoff using a standardized tool

To ensure a successful transition in care, the entire process of the handoff must be standardized. For both the written and verbal handoffs the institution or program should adopt a template. Many institutions have developed various templates and mnemonics, and they are available online.[20] Many are also available within electronic health record systems. Next is to use an established location and time to perform handoffs. This is to optimize the environment for both receiver and sender.

Standardization of the receiver and sender characteristics are also important. For the sender/giver it is critical to identify both verbally and in writing who are the sickest patients. The sender must also emphasize a contingency plan for patients as well as check back with the listener to ensure understanding has occurred. Standard focus for the receiver include using active listening specifically utilizing a "read back" strategy for the 'to-do' list and action items. The receiver should also utilize note-taking and clarification questions during the handoff.

Although some EMRs can auto-populate written templates with information, data supports that face-to-face transmission is the best way to ensure effective handoffs of hospitalized patients.[20] Effective handoffs include both written and verbal components.

Most recently, Young et al. have explored ways to increase effectiveness of patient handoffs.[21] Understanding that patient handoffs are complex, they use cognitive load theory to break down the components of a handoff in order to fit to the level of the trainee.

The key elements of a successful handoff are:

- Patient assessment including illness severity
- Summary of patient stay to date
- Action items, specific (i.e.,: if K 3-3.5, then give 40 mEq)
- Current status of patient
- Contingency Plans **when to escalate
- Allergies/Meds/Age/Weight
- Date of admission
- Patient and hospital identifiers
- Code status

Signout/Handover Templates and Mnemonics

Here are three examples of mnemonics and templates, but there are others available online.[23,24]

- IPASS

  The most well-known, from Starmer et al., is the IPASS process which has been validated and shown to improve patient safety.[25]
    - Illness severity
    - Patient summary
    - Action list
    - Situation Awareness and contingency planning
    - Synthesis by receiver

- PACT [26]
    - Priority
    - Admissions
    - Changes
    - Task

- SIGNOUT[27]
    - Sick or not sick, do not resuscitate orders?
    - Identify patient information (name, MR#)
    - General hospital course (reason for admission)
    - New events of the day
    - Overall health status- getting better or worse?
    - Upcoming responsibilities with a plan, rationale
    - Tasks to complete overnight

It is important for the program to adopt one and to train faculty and trainees on the process. The ACGME requires residency programs to monitor handoffs and provide feedback to learners to ensure competency.[28] A checklist or feedback tool should be used. The key to success is to teach handoff

communication to early clinical learners then to assess their competency.[29] Role plays and paper cases are low fidelity and easy to implement and assess as first steps. Observing faculty handoffs and having students complete a checklist can serve as the next step. Finally faculty direct observation of student handoffs in the clinical setting should be done in order to provide appropriate and timely feedback of student performance.[30] An OSCE using standardized patients could be used as a summative assessment. Gaffney and colleagues recently developed a multi-patient, simulation-based tool, M-OSHE,[31] to assess verbal handoff performance of new residents. The M-OSHE materials are provided in Appendix C.

The most recent work on handoffs from Young et al examined the role of trainee characteristics and cognitive load in the accuracy of handoffs.[22] Evidence suggests that learners with more experience and more mature illness scripts give more accurate handoffs and experience less cognitive load. Not surprisingly, Gaffney and colleagues similarly found that prior training and more handoff experience was associated with higher performance in their study.[31] Strong consideration should be given to the level of the learner when designing training sessions and setting learner goals for assessment. Aylward and colleagues developed a milestones-based handoff evaluation tool for direct observation of interns.[32] The milestones-based nature of this evaluation tool can be easily adapted for use with subinterns.

EPA-9: Collaborate as a member of an interprofessional team
The makeup of the interprofessional healthcare team can be quite variable across hospitals and service lines; thus, even students completing a subinternship at one medical school may have different experiences with the team. Given this variability, it is not feasible here to outline the exact structure of the team; however, students should understand the typical roles of different healthcare professionals who commonly comprise the inpatient healthcare team and identify opportunities to collaborate with these different team members to enhance patient care.[33] Brief descriptions of common healthcare team members can be found in Appendix D, but students should consider how individuals with different strengths and experiences might stretch outside of these key features to contribute in additional ways. These team members typically include:

- Patient/Family/Health Care Proxy/Guardian
- Nursing
- Physical Therapy (PT)
- Occupational Therapy (OT)
- Speech Therapy
- Social Worker and Case Manager
- Pharmacist[34]
- Inpatient Consultant Teams
- Primary Care Physician and other continuity physicians
- Nutrition

Learning Objectives

1. Describe the different members of a health care team and their roles
2. Develop comprehensive care plans with a diverse interdisciplinary team to assist with admitting a patient to enhance patient care
3. Develop comprehensive daily management plans that include a diverse interdisciplinary team to further patient care
4. Develop safe and complete discharge plans with an interdisciplinary team including the team case manager and social worker to facilitate discharge planning
5. Communicate effectively with specialist/subspecialist colleagues to request consultation

Key team members and learning objectives associated with stages of an episode of care

Subinternship directors and physician team leaders should ensure that students are being oriented and introduced to the key team members at the beginning of each rotation. Additionally, educational leaders should identify and advocate for opportunities for subinterns to meaningfully participate as fully functional members of the interprofessional team in order to practice this EPA, be observed and given feedback from team members, and add value to patient care.[33] Some potential opportunities to develop meaningful roles to integrate subinterns into the team structure include:

Admission

The basic skills of data gathering and generation of an initial H&P are skills acquired during the 3rd-year IM clerkship. Subintern skills to be emphasized at the time of admission include:

- Comprehensive goal-directed data gathering to include expanded sources such as family members, PCPs, pharmacies, outpatient social workers, and the electronic medical record.
- Medication reconciliation including multi-source input.
- Generation of specialty-specific clinical questions and requesting a consultation from a specialist. See separate section (below) on how to request a consultation from a specialist/subspecialist.
- Subinterns should assess their patient's specific deficits and change from baseline, as well as their living situation. Questions about the living situation should include specific questions about homelessness, safety in the home as well as presence/absence of stairs, activities required to function independently, and potential available assistance at home. Physical therapy, speech therapy, occupational therapy, and case management can be involved as needed.

Daily Plan of Care

Skills and key team members associated with the daily plan of care include communication with the attending, resident, nurse, case manager, and support services such as PT and OT. Specific sub-internship skills would include:

- Care coordination: Whether this occurs in specific "multidisciplinary rounds"[35,36] or ad hoc based on patient needs, the subintern should be intimately involved in this process. If multidisciplinary rounds exist, subinterns should attend and participate to provide other team

members including nursing staff, pharmacy staff, OT, PT, and speech therapists with clinical information, answer questions, and take recommendations or concerns from the team back to the supervising physicians and the patient. Common issues addressed include discharge planning (see below), medical care, patient safety concerns, time-sensitive issues, and order clarifications.

- Follow-up discussions with consultants: As with the initial consultation request, this communication requires that the subintern has actively considered what information needs to be discussed. Are there clarifications the team needs regarding the recommendations in the consult note? Has there been a change in the patient's status that may potentially affect the consultant's recommendations? Is there uncertainty regarding an upcoming procedure or surgery that needs to be clarified?

- Communication with nurses: Subinterns should routinely communicate with the primary nurse assigned to each of her/his patients during morning pre-rounds to ask about any significant events or nursing issues that the team should address during the day and provide the nurse with their contact information to ensure the nurse can contact the subintern with any questions or concerns throughout the day. As patient data is reviewed and the plan is developed during rounds, the subintern should update the nurse of key test results and the plan of care; this is especially vital if rounds are conducted in the team room or when the patient's nurse is not present.

Discharge Planning

The management of the discharge transition is perhaps the most important and complex aspect of a patient's hospitalization. An effective and safe discharge requires several skills at the subintern level.

- Multidisciplinary care team members will need to start working on coordination of the discharge early in order to avoid delays and suboptimal resource allocations for the patient. Subinterns should consider the following when formulating and documenting an initial discharge plan:
  - Criteria for discharge including both medical and social
  - Likely timing of discharge
  - Where patient will go after discharge: to home (or to their previous level of care), to a "bridge" before returning home (such as subacute rehabilitation in a skilled nursing facility), or to a new long-term facility due to increasing needs.
  - Barriers to returning to previous levels of care. This will require the subintern to specifically list barriers so team members can begin to address these in the hospital, help determine whether these barriers are reversible, and identify resources to assist the patient in addressing these barriers long-term.
  - Specific new resources needed. For example, will the patient require home oxygen, home or outpatient physical therapy, financial assistance with medications, a walker, or a nebulizer. The care team can often help procure these resources or identify paperwork that must be completed in order to obtain certain services or equipment
  - Transportation needs at discharge

- Subinterns should communicate with other important providers including PCP, skilled nursing facility provider, key specialist continuity providers, home health services, care managers, and pharmacists.
- Medication reconciliation is a critical patient safety issue and may require communication with the PCP, specialty consultants, and pharmacists.[34] Specific identification and communication of new medications, discontinued medications, and dosing adjustments must be explicitly communicated in writing. Additionally, the order for any medication discontinued in the hospital should be canceled at the patient's outpatient pharmacy by someone on the inpatient care team; if this isn't done patients often will have these medications filled again next time they are due for any refills.

Requesting Consultations from Specialty/Subspecialty Colleagues (this section was adapted from the "Primer to the Internal Medicine Subinternship -- A Guide Produced by the Clerkship Directors in Internal Medicine"[7] with permission from the editors and authors.)
Physicians commonly request consultations for the following reasons: obtain expert advice on diagnosis and/or management, obtain assistance in performing a procedure or test, and arrange for more urgent outpatient follow-up.
- If the subintern and his/her primary team already understand what is going on with a patient and are able to provide definitive care for that patient, then there is little use in requesting a specialty/subspecialty consultation. In other words, before requesting a consult, consider how the consultant's recommendation may change the primary team's management.
- If the primary team deems that a consultant would add to the patient's care, then the following key points should be employed to optimize the entire process of requesting the consult as well as the service provided by consultant. "Curbsiding", or asking consultants for an opinion without formally being involved in the patient's care, may seem convenient but is highly discouraged for obvious medical-legal reasons. Additionally, a prospective cohort study found that 60% of management advice after formal consultation differed from that given in the curbside consultation; this was mostly due to inaccurate or incomplete information given to the consultant during "curbsiding".[37]
  - Subintern must formulate a specific question (or reason) for requesting the consult and discuss this with the supervising team so that all team members are in agreement with the specific question/reason for the consultant.
  - Subintern and primary team should perform the appropriate initial work-up and have relevant test results ready before calling the consultant.
  - Ensure the supervising attending faculty and/or resident is present in the same room while subintern calls the consultant, in case the subintern needs more experienced support.
  - Call the consultant(s) early in the day, preferably during morning rounds as plans for the patient's care are finalized; or right after morning rounds, at the latest.
- The following step-by-step guide can help the subintern communicate more effectively and

systematically (either via telephone or in person) when requesting a consult from a specialty/subspecialty colleague:

- ➢ Make sure you have **contacted the right person** before going any further with the conversation.
    - ○ "Hello, Dr._____. Are you the consulting resident/fellow/attending for the _____ (e.g., GI, Renal, General Surgery, etc.) service this month?"
- ➢ Clearly **identify yourself** and the service you are on.
    - ○ "My name is _____ and I'm the subintern on the _____ (e.g., Medicine, etc.) service at _____ (Hospital name) this month, and I would like to request a consult."
- ➢ Provide **patient's name, medical record number, and hospital location**.
- ➢ **State your question** (or reason) for the consult *up front*—be as specific as you can. This crucial step immediately captures your consultant's attention and helps him/her focus in on the presentation you are about to give.
    - ○ "Our team is requesting your help for:
        - ■ Advice on management of our patient who has a small bowel obstruction."
        - ■ Advice on diagnosis for our patient who we suspect has systemic lupus."
        - ■ Performing a colonoscopy for our patient who is having persistent rectal bleeding."
- ➢ Give **relevant clinical information** (in standard SOAP format to help you and your listener follow a systematic framework).
    - ○ "Mr. _____ is a ___ year-old man with a history *significant* for (don't report the whole PMH, only what that particular consultant needs to know) _____ who was admitted from the ED yesterday after he presented with _____ (chief complaint and *abbreviated* HPI) and was found to have _____, _____, etc. on physical exam and _____, _____, etc. on labs/radiology/ECG."
- ➢ Give your **clinical impression** and brief hospital course.
    - ○ "Based on his presentation, our working diagnosis is _____."
    - ○ "This is what we've done for him thus far: _____."
- ➢ State the **urgency** of the clinical situation to let your consultants know if this is a patient they need to see now or a patient who can wait until later in the day or even until the following day to be evaluated. Be prepared to give additional details to back up your clinical impression, particularly in urgent situations.
    - ○ "This man is still actively bleeding and his systolic BP has remained in the 90s despite aggressive volume resuscitation. We'd appreciate it if you would see him now."
    - ○ "Volume status, serum potassium, and acid-base status are all stable. She has no clinical signs of uremia at this time, and she is not oliguric or anuric.

Therefore, this consult can likely wait until later today or even tomorrow."

➢ Consider **reiterating your question** (or reason) for the consult if the steps above have taken longer or necessitated a more involved conversation.

○ "So again, we would like you to evaluate this patient for _____ so that you can give us some advice on _____."

➢ Using this systematic approach, the ideal total consult time should be less than 1 minute.

Effective communication principles around the consultation process were established by Goldman and colleagues[38] and later updated by Salerno and colleagues[39]. These key principles were applied to this step-by-step guide and have also been used by others to train medical students[40] and residents[41] in consultation request skills. In their study involving residents, Podolsky and colleagues created a mnemonic aptly named CONSULT[41] that can easily be placed on a pocket-sized card to emphasize these key communication concepts. This card can be found in Appendix E of this document.

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Chapter 3:   Patient evaluation skills – recognizing sick vs. non-sick patients

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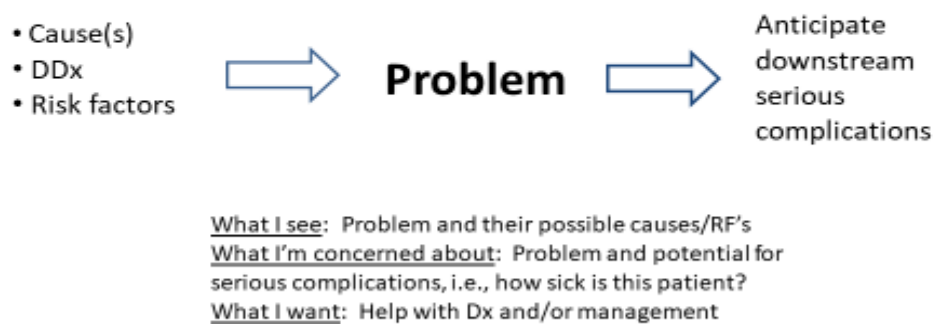T. Robert Vu, MD

Background

Interns are typically the first members of a care team to be informed of a patient's clinical deterioration and/or abnormal test results in acute care settings. As such, they must be able to recognize acutely ill patients who require urgent or emergent care, to initiate timely evaluation and management, and to seek appropriate help.[1] In order for new interns to possess these core skills on day 1 of internship, medical students by extension, need to learn and to become competent in these same core skills by the end of medical school. The subinternship is an ideal time to coach and evaluate this skill. Common examples of serious problems and conditions Internal Medicine trainees typically encounter and likely would get called about by concerned nursing staff include (but are not limited to) the following:

1. Hyperglycemia
2. Fever
3. Altered Mental Status
4. Blood pressure derangements
   4a. Hypotension/shock
   4b. Hypertensive Urgency/Emergency
5. Dyspnea/hypoxemia
6. Chest Pain
7. Arrhythmias
8. Electrolyte Derangements
   8a. Hyponatremia
   8b. Hypokalemia
   8c. Hyperkalemia
9. Acute kidney injury
10. Acute pain

Instead of developing actual cases to illustrate these 10 problems/conditions, this section will provide a structured guide subinternship directors and teaching faculty can use to tailor their own teaching cases according to their institution's individualized needs. The format for each of these 10 problems was adapted from the Internal Medicine On Call Lange Medical Book (with permission from the authors) for

its undifferentiated problem-based approach and stepwise thought process that occurs during the cross-coverage experience to help subinterns develop their patient evaluation skills.[2] Figure 1 illustrates a basic schema that subinterns can use to evaluate their patients' new/acute problems and, in turn, help inform their pertinent data gathering in hypothesis-driven fashion. The Reporter-Interpreter-Manager-Educator framework (RIME) can be employed to teach and evaluate the clinical skills of subinterns.[3] Although the subinternship is a rotation that fosters growing independence, subinterns are still expected to ask for help as the situation warrants. As such, chapter 4 addresses this important topic of knowing when to ask for help in more detail.

Figure 1. Basic schema to evaluate/assess patients and to gather pertinent data

- Cause(s)
- DDx
- Risk factors

Problem

Anticipate downstream serious complications

What I see: Problem and their possible causes/RF's
What I'm concerned about: Problem and potential for serious complications, i.e., how sick is this patient?
What I want: Help with Dx and/or management

Learning Objectives

By the end of the rotation, subinterns should be able to:

1. Gather appropriate clinical data from all appropriate sources (e.g., patient, family, nurse, medical records) in hypothesis-driven fashion to address the main clinical problem (Reporter function of RIME)
2. Analyze and synthesize the collected clinical data set to formulate a prioritized differential diagnosis for the main clinical problem (Interpreter function of RIME)
3. Recognize which clinical situations require additional assistance from upper level resident, faculty attending, and/or specialty consultants
4. Develop initial diagnostic and/or therapeutic management plans for the main clinical problem (Manager function of RIME)
5. Prioritize problem list according to degree of clinical importance

1. **Hyperglycemia**

    1. Problem: A nurse on the floor calls you on a cross-cover patient saying the patient with diabetes requiring insulin has a 10 pm fingerstick blood sugar of 350.

    2. Immediate questions to consider
        a. What else might you ask the nurse?
            i. What are her vital signs?
            ii. What is her general appearance?
            iii. Does she have any complaints?
            iv. When did she last eat or drink?
            v. Are there any snacks or drinks from outside the hospital?
            vi. What are her recent basic chemistry labs?
            vii. When did you last give her insulin?
            viii. Can you please repeat the fingerstick blood sugar and send a basic metabolic profile down to lab?

    3. Differential Diagnosis
        a. Generate your preliminary differential diagnosis as you make your way to see the patient (elevator thoughts) based upon the chief complaint, vital signs, some brief epidemiologic features (age, sex), and the sign-out information that was given
            i. Hyperglycemia and possibly diabetic ketoacidosis (DKA) due to another acute medical condition such as impending sepsis or myocardial infarction.
            ii. Hyperglycemia due to medication side effect such as steroids, dietary indiscretion
            iii. Lack of insulin administration

    4. What additional information do you need upon seeing the patient?
            i. Acute History key points – Review of sign-out information, review of recent notes and reason for admission, review of blood sugar readings over the last 24-48 hours
            ii. Review of medications including scheduled and prn insulin, review if insulin was held or got dropped off from medication list, review if any steroids were given
            iii. Past History key points (such as prior history of hyperglycemia, recent hemoglobin A1c, predisposition to infection).
            iv. Physical exam key points (focus on conditions that could precipitate hyperglycemia or DKA such as a new pneumonia, cardiac arrhythmia, ischemia or localizing signs for a nidus of infection)
            v. Lab data – review most recent chemistry. In addition, send new basic chemistry profile to lab, check for anion gap, check for urine ketones
            vi. Imaging – if any suspicion for pneumonia, abdominal x-ray based on exam and complaint
            vii. Other studies –12 lead EKG if any suspicion for acute coronary ischemia

    5. Diagnostic/clinical reasoning step ("Interpreter" function of RIME framework):
        a. Based on information you gathered what is the differential diagnosis starting with the

most likely? What features support each diagnosis and are there any features that do not support?
   b.   Is this patient sick or not sick?

6.   Plan
   a.   Treatment
   b.   Additional studies/imaging (if appropriate)
   c.   Consultation (if appropriate)

2. Fever in Hospitalized Patient

1. Problem: You are called to see a patient (day X of hospitalization) because she now has a fever of 102°F.

2. Immediate questions to consider
   a. What else might you ask the nurse or consultant?
      i. Was this patient febrile on admission or is this a new fever?
      ii. What are the rest of her vital signs? Essential to note her heart rate and blood pressure to determine how sick she is and whether she might be septic. Also, her respiratory rate and SaO2 may direct you to evaluate her lungs further and increased respiratory rate could be an early sign of infection
      iii. Is she having any other symptoms?
      iv. Does she have a urinary catheter or central line?
   b. Does this patient have any predisposing factors to infection, such as indwelling catheters, immunosuppression, skin breakdown, prosthetic heart valve, etc.?

3. Differential Diagnosis
   a. Generate your preliminary differential diagnosis as you make your way to see the patient (elevator thoughts) based upon the chief complaint, vital signs, some brief epidemiologic features (age, sex), and the sign out information that was given.
      i. Infectious (consider the patient's risk factors for infection)
         1. Pneumonia (hospital acquired)
         2. Septic emboli
         3. Urinary tract infection
         4. Line infection
         5. Skin/soft tissue infection
         6. Gastrointestinal tract infection (C. difficile or abscess)
         7. CNS infection
         8. Osteomyelitis or abscess
         9. Endocarditis
      ii. Non-infectious
         1. Vascular
            a. DVT/PE
            b. Large hematoma
            c. Myocardial infarction
            d. Ischemic bowel
            e. Fat emboli
         2. Inflammatory
            a. Drug fever
            b. Post-transfusion fever
            c. Contrast dye reaction
            d. Neoplasm
            e. Gout/pseudogout
         3. Autoimmune (the overlap of vascular and inflammatory)
            a. Autoimmune disease flare

   iii. Hyperthermia/Thermoregulatory Dysregulation
     1. Serotonin syndrome
     2. Neuroleptic malignant syndrome

4. What additional information do you need upon seeing the patient?
  a. Acute history key points - is the patient symptomatic? If so, what are the associated symptoms with the fever? based on differential diagnosis
  b. Past History key points - history of infection, autoimmune disease, immunocompromised, permanently implanted devices (pacemaker/ICD, AV graft, chemotherapy port, VP shunt, etc)
  c. Physical exam key points - note crackles, diminished breath sounds on pulmonary exam. Note tenderness and character of bowel sounds if there are GI complaints. Check for skin breakdown and central lines for possible infection. Check site of permanently implanted catheters/devices (if applicable)
  d. Lab data - Complete blood count with differential, complete metabolic panel, urinalysis, blood cultures (potentially), stool culture/fecal lactoferrin, stool c. diff toxin if gastrointestinal infection suspected
  e. Imaging - Chest x-ray, (MRI for osteomyelitis)
  f. Other studies - lumbar puncture if CNS infection suspected.

5. Diagnostic/clinical reasoning step ("Interpreter" function of RIME framework):
  a. What is the most likely diagnosis (based on gathered data set)?
  b. Is this patient sick (CNS Infection) or not sick (asymptomatic)?
  c. Are there signs of hemodynamic instability, sepsis, or end-organ damage? (If so, should be empiric treatment immediately if infection is being considered)

6. Plan
  a. Treatment
  b. Additional studies/imaging (if appropriate)
  c. Consultation (if appropriate)

3. Altered Mental Status

1. Problem: You are paged by a nurse to evaluate a 75-year-old patient admitted for pneumonia who is combative and agitated.

2. Immediate questions to consider
   a. What else might you ask the nurse?
      i. What are the patient's current vital signs and oxygen saturation?
      ii. Has the patient's finger stick glucose been checked recently?
      iii. When did this problem begin (time course)?
      iv. What is the patient admitted to the hospital for?
      v. Is the patient a potential harm to him/herself or to the staff?
      vi. Any preceding or resultant head trauma/falls?
      vii. Any associated alarming symptoms such as headache, photophobia, stiff neck, nausea, vomiting, focal weakness, slurred speech, or ataxia?
      viii. Have any new medications been recently administered?
      ix. Any history of ethanol or illicit drug use?
      x. What is the Confusion Assessment Method (CAM)?

3. Differential Diagnosis
   a. Generate your preliminary differential diagnosis as you make your way to see the patient (elevator thoughts) based upon the chief complaint, vital signs, some brief epidemiologic features (age, sex), and the sign out information that was given.
      i. Does this patient have dementia or delirium?
      ii. Consider this patient's risk factors for delirium
      iii. Consider the mnemonic **AEIOU-TIPPS** for delirium:
      A – alcohol, acid-base
      E – encephalopathy (hepatic/metabolic, hypertensive), electrolytes (Na, Ca), endocrine (thyroid, adrenal)
      I - infections
      O – overdose, oxygen (hypoxia)
      U - uremia
      T - trauma
      I – insulin (hypo/hyperglycemia)
      P – pharmacy (medication side-effects)
      P - psychiatric
      S – stroke (hemorrhagic, ischemic, embolic), seizure, shock

4. What additional information do you need upon seeing the patient?
   a. Acute history key points – What is the time frame/acuity of onset of symptoms? What is the patient's baseline mental status? Were any new medications recently administered? What is the current (inpatient) medication list compared to outpatient medication list? Did the patient have a recent fall? Did the patient have any specific complaints prior to this episode?
   b. Past history key points – Does the patient have a history of dementia? What about a history of alcohol or substance abuse? Is the patient immunosuppressed or have a history of

HIV? Does the patient have a history of psychiatric disease?
c. Physical exam key points, based on more complete history and your revised DDx – What is the patient's mental status: agitated, lethargic, confused? What are the vital signs and oxygen saturation? Is there any evidence of head trauma? Is there evidence of respiratory distress or an abnormal ventilation pattern? Does the patient appear to be in pain? Is the patient hallucinating? Are there signs of liver failure? Are focal neurologic deficits present on exam? Does the exam suggest an infectious source?
d. Lab data – Finger stick glucose, basic metabolic panel and liver function tests, serum osmolality and osmolar gap, complete blood count and differential, arterial blood gas, ammonia level, toxicology screen, TSH and free T4, drug levels (as warranted)
e. Imaging – Head CT, Chest x-ray
f. Other studies – EKG

5. Diagnostic/clinical reasoning step ("Interpreter" function of RIME framework):
a. What are the leading diagnoses after consideration of all available data?
b. Is this patient sick or not sick? In other words, hemodynamically stable? Does the patient have a stable airway? Does the patient require a higher level of care?
c. Does the patient's clinical presentation represent a specific toxidrome or drug toxicity? Is there an antidote available?
d. Does the mental status change represent delirium or dementia? What reversible causes can be identified in this patient?
e. Is the patient an imminent harm to him/herself or others?
f. What is the mini-cog? CAM?

6. Plan
a. Treatment – are physical or chemical restraints warranted? Or will a bedside sitter suffice?
b. Additional studies/Imaging (if appropriate)
c. Consultation (if appropriate)

4. **Blood Pressure Derangements**

   4a. Hypotension/shock

   1. Problem: New development of hypotension reported by nurse

   2. Immediate questions to consider
      a. What else might you ask the nurse?
         i. What are the other vital signs?
         ii. What is the patient's general appearance?
         iii. Does the patient have any symptoms: fevers, chills, nausea/vomiting/diarrhea, abdominal pain, altered mental status, chest pain, dyspnea?
         iv. What are the patient's meds – any new or changed?
         v. What are the other vital signs and urine output?
      b. What is her Quick Sequential (Sepsis-related) Organ Failure Assessment (qSOFA) score based on respiratory rate of at least 22/min, altered mentation, and a systolic blood pressure < 100 mm Hg. Two or more qSOFA points near the onset of infection are associated with poorer outcomes. Available as an app (**Sepsis**)

   3. Differential Diagnosis
      a. Generate your preliminary Differential Diagnosis while on the way to see the patient (elevator thoughts), with particular focus on serious/life threatening conditions – in a systematic manner, use the fundamental physiologic derangements causing shock as a guide, and use the patient's demographics (age, sex), the signout information that was given by the primary team, and the information from the nurse (above) to generate your differential diagnosis
         i. Hypovolemic shock
            1. Volume depletion (GI, urinary losses)
            2. Hemorrhagic (GI, retroperitoneal)
            3. Interstitial fluid redistribution (anaphylaxis)
         ii. Cardiogenic shock
            1. Acute MI/ACS
            2. Cardiomyopathy
            3. Arrhythmic
         iii. Obstructive shock
            1. Constrictive pericarditis
            2. Cardiac tamponade
            3. Massive PE
            4. Tension pneumothorax
            5. Acute pulmonary hypertension
         iv. Distributive shock (vasodilatory)
            1. Septic
            2. Pancreatitis
            3. Cirrhosis
            4. Anaphylactic
            5. Neurogenic
         v. Endocrinologic shock
            1. Adrenal crisis

> 2. Thyroid storm

4. Additional data needed:
   a. Acute key history points: All of the items in 2a above
   b. Past history key points: known cardiac disease, known adrenal insufficiency or currently/recently on steroids, hypothyroid, cardiac risk factors, allergies, venous thromboembolism risk factor, any medications that can decrease blood pressure (ACE inhibitor, angiotensin receptor blocker, alpha blocker, beta blocker, calcium channel blocker, diuretic)
   c. Physical exam key points based on patient's history and your revised differential diagnosis
      i. Evaluate all vital signs, urinary output, adequacy of skin perfusion, mental status, cardiac exam, lung exam to assess end-organ perfusion and volume status
      ii. Use exam to determine: Underlying pathophysiologic derangement. If an immediately reversible condition is present. Where patient is on the spectrum of hypotension and shock?
   d. Initial laboratory data: BMP, CBC, Coagulation studies, lactate, cardiac enzymes, LFTs, ABG
   e. Imaging per diagnostic suspicion: Chest x-ray, Spiral CT, Abdominal CT
   f. Other diagnostic studies: EKG and prior tracings for comparison

5. Diagnostic/clinical reasoning step ("Interpreter" function of RIME framework):
   a. After integrating and synthesizing all the information you have gathered, what is the differential diagnosis starting with the most likely cause for this patient? What features support each diagnosis and are there any features that do not support?
   b. What is/are the most likely underlying cause(s) of this patient's shock? As warranted, provide your rationale for this answer.
   c. Is this patient sick or not sick? Is there history, exam, or lab data to support end-organ damage?

6. Plan
   a. Treatment – initial emergent supportive care
   b. Additional studies/imaging (if appropriate)
   c. Consultation (if appropriate)

4b. Hypertensive urgency/emergency

1. Problem: You are called to see a patient with a blood pressure greater than 220/110 mmHg

2. Immediate questions to consider
    a. What else might you ask the nurse?
        i. Ask the nurse about the following symptoms: chest pain, dyspnea, headache, blurry vision, altered mental status
        ii. What are the patient's known underlying medical problems (from the nurse or signout data)
        iii. Ask the nurse for the patient's other vital signs and urine output
        iv. What are the patient's medications? Any recently started or stopped?

3. Differential Diagnosis
    a. Generate your preliminary differential diagnosis as you make your way to see the patient (elevator thoughts) based upon the chief complaint, vital signs, some brief epidemiologic features (age, sex), and the sign out information that was given:
        i. Cardiovascular
            1. Essential hypertension
            2. Acute coronary syndrome
            3. Acute left ventricular dysfunction – heart failure, pulmonary edema, volume overload
            4. Acute aortic dissection
        ii. Neurological
            1. Intracranial hemorrhage/subarachnoid hemorrhage
            2. Stroke
            3. Acute anxiety
        iii. Endocrine
            1. Pheochromocytoma
            2. Adrenal syndromes i.e. mineralocorticoid or glucocorticoid excess
            3. Thyroid crisis
        iv. Renal
            1. Renal artery stenosis
            2. Renal parenchymal disease
            3. Acute kidney injury
        v. Pregnancy
            1. Eclampsia
            2. Pre-eclampsia
        vi. Drug ingestion
            1. Cocaine
            2. Amphetamines
            3. Sympathomimetics
        vii. Drug withdrawal
            1. Clonidine
            2. Alcohol
            3. Beta blocker

4. Additional information needed:
   a. History – All of the items in question 2 a,b,d
   b. Past history key points:
      i. Known cardiovascular, neurologic, endocrine, renal conditions
      ii. Cardiac risk factors
      iii. family history of hypertension
      iv. Alcohol/drug use
      v. Hypertension history, compliance issues
      vi. Pregnancy
   c. Physical exam key points = assess for end organ damage:
      i. Vital Signs
      ii. CV: enlarged heart, S3, S4, peripheral edema, elevated JVP
      iii. Lungs – crackles
      iv. Abdomen – renal bruits
      v. Neurologic exam - stroke, meningismus
      vi. Fundoscopic exam – hemorrhages, exudates, papilledema
   d. Initial Lab data – Basic metabolic panel, UA, EKG
   e. Imaging – Chest x-ray if HF suspected, Head CT if stroke/bleed suspected

5. Diagnostic/clinical reasoning step ("Interpreter" function of RIME framework):
   a. Integrating and synthesizing the above data, what is the likely diagnosis and differential diagnosis? What features support each diagnosis?
   b. Is this patient sick (Hypertensive emergency with end-organ dysfunction) or not sick (Hypertensive urgency)?
   c. Are there signs of target organ involvement?
      i. CV: acute coronary syndrome, heart failure, dissection
      ii. Neurologic: altered mental status, CVA, intracranial bleed
      iii. Renal: hematuria, acute kidney injury
      iv. Retinal: hemorrhages or papilledema

6. Plan
   a. Treatment
   b. Additional studies/imaging (if appropriate)
   c. Consultation (if appropriate)

5. Dyspnea and/or Hypoxemia

1. Problem: Acute onset dyspnea

2. Immediate questions to consider:
   a. What else might you ask the nurse?
      i. What is patient's general appearance?
      ii. What are the patient's current vital signs and oxygen saturation?
      iii. Is the patient symptomatic? Symptoms may include but are not limited to the following: fever, chills, chest pain/pressure, pleuritic chest pain, cough, sputum production.
      iv. Request a STAT 12-lead EKG while you're on your way to see the patient.

3. Differential Diagnosis
   a. Generate your preliminary differential diagnosis as you make your way to see the patient (elevator thoughts) based upon the chief complaint, vital signs, some brief epidemiologic features (age, sex), and the sign out information that was given -- with particular focus on serious/life threatening conditions.
      i. Pulmonary: Pneumonia including aspiration, pulmonary embolism, acute respiratory distress syndrome, pneumothorax, pleural effusion, atelectasis/collapse.
      ii. Cardiac: Pulmonary edema due to STEMI, non-STEMI, type 2 NSTEMI (demand ischemia), increased fluid administration (underlying left ventricular dysfunction), pericardial tamponade.
      iii. Other: Severe metabolic acidosis with respiratory compensation, respiratory alkalosis due to sepsis

4. What additional information do you need upon seeing the patient?
   a. Acute History key points (e.g., current symptoms; current main problem(s); and current medications, etc)
   b. Past History key points (e.g., history of coronary disease, congestive heart failure, chronic kidney disease, pulmonary disease, etc.)
   c. Physical exam key points, based on patient's Hx and your revised differential diagnosis
      i. General appearance of the patient
      ii. All vital signs, including oxygen saturation
      iii. Examine the following: JVD, pulmonary exam, cardiac exam, dependent edema (extremities and pre-sacral), etc.
      iv. Change in weights and fluid balance (including urine output).
   d. Lab data (e.g., BNP, troponin, electrolytes, creatinine, CBC, etc.)
   e. Imaging (e.g., chest x-ray if suspecting pulmonary edema or pneumonia)

5. Diagnostic/clinical reasoning step ("Interpreter" function of RIME framework):
   a. After integrating and synthesizing all the information you have gathered, what is the differential diagnosis starting with the most likely cause of dyspnea. What features support each diagnosis and are there any features that do not support?
   b. Is this patient sick or not sick?

6. Plan
    a. Treatment
    b. Additional studies/imaging (if appropriate)
    c. Consultation (if appropriate)

6. Chest Pain

1. Problem: Acute onset of chest pain

2. Immediate questions to consider
   a. What else might you ask the nurse or consultant?
      i. What are the vital signs?
      ii. When did it start?
      iii. Where is the chest pain located?
   b. What things should be considered as you make your way to see the patient? (elevator thoughts)
      i. What is the likelihood that this is one of the most serious causes (the "cannot miss" diagnoses) of chest pain, such as myocardial infarction, pulmonary embolus, aortic dissection, or pneumothorax?
      ii. Consider what testing may be necessary, such as an EKG, Chest x-ray, or contrasted CT scan.

3. Differential Diagnosis
   a. Generate your preliminary differential diagnosis as you make your way to see the patient (elevator thoughts) based upon the chief complaint, vital signs, some brief epidemiologic features (age, sex), and the sign out information that was given.
      i. Cardiac
         - **Acute myocardial infarction***
         - Angina pectoris
         - Acute Pericarditis
      ii. Vascular
         - **Acute aortic dissection***
         - **Pulmonary embolism***
      iii. Pleural
         - **Pneumothorax***
         - Pneumonia/Pleuritis
         - Pleurodynia
      iv. Gastrointestinal
         - Gastroesophageal reflux
         - Esophageal spasm
         - Gastritis
         - Peptic ulcer disease
         - Biliary colic
         - Pancreatitis
      v. Musculoskeletal
         - Costochondritis
         - Muscle strain/spasm
         - Rib fracture/contusion

         *"Cannot miss" diagnoses

4. What additional information do you need upon seeing the patient?
    i. Acute History key points (onset, character and location of pain, and associated symptoms), based on differential diagnosis
    ii. Past History key points (i.e. history of CAD, etc).
    iii. Physical exam key points based on differential diagnosis. (is the chest pain reproducible, pleuritic? Is there a new murmur? Are there breath sounds throughout the lungs? Are there abnormalities in the vital signs?)
    iv. Lab data - troponin, d-dimer if PE probability is low, possibly amylase/lipase if considering pancreatitis
    v. Imaging - EKG, chest x-ray, (spiral CT of the chest if concerned about pulmonary embolus or aortic dissection)
    vi. Other studies - endoscopy if considering peptic ulcer disease.

5. Diagnostic/clinical reasoning step ("Interpreter" function of RIME framework):
    a. What is the most likely diagnosis (based on gathered data set)?
    b. Is this patient sick (having an acute myocardial infarction) or not sick (has some gastroesophageal reflux)?
    c. Do you need to call a consultant immediately or perform a procedure? (myocardial infarction, tension pneumothorax)

6. Plan
    a. Treatment
    b. Additional studies/imaging (if appropriate)
    c. Consultation (if appropriate)

7. Arrhythmias

1. Problem: New tachyarrhythmia or bradyarrhythmia seen by RN on telemetry monitor.

2. Immediate questions to consider:
    a. What else might you ask the nurse?
        i.   What are the patient's current vital signs and oxygen saturation?
        ii. Is the patient conscious?
        iii. Is the patient symptomatic? Symptoms may include but are not limited to the following: altered mental status, dizziness, lightheaded, chest pain/discomfort, dyspnea, palpitations, abdominal pain, nausea/vomiting.
        iv. What is patient's general appearance?
        v.   Request a printout of rhythm strip(s) and STAT 12-lead EKG while you're on your way to see the patient.

3. Differential Diagnosis
    a. Generate your preliminary differential diagnosis as you make your way to see the patient (elevator thoughts) based upon the chief complaint, vital signs, some brief epidemiologic features (age, sex), and the sign out information that was given -- with particular focus on serious/life threatening conditions.
        i.   Tachyarrhythmias: ventricular tachycardia, supraventricular tachycardia (most commonly AV nodal re-entry), atrial flutter, atrial fibrillation, atrial tachycardia, accelerated junctional rhythm, multifocal atrial tachycardia, sinus tachycardia (due to sepsis, volume depletion, volume overload, pain, anxiety, etc).
        ii. Bradyarrhythmias: Second or third-degree AV block, junctional rhythm, idioventricular rhythm, sick sinus syndrome, medication-induced (beta blocker, calcium channel blocker, clonidine, digoxin, acetylcholinesterase inhibitor, amiodarone, etc).

4. What additional information do you need upon seeing the patient?
    a. Acute History key points (e.g., any current symptoms; current main problem(s); current medications and any new medication changes within past 24 hours, etc)
    b. Past History key points (e.g., history of CAD, cardiomyopathy, prior arrhythmias, COPD, obstructive sleep apnea, pulmonary embolism, cancer, chronic kidney disease, etc)
    c. Physical exam key points, based on patient's Hx and your revised differential diagnosis
        i.   General appearance of the patient
        ii. All vital signs, including oxygen saturation
        iii. Examine the following to assess adequacy of end-organ perfusion: mental status, remainder of neurological exam (as warranted), cardiac exam, lung exam, peripheral pulses, skin on distal extremities, and urine output measurement.
        iv. Examine the following to assess the patient's volume status: cardiac exam (including JVP to estimate the CVP), lung exam, abdomen for ascites, and dependent edema (extremities, pre-sacral, etc).
    d. Lab data (e.g., serum K, Mg, calcium, creatinine, Hgb, troponin, BNP, digoxin level, etc)
    e. Imaging (e.g., chest x-ray if suspecting pulmonary edema or pneumonia; Echo if

suspecting acute decompensated HF, etc)
   f. Other studies: 12-lead EKG and prior tracings for comparison

5. Diagnostic/clinical reasoning step ("Interpreter" function of RIME framework):
   a. After integrating and synthesizing all the information you have gathered, what is the differential diagnosis starting with the most likely type of arrhythmia for this patient? What features support each diagnosis and are there any features that do not support?
   b. What is/are the most likely underlying cause(s) of this arrhythmia? As warranted, provide your rationale for this answer. For example, was this patient's ventricular tachycardia most likely caused by severe hypomagnesemia and hypokalemia due to his active EtOH abuse and proton pump inhibitor use.
   c. Is this patient sick or not sick?

6. Plan
   a. Treatment
   b. Additional studies/imaging (if appropriate)
   c. Consultation (if appropriate)

8. **Electrolyte disturbances**

   8a. Hyponatremia

1. Problem: You are called by a nurse during cross-cover that a patient has a sodium of 115 mEq/L in his morning labs.

2. Immediate questions to consider
    a. What else might you ask the nurse?
        i. What is his general appearance?
        ii. What are the vital signs?
        iii. Is the patient getting any intravenous fluids?
        iv. What are his other labs?
        v. Is there any psychiatric history?
        vi. What was his sodium prior to this?
        vii. What are the rest of the electrolytes and glucose?
        viii. Is he getting any diuretics?
        ix. Is there any change in mental status?
        x. Is the patient vomiting or having any diarrhea?

3. Differential Diagnosis
    a. Generate your preliminary differential diagnosis as you make your way to see the patient (elevator thoughts) based upon the chief complaint, vital signs, some brief epidemiologic features (age, sex), and the sign out information that was given [choose from and categorize]:
        i. Hypovolemic versus euvolemic versus hypervolemic hyponatremia
        ii. Medication-induced such as diuretics
        iii. Heart failure or cirrhosis
        iv. Syndrome of inappropriate ADH secretion (SIADH)-diagnosis of exclusion
        v. Hypothyroidism
        vi. Adrenal insufficiency
        vii. Secondary process such as neurosurgery or lung process/malignancy/pneumonia
        viii. Primary polydipsia
        ix. Marked hyperglycemia

    Explain your reasoning for each diagnosis. Remember that serum sodium disturbances are really disorders of water balance.

4. What additional information do you need upon seeing the patient?
    a. Acute history key points – Review of signout information, review of recent notes and reason for admission, review of labs over the last 24-48 hours, diarrhea, vomiting, diuretic use etc.
    b. Review of medications including scheduled and prn medications, antipsychotics, diuretics history
    c. Past history key points – pertinent medical/social history to elucidate heart failure,

cirrhosis, psychiatric or endocrine disorders?

    d. Physical exam key points (assess for volume status, ins and outs, lung and neurological exam, signs of malignancy, signs of cirrhosis or heart failure)

    e. Lab data – review most recent chemistry and lab trends

    f. Imaging – Chest x-ray, head CT in certain cases.

    g. Other studies – Serum and urine osmolality, glucose levels, serum creatinine level, urine sodium, uric acid level, TSH and cortisol level as indicated. Assessment of diet intake.

5. Diagnostic/clinical reasoning step ("Interpreter" function of RIME framework):

    a. Based on information you gathered what is the differential diagnosis starting with the most likely. What features support each diagnosis and are there any features that do not support?

    b. Is this patient sick or not sick?

6. Plan

    a. Treatment

    b. Additional studies/imaging (if appropriate)

    c. Consultation (if appropriate)

8b. Hypokalemia

1. Problem: You are cross-covering a patient for a colleague on a weekend. The patient is in the hospital with a partial small bowel obstruction. The patient has been NPO for several days. Nurse calls you saying the patient complains of muscle cramps and that the morning labs just came back with a potassium of 2.5 mEq/L.

2. Immediate questions to consider

    a. What else might you ask the nurse?

        i. What is her general appearance?

        ii. What are the vital signs?

        iii. What intravenous fluids is the patient receiving?

        iv. What are her other labs?

        v. Is she having any diarrhea?

        vi. What was her potassium prior to this lab?

        vii. Is there a magnesium level on her?

        viii. Is she getting any diuretics?

        ix. Is she on a monitored bed?

        x. Can you please do a 12-lead EKG?

3. Differential Diagnosis

    a. Generate your preliminary differential diagnosis as you make your way to see the patient (elevator thoughts) based upon the chief complaint, vital signs, some brief epidemiologic features (age, sex), and the sign out information that was given.

        i. Decreased potassium intake--not enough in the IV fluids

ii. Too much insulin for any reason

iii. Diuretics in a patient especially if npo

iv. Urinary or GI losses

v. Magnesium deficiency

vi. Alkalemia

vii. Hypokalemic periodic paralysis (rare)

viii. Medications or agents that could be causing this; inhaled beta agonists, barium intoxication, chloroquine, antipsychotics, etc. (rare)?

Explain your reasoning for each diagnosis.

4. What additional information do you need upon seeing the patient?
   a. Acute history key points – Review of signout information, review of recent notes and reason for admission, review of labs over the last 24-48 hours, diarrhea, vomiting, diuretic use etc.
   b. Review of medications including scheduled and prn medications, IV fluids and additives to IV fluids
   c. Past History key points – any prior history of hypokalemia?
   d. Physical exam key points (assess for respiratory muscle weakness)
   e. Lab data – review most recent chemistry and lab trends
   f. Imaging – likely not needed at this time
   g. Other studies – 12-lead EKG to look for EKG manifestations of hypokalemia

5. Diagnostic/clinical reasoning step ("Interpreter" function of RIME framework):
   a. Based on information you gathered what is the differential diagnosis starting with the most likely. What features support each diagnosis and are there any features that do not support?
   b. Is this patient sick or not sick?

6. Plan
   a. Treatment
   b. Additional studies/imaging (if appropriate)
   c. Consultation (if appropriate)

8c. Hyperkalemia

1. Problem: You are called to admit a patient from the Emergency Department for abdominal pain and nausea. They were not successful in getting labs from the patient upon arrival due to patient being a "hard stick". An ultrasound guided access was placed and labs were sent. As you are examining the patient, the nurse comes running to let you know that lab called stating the potassium is "abnormal" and is 7 mEq/L (normal 3.5 – 5.5 mEq/L).

2. Immediate questions to consider

     a. What else might you ask the nurse?
- i. What are the vital signs?
- ii. What are the remainder of the labs?
- iii. Was the specimen hemolyzed and if so repeat the electrolytes?
- iv. Can you get an arterial blood gas?
- v. Is there an EKG done?
- vi. Can you please place the patient on telemetry monitoring?
- vii. Can you have 2 ampules of calcium (gluconate or chloride) at the bedside?
- viii. Is the IV line working?

3. Differential Diagnosis
    a. What is your preliminary differential diagnosis as you are now seeing this patient with above information (get EKG and ABG to triage the patient first, then prepare for initial intervention for the elevated potassium); while thinking of the following differential:
        i. Acute kidney injury
        ii. Medications such as angiotensin converting enzyme inhibitor, angiotensin receptor blockers, trimethoprim, aldosterone antagonist, heparin, NSAID, digoxin, tacrolimus, cyclosporine
        iii. Severe rhabdomyolysis or tumor lysis syndrome
        iv. Too many potassium supplements or is the patient eating/drinking high potassium diet
        v. Acidemia for any reason
        vi. Hyperglycemia
    b. Explain your reasoning for each diagnosis.

4. What additional information do you need upon seeing the patient?
    a. Acute History key points – focusing on medication history, symptoms suggesting acidosis
    b. Past History key points (i.e. history of chronic kidney disease).
    c. Physical exam key points, based on differential diagnosis
    d. Lab data – arterial blood gas, basic metabolic profile, white count
    e. Imaging – could consider renal ultrasound but not urgent, stabilize potassium first
    f. Other studies (priority to review EKG and put patient on a monitor)

5. Diagnostic/clinical reasoning step ("Interpreter" function of RIME framework):
    a. This is one case where acute intervention needs to be prioritized before working up the differential diagnosis – calcium gluconate, insulin and D50, IV fluid and furosemide if appropriate in certain patients, kayexalate, stopping all implicated medications, and arranging for urgent hemodialysis in anuric patients.
    b. Based on information you gathered what is the differential diagnosis starting with the most likely. What features support each diagnosis and are there any features that do not support?
    c. Is this patient sick or not sick?

6. Plan
    a. Treatment
    b. Additional studies/imaging (if appropriate)
    c. Consultation (if appropriate)

9. Acute Kidney Injury

1. Problem: Called about creatinine increased from 1.2 mg/dL to 1.8 mg/dL in last 24 hours.

2. Immediate questions to consider:
    a. What else might you ask the nurse?
        i. What is patient's general appearance?
        ii. What are the patient's current vital signs and oxygen saturation?
        iii. What is his intake and output in last 24 hours
        iv. Is the patient symptomatic? Symptoms may include but are not limited to the following: dysuria, fever, chills, chest pain/pressure, diarrhea, abdominal pain, nausea/vomiting, dyspnea, cough, pleuritic pain, etc.

3. Differential Diagnosis
    a. Generate your preliminary differential diagnosis as you make your way to see the patient (elevator thoughts) based upon the chief complaint, vital signs, some brief epidemiologic features (age, sex), and the sign out information that was given.
        i. Pre-renal: sepsis, gastrointestinal bleed, diarrhea, vomiting, third spacing (pancreatitis), cirrhosis with ascites, acute congestive heart failure (myocardial infarction), over-diuresis, and hepatorenal (diagnosis of exclusion)
        ii. Intrarenal: acute tubular necrosis (ischemia, medications, contrast, rhabdomyolysis, uric acid nephropathy), vascular (atheroembolic disease and renal artery emboli), interstitial (allergic interstitial nephritis), and acute glomerulonephritis (post-infectious)
        iii. Post-renal (acute urinary retention from recent Foley, medications, benign prostatic hyperplasia, stone (if one kidney), prostate cancer, etc.).

4. What additional information do you need upon seeing the patient?
    a. Acute history key points (recent contrast, catheterization, operations, medications, etc.)
    b. Past history key points (e.g., benign prostatic hyperplasia, prostate cancer, multiple myeloma, congestive heart failure, chronic kidney disease, diabetes, etc.)
    c. Physical exam key points, based on patient's Hx and your revised differential diagnosis
        i. General appearance of the patient
        ii. All vital signs, including oxygen saturation
        iii. Changes in weight, intake and output
        iv. Examine the following to assess volume status: JVD, lung and cardiac exam, dependent edema (pre-sacral and extremities), mental status, remainder of neurological exam (as warranted), etc.
        v. Bladder ultrasound
    d. Lab data (e.g., urinalysis, fractional excretion of sodium or urea (if on diuretics), chemistry 7, calcium, magnesium, phosphate.
    e. Imaging (e.g., chest x-ray if suspecting pulmonary edema), renal ultrasound.
    f. Other studies: Depending on differential diagnosis

5. Diagnostic/clinical reasoning step ("Interpreter" function of RIME framework):

a. After integrating and synthesizing all the information you have gathered, what is the differential diagnosis starting with the most likely reason for the acute rise in creatinine? What features support each diagnosis and are there any features that do not support?
b. Is this patient sick or not sick?

6. Plan
   a. Treatment
   b. Additional studies/imaging (if appropriate)
   c. Consultation (if appropriate)

10. Acute Pain

1. Problem: A nurse on the floor calls you on a cross-cover patient who is requesting a new medication for uncontrolled pain.

2. Immediate questions to consider
    a. What else might you ask the nurse?
        i.   Descriptive: What is the location, quality, radiation, severity, duration, and temporal profile of the pain? What are the aggravating and alleviating factors? What is the patient's pain score (0 to 10)?
        ii. Is this acute-onset pain or an acute on chronic exacerbation? Do you need to assess the patient and order additional diagnostic studies?
        iii. Physical observation: Is the patient grimacing, anxious, or diaphoretic? How is the patient positioned? Is there any associated swelling or redness? Are there abnormal vital signs (e.g. tachycardia, hypertension)
        iv. Interventions: What has been tried? How effective were these medications/therapies?

3. Differential Diagnosis
    a. In cross-cover situations, treating the symptom of pain without delving deeper into the underlying cause/etiology may seem easier and more efficient. However, with increasing scrutiny on opioid prescription, it is important to avoid falling into the trap of not creating a differential diagnosis.
    b. What is your preliminary differential diagnosis based upon the information from the nurse, patient's pain history and prior treatment if any, and sign-out information from the primary team?
        i.   Nociceptive Pain
            1. Somatic: Bones, joints, connective tissues, muscles (e.g. arthritis, costochondritis)
            2. Visceral: Organs: Heart, liver, pancreas, gut, etc. (e.g. pericarditis, small bowel obstruction/ileus)
        ii. Neuropathic Pain
            1. Dysesthesia: Burning, tingling, constant, aching (e.g. diabetic neuropathy, post-herpetic neuropathy)
            2. Paroxysmal, Neuralgic: Stabbing, shock-like, electric (e.g. trigeminal neuralgia)

4. What additional information do you need upon seeing the patient?
    a. Acute history key points: Review of signout information, review recent notes and problem list, including reason for admission.
    b. Past history key points: Does this patient have a prior history of a pain syndrome or medical conditions associated with chronic pain (e.g. sickle cell, chronic pancreatitis, trigeminal neuralgia)? Any therapies or interventions that were successful in the past?
    c. Medications key points: Review scheduled and prn pain medications. Review any 'one-time' pain medications given during hospitalization. Note adverse reactions or allergies.
    d. Physical Exam key points: Review vital signs over the last 24 hours (focus on tachycardia

and hypertension, but consider respiratory rate and oxygenation if opioids are being considered in the treatment plan). Consider generalized appearance and comfort of patient-does the patient's appearance match the level of pain he reports? Focus on area of pain for specific signs.
 e. Lab data: Review renal function and liver function tests (important for clearance and potential side effects of pain medications)
 f. Imaging: Especially if pain is acute, consider any urgent indications for CT scan, bedside ultrasound to rule out any possible emergent conditions (e.g. acute abdomen, dissection). Consider EKG for new chest/abdominal pain.

5. Diagnostic/clinical reasoning step ("Interpreter" function of RIME framework):
 a. Based on information you gathered, what is the most likely diagnosis?
 b. What is/are the most likely underlying cause(s) of your patient's pain? (i.e., what are potential triggers? What caused a shift from baseline?)
 c. Assess the urgency of treatment. Severe or 'out of control' pain (e.g. pain score > 8) may require intravenous (IV) therapy, whereas mild pain (e.g. pain score of 1-3) can be treated with oral (PO) medications.
 d. Consider common side effects of treatment [e.g., for opioids, consider respiratory depression, somnolence, nausea, vomiting, constipation, urinary retention, or pruritus. For NSAIDs, consider renal injury or GI bleed.]
 e. Is this patient sick or not sick?

6. Plan
 a. Treatment
  i. Choose an IV versus PO therapy depending on urgency
  ii. If utilizing opioids, consider starting a bowel regimen or anticipating potential side effects (nausea/vomiting)
  iii. Determine an appropriate time for reassessment
 b. Additional studies/Imaging (if appropriate)
 c. Consultation (Anesthesia pain (local injections), Palliative care, or Hospice as appropriate)

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Chapter 4: Knowing when to ask for assistance

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Background

Our current medical training model is centered around a construct of graduated responsibility. As trainees demonstrate mastery of and thereby achieve competence in various clinical skills, they are entrusted with additional responsibilities.[1] With progressively increasing opportunities for indirectly supervised practice, subinterns will inevitably encounter situations which "exceed their confidence or skill to handle alone," in which they have an "obligation to secure direct assistance from faculty or appropriately experienced residents."[2] When trainees fail to request clinical support in a timely manner, the quality and safety of patient care may be compromised.

While clinical factors may be the primary reason why trainees ask for help, studies have highlighted other competing elements that influence the complex process of requesting clinical support.[3] Kennedy separated trainees' decisions regarding whether to seek clinical support into three core domains.[2]

1. Clinical: How urgent is the clinical situation or how important are the implications of the clinical decision to be made? Does the clinical question fall within the scope of practice expected at the level of training?
2. Supervisor: Is the supervisor available and approachable?
3. Trainee: Can a trainee recognize when they are overwhelmed and need support? Does the trainee desire greater independence and responsibility? Is the trainee concerned about potentially negative evaluations from supervisors if they ask for help?

The tension between preserving professional credibility while maintaining patient safety on clinical teaching teams is important. Trainees' needs to develop independence and to evolve as independent clinicians are appropriate and important educational goals. Strategies to increase learner comfort with requesting support from a supervisor while preserving credibility may be beneficial,[2] as these may not only enhance patient safety and student's learning but also reduce the risk of student stress and burnout.

A crucial first step to optimizing learner comfort level is to help subinterns develop a routine of self-assessment and strive for self and practice improvement. Metacognition, often described as 'thinking about one's own thinking processes,' enables learners to recognize an "absence of knowledge" in a given context. Metacognition is a complex skill based upon self-awareness, memory, attention to task, and individual expectations. Trainees who lack awareness of their knowledge deficits may be unable to examine practice patterns, evaluate prior mistakes, prevent errors due to cognitive biases, or set

personalized learning objectives. Accurate clinical reasoning and decision-making skills are dependent upon being aware of one's knowledge deficits.[4]

Another step towards improving learner comfort is by providing a structured communication model. Situations where subinterns call for help require effective communication between them and their supervisor. Tools for structured communication have been recommended to standardize information exchange between members of the health care team and to improve patient safety while maintaining efficiency.[5] A recent review of the use of such instruments in undergraduate medical education suggests tools for structured communication can improve students' ability to give clear and comprehensive messages and/or to receive and understand information.[6] Students who incorporate these tools perceive improvement in their readiness for clinical practice and possess increased self-confidence.

Many subinterns may hold the self-perception that asking for help equates to admitting a knowledge and/or skill deficit and, thus, signifies a "sign of weakness." This type of self-perception can lead to increased student stress and burnout. Stress management strategies to prevent student burnout and promote wellness are discussed in chapter 5 of this document.

Of the thirteen Core EPAs, three of these relate directly to this curriculum's core skill and were adapted to build our curriculum. These EPAs are:

- Form clinical questions and retrieve evidence to advance patient care (EPA-7)
- Collaborate as a member of an interprofessional team (EPA-9)
- Recognize a patient scenario which requires assistance from supervisors (EPA-10)

Learning Objectives

By the end of the rotation, subinterns should be able to:

1. Recognize various techniques that can enhance and develop metacognitive skills.
2. Generate clinical questions and retrieve evidence to advance patient care.
3. Identify clinical and contextual situations that require assistance from clinical supervisors.
4. Utilize a communication framework when calling for clinical support.

Metacognitive Techniques

The following techniques can be used by faculty and trainees to help develop metacognitive skills:[4]

- **Reflection** involves the exercise of trainees reflecting on their encounters. Reflection includes clinical decisions, patient interactions, cognitive errors, and system errors. Reflection can be mediated by faculty and be used on an individual or group basis.
- **Graphic organizers** are visual displays, like a concept map, that can guide a learner's thought process. The learner will fill in and build upon a visual map or chart to enhance knowledge

acquisition.

- **Feedback** from a variety of credible and independent sources, including both modifying and reinforcing, as well as immediate and delayed. Feedback is critical in assisting learners develop metacognitive skills.
- **Think aloud**: Faculty can share their own reasoning process in a clinical setting utilizing a think-aloud component. They can demonstrate and assess clinical reasoning and decision making for their trainees while working through diagnostic problems.
- **Cognitive de-biasing** involves decreasing bias, especially in regards to judgment and decision making. Some cognitive forcing strategies can be taught to trainees to prevent errors. Faculty can incorporate these forcing strategies like pausing and "stepping back," considering common pitfalls, and requiring trainees to generate evidence to support or refute hypotheses.
- **Predicting outcomes** can encourage learners to evaluate their current knowledge, determine whether this meets a certain competence threshold, and then to focus on the gaps in their knowledge.
- **Questioning** strategies should be utilized by faculty to nurture insight, to develop critical thinking skills, and to challenge learners.
- **Self-questioning** strategies can be demonstrated by faculty to guide learners to improve comprehension. While some students may not initially know what questions to ask, they can be guided to generate their own questions.
- **Five Whys** is a brainstorming technique that is used to assist learners in problem solving, ruling out competing hypotheses, and uncovering root causes. Students repeatedly question "why," at least five times in this method and each response develops into the subsequent question.

Faculty can educate their trainees on these methods while emphasizing the vital role of these processes in learning, clinical reasoning, and performance enhancement. Trainees who incorporate these methods in practice can combat overconfidence which can be detrimental to personal advancement. Students who learn to recognize and subsequently incorporate these metacognitive processes into daily practice and learning will be working toward the continuous process of self and practice improvement.

P.I.C.O. Model for Clinical Questions

P.I.C.O. is a mnemonic to assist learners in building a well-structured clinical question. By building a logically focused clinical question, learners can identify key concepts to target in their subsequent literature search. Figure 3 outlines the components of this PICO model.

Figure 3. Components of the P.I.C.O. model

Patient or problem	How would you describe a group of patients similar to your patient?
Intervention	What treatment, test or other intervention are you considering?
Comparison	What is the main alternative being considered, if any? (Can be compared to doing nothing)
Outcome	What is the patient-oriented outcome? What are you trying to improve or affect?

When to Ask for Help

Based on the framework proposed by Kennedy and colleagues on when to request clinical support, we provide some examples of situations in which clinical decision-making might exceed the "scope of practice" of a subintern at their level of training. This list could be provided to students as a starter/guide for when to contact their supervisors but is also intended to encourage self-reflection from trainees (i.e. when should I, as a subintern, ask for help?). Alternatively, these examples can guide supervisors in their instructions to trainees on when to contact them.

Clinical situations in which subinterns <u>must</u> contact their supervisor include:

- Discharge or patient disposition decision-making
- Escalation in level of care (i.e., recognizing clinical deterioration)
- Complications of procedures (e.g., pneumothorax from central line placement)
- Non-procedural medical error
- Patient death (expected or unexpected)
- Change in code status/resuscitation status

Other potential scenarios which also warrant direct supervision include:

- Interpretation of significant physical exam findings and/or diagnostic test results (e.g., labs, EKG's, imaging studies)
- Obtaining informed consent
- Assistance with standard medical procedures (e.g. performing an arterial blood gas, intravenous

line placement)
- Difficult conversations with patient and/or family members
- Divergence from previously established plan
- Assistance with requesting specialty consultation
- Assistance with writing orders (and reminding supervisor to co-sign them in a timely manner)

SBAR: A Sample Tool for Effective and Structured Communication

The SBAR (situation, background, assessment, recommendations) communication technique provides an organized and logically sequenced framework to enhance the communication process and optimize patient safety.[5] SBAR helps students organize their thoughts prior to calling their supervisor, during handoff, and when transferring patients to a different team or level of care.

Teaching students on the benefits of using communication tools and providing opportunities to practice should ideally occur prior to the clinical rotation. In using this particular tool to teach structured communication skills, some programs have adapted SBAR to meet particular learner needs by adding new components or by altering the meaning of existing items (e.g. addition of Introduction (ISBAR) or Read back (ISBARR), etc.). Simulation, including role-play, seems to be a superior method to instruct students on the use of SBAR, when compared to didactic teaching alone.[6]

Educators and supervisors should keep in mind that while standardized communication tools can provide a structure within which messages can be framed, they cannot compensate for underlying weaknesses in clinical reasoning. Therefore, programs should consider instructions on communication tools, such as SBAR, in conjunction with other skills such as clinical reasoning and decision-making.

SBAR toolkit and resources can be found at http://www.ihi.org/resources/pages/tools/sbartoolkit.aspx

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Chapter 5:   Medical Student Wellness

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Background

The subinternship can be a very stressful rotation for students due to its inherent rigor and often high-stakes nature. Therefore, a subinternship curriculum would not be complete without addressing the topic of medical student wellness. Burnout is an entity generally characterized by three core domains: emotional exhaustion, depersonalization (i.e. the feeling of detachment or being callous towards patients), and a low sense of personal accomplishment.[1] Prevalence of burnout in medical students and residents is higher compared to that of the general population, ranging from 40 to 76% in studied cohorts.[2] Troublingly, some studies suggest burnout actually increases during training itself. In third and fourth year of medical school, identified drivers of burnout include dissatisfaction with learning environment, poor clerkship organization, working with cynical residents, and student mistreatment.[1,3] Unchecked, burnout can seriously impair professional development, impede knowledge and skill acquisition, and negatively impact the delivery of timely and accurate patient care.[1] Furthermore, burnout can lead to dire personal consequences and has been independently associated with an increased risk of substance abuse, depression and suicidal ideation.[1,3–6]

Several medical schools have implemented programs designed to mitigate the stress of medical students.[4,7-10] For example, the Saint Louis University School of Medicine created a robust program of medical student wellness. Interventions employed included strict pass-fail grading, curricular changes such as resilience and mindfulness training, earlier clinical experiences, and tracking students with depression and anxiety. While effective in the preclinical years, these strategies failed to reduce the rates of depression and anxiety during the clerkship years. Slavin and Chibnall put forth three sobering hypotheses for why this program was ineffective. First, modifying the learning environment is difficult in the clinical years given that students are rotating through multiple hospitals and interacting with hundreds of distinct supervisors. Additionally, poor mental health in residents and faculty may undermine the experience of medical students (e.g. exposure to cynical residents or student mistreatment). Second, tools available to reduce stress in the preclinical curriculum cannot easily be applied to third-year clerkships. For example, changing to a strictly pass/fail grading system may undercut the competitiveness of students when they enter the Match. Third, students are facing stiffer competition when applying for residency and are increasingly stressed about the future.[4] There is some evidence that well functioning teams may reduce the risk of burnout.[11]

Despite mounting evidence that organizational-level strategies are needed to correct negative educational and clinical environments, subinterns should also take personal steps to evaluate their own well-being and to incorporate constructive coping strategies.[1] Some experts have proposed self-care be recognized as a core competency for physicians.[12] A systematic review of stress management programs for medical students revealed mindfulness-based stress reduction, the Respiratory One Method of

relaxation, and self-hypnosis as the most effective personal interventions among those reviewed.[2] Another institution employed cognitive behavioral approaches to improve self-care and to promote resilience.[12] Reflective writing has also been used to promote professional identity and empathy.[13,14] Many of these interventions have the potential of enhancing a subintern's "coping reservoir" and may assist his or her response to both the positive and negative effects of the stresses of the medical school experience.[15,16]

Medical schools must overcome any doubts that medical student mental health needs to be addressed.[17] Additional studies, ideally multi-institutional, are needed to examine the effectiveness of various interventions aimed at promoting student wellness and reducing stress and burnout so that the results can be more generalizable.

Learning Objectives

By the end of the rotation, subinterns should be able to:

1. Utilize a validated tool to assess one's personal risk of burnout
2. Recall multiple evidence-based interventions that may aid in wellness
3. Reflect on identified "at-risk" domains and experiment with suggested interventions to improve wellness
4. Incorporate helpful techniques into daily practice by creating a behavior change plan (BCP)

Medical Student Well-Being Index (MSWBI)

The 7-item Medical Student and Physician Well-Being Index is a validated tool that can be used by either subinterns for self-assessment or educators to identify students who may need additional assistance and resources. At a threshold score of ≥ 4, Dyrbye and colleagues found that the MSWBI's sensitivity and specificity were ≥ 90% for identifying students with low mental quality of life, recent suicidal ideation or serious thoughts of dropping out of medical school.[18] A web-based tool is currently being evaluated at multiple centers (https://www.mededwebs.com/well-being-index).

Item	Yes	No
1. Do you feel burned out from medical school?		
2. Do you worry that medical school is hardening you emotionally?		
3. During the past month have you often been bothered by feeling down, depressed, or hopeless?		
4. In the past month, have you fallen asleep while stopped in traffic or driving?		

5. During the past month, have you felt that all the things you had to do were piling up so high that you could not overcome them?		
6. During the past month, have you been bothered by emotional problems (such as feeling anxious, depressed, or irritable)?		
7. During the past month, has your physical health interfered with your ability to do your daily work at home and/or away from home?		

Source: Dyrbye LN, Schwartz A, Downing SM, Szydlo DW, Sloan JA, Shanafelt TD. Efficacy of a brief screening tool to identify medical students in distress. Acad Med 2011;86:907–14.

Physician Self-Care Strategies: Body-Mind-Soul Framework

Resource developed by Dr. Oana Tomescu [Chair of the Best Practice group in the Collaborative on Healing and Renewal in Medicine (CHARM) within the Alliance for Academic Internal Medicine (AAIM)] and colleagues

There are many available strategies for self-care that have been published in the *Physician Wellness* literature. This framework organizes available tools into three different domains: "Body, Mind, and Soul." The 'Body' category focuses on physical wellness. The 'Mind' category addresses how individuals deal with thoughts, emotions, identity, or self-concept. The 'Soul' category provides strategies for deeper sustenance on a more 'spiritual' level.

Body:

1. **Sleep:** Subinterns should consider placing sleep at the top on their priority list when integrating strategies for physical self-care into their daily routine. During sleep, the parasympathetic nervous system tone is high, allowing the body to slow the heart and to lower blood pressure and basal metabolic rates. On a cellular and molecular level, the body deals with the toxic damage accrued during the day and allows energy stores to be replenished. Chronic sleep deprivation has been associated with sympathetic nervous system and hypothalamic-pituitary-adrenal (HPA) axis activation.[19] Sleep deprivation has been linked to an increased risk of cardiovascular disease and metabolic disorders,[20] and can cause deterioration of neurobehavioral and cognitive performance.[21]
2. **Exercise:** Subinterns should consider exercising regularly, as there is ample evidence that working out is not only beneficial for physical health but can also positively enhance cognition and mood. This cognitive effect is likely mediated through the up-regulation of brain-derived neurotrophic factor (BDNF).[22]
3. **Access Health Care:** The cliché "doctors make the worst patients" bears truth when studied in the literature. Although many physicians have a primary care practitioner, the majority access

informal health care, preferring to ask colleagues for medical advice or to self-manage their illnesses.[23] Physicians often feel pressured to portray an unrealistically healthy image and do not want to burden colleagues by taking time off to seek medical attention. Once symptoms arise, many experience alternating states of panic and denial, with this oscillation of emotions often leading to delays in seeking medical care.[24] Subinterns must prioritize their own physical health and well-being, as ill health can cloud professional judgment and lead to suboptimal performance.

4. **Parasympathetic Exercises:** While it is common for people to engage in exercises that are challenging and physically demanding, high-intensity exercises can be exhausting on the sympathetic nervous system. This category represents a large group of MindBody strategies that utilize the slowing down of the breath to reset sustained sympathetic nervous system activation. These exercises include:

   a. **Deep diaphragmatic breathing:** Deep breathing helps convince the body there is no immediate danger and allows the parasympathetic nervous system to regain control. You can practice by breathing in for a count of two seconds, holding your breath for six seconds and then releasing the breath over the course of seven seconds.

   b. **Yoga:** Regular engagement in yoga causes significant decreases in stress hormones like cortisol.

   c. **Meditation:** The focus is on clearing mind of all thoughts for a short period of time. Studies have shown that those who are exceptionally skilled at clearing their mind have brain wave frequencies similar to those found during deep sleep.

   d. **Other**: These modalities include body scan, massage therapy, being in nature, playing with children or animals, or tai chi.

5. **Healthy Nutrition:** Subinterns need to adopt healthy eating and drinking habits. It is common for physicians to not eat or drink properly during the workday, but this can lead to suboptimal patient care. Proper nutrition has been linked to improved physician cognition[25] and is an essential part of physician wellness.

Mind:

6. **Humor:** Utilization of humor is an excellent way to relieve tension and to help physicians process the difficult emotions and situations faced in the workplace. Physicians who utilized humor to process the stress of their days had lower emotional exhaustion scores.[26]

7. **Process Emotions:** Many emotions may arise as subinterns care for their patients. In order to maintain healthy boundaries and a therapeutic relationship with their patients, physicians and medical trainees alike may need to subjugate their own emotional reactions. It is a challenging balance to remain warm, empathetic, and authentically caring, while not becoming so emotional such that one cannot make proper professional judgments. There are many ways to actively process the complex emotions. These include talking or writing about them, as well as expressing them through art, music, photography, and other creative outlets. One can even use exercise mindfully to release intense emotions like rage, frustration, and grief. The key is to

engage in active, regular cleansing of internal emotional energy and to heal emotional wounds by making the time and space to feel and to release these natural human reactions.

8. **Slow Down and Take Breaks:** This is a critical strategy that can be utilized during the hectic pace of the day. Multi-tasking is an unavoidable part of the day, but when our minds are accustomed to doing several things at once, it is easy to lose awareness of the world around us and to not be grounded in the present moment. Instead, we often may be looking ahead to the future or may be processing past events.

    a. **Step 1:** Identify times you are multi-tasking during your day. Become aware of fast-paced moments.

    b. **Step 2:** Choose instances in your day when you will not multi-task and want to slow down (e.g. when you want to be fully present with the people you encounter)

    c. **Step 3:** Integrate self-care strategies to slow down. One example is to use breathing techniques: Inhale fully for at least five seconds, pause, and then exhale for another five seconds before starting your next task. Another may be to notice a physical detail of your current environment (e.g. wood grain of the next patient's door or color of the floor tile) to ground yourself in the present moment.

9. **Identity Balanced:** It is easy to become lost in the identity formation process entailed in becoming a doctor. Making time for interests outside of work is an adaptive strategy that helps physicians stay balanced and to reconnect with our 'humanness.' When this strategy is ignored, barriers can emerge that lessen physicians' capacity to connect with others and lessen their ability to heal patients. Staying connected with communities outside of medicine is important to growing other aspects of self.

10. **Creative Outlets, Hobbies, Playtime:** These modalities help the mind relax and to keep your identity balanced. Find strategies that resonate with you and try to engage with them daily, if just for 5-10 minutes. Allowing your mind to have down time will make it sharper for the work it needs to do later.
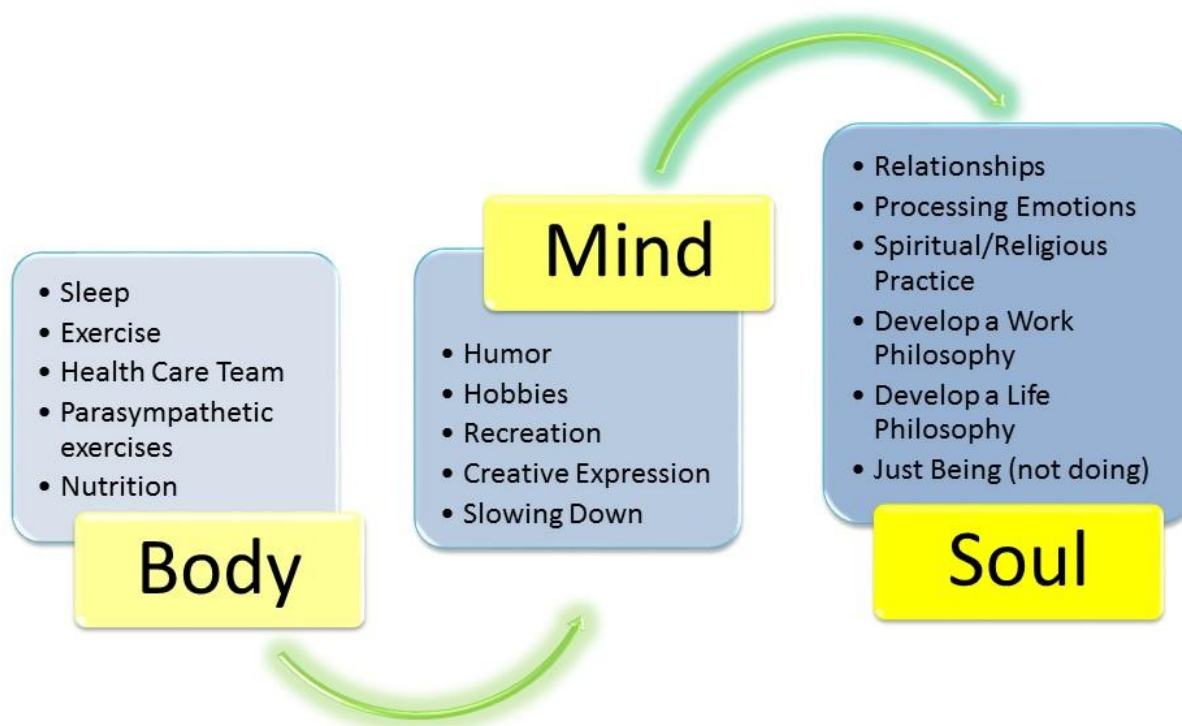

Soul:

11. **Nurture Relationships:** Cultivating relationships is crucial both at work and outside work. One study demonstrated that physicians who actively utilized peer relationships for processing stress had lower emotional exhaustion scores.[26] This strategy of forming connections was cited among the top five strategies utilized by U.S. palliative care physicians[27] and by U.S. primary care physicians[28] for combating burnout.

12. **Spiritual & Religious Practices:** Engaging in spiritual and religious practices has been reported as a protective wellness strategy.[27,28]

13. **Work Philosophy:** Developing a work philosophy is an important strategy to combat burnout. One example is finding meaning in what one is doing in your career. Ask yourself why you chose this path. Explore how helping others make you feel. Contemplate what you have learned and how you have grown on your journey. Take time to reflect on your practice.

14. **Humanistic Patient Care:** Engaging in humanistic patient care is an example of a work

philosophy and may also be protective against burnout. One qualitative study noted that attendings at a single institution who had received the highest number of votes by residents for humanism towards patients cited that holding themselves to high standards of practicing medicine in a humanistic manner was an "antidote" to burnout.[29]

15. **Life Philosophy:** Although this may be a broad and somewhat nebulous concept, the strategy of having a life philosophy has been mentioned repeatedly in the physician wellness literature as being critical for sustaining our souls.[30,31] Examples of this include: Focusing on what's important in life, maintaining a positive outlook, treating all beings with lovingkindness and respect, and accepting events as they unfold with the faith that things happen for a reason. Physicians who utilized this strategy had significantly higher scores in psychologic well-being compared to those who did not.[28]

16. **Enjoying Nature:** Although this is not a wellness practice that has been studied, enjoying the outdoors is a strategy for slowing down and appreciating the wonder and beauty that exists in nature.

17. **Just Being:** A powerful strategy that focuses on the present moment (and not doing anything). Self-awareness improves connection with others. Being aware of our own emotional and physical states activates the insula and anterior circulate cortex, parts of the brains that help us to read other people. **Mindfulness**, defined as the non-judgmental awareness of the present moment, has its roots in Buddhist traditions and is becoming a part of mainstream medicine. Multiple studies have demonstrated the benefits of mindfulness on medical student stress levels.[32,33] The connection between personal awareness and effective patient care has been likened to what is known as the 'art of medicine.'[34-40]

Physician Self-Care Strategies

Body
- Sleep
- Exercise
- Health Care Team
- Parasympathetic exercises
- Nutrition

Mind
- Humor
- Hobbies
- Recreation
- Creative Expression
- Slowing Down

Soul
- Relationships
- Processing Emotions
- Spiritual/Religious Practice
- Develop a Work Philosophy
- Develop a Life Philosophy
- Just Being (not doing)

Behavioral Change Plan

A behavioral change plan (BCP) may be a useful tool that allows medical students to reflect on their behaviors, devise a plan to modify their behaviors, and self-monitor their progress towards an individual goal.[41] Subinterns can utilize a BCP to target one of the above specific self-care interventions.

Instructions for creating a BCP:

1. Choose a target behavior in one of six themes: (1) exercise, (2) nutrition, (3) sleep, (4) personal habits/hygiene, (5) study/work habits, (6) mental/emotional health. Your choice should include a rationale, what you hope to learn or achieve, and why.
2. Monitor your current patterns of behavior. For at least 2 weeks, you must chart the target behavior and record frequency data. Examples include hours of sleep, daily consumption of fruit or vegetable servings, and minutes of exercise per week. Record behavioral frequency, settings or conditions, and feelings if pertinent.
3. Learn about the target behaviors, including recommendations, standards of care, or guidelines. Identify at least 3 resources that address the behavior using articles, books, or

Internet sites. Information should be summarized and cited.

4. Set personal goal(s) and develop a change plan. The goal should be specific – a clear cut goal you intend to accomplish. Include what, when, where, and how. For example, "I will exercise using the elliptical machine 2 days weekly (Tuesday and Friday) for 30 minutes."

5. Monitor your change plan. Over the next 6 weeks, track your progress using a chart, graph, spreadsheet, or list. Keep a journal throughout the process, recording the frequency of the new behavior, slips, high-risk situations for relapse, and your feelings. Record the "sabotaging" or "entitlement" thoughts that lead you away from performing the behavior to understand the role cognition plays in behavior.

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Appendix A: Evaluation Tools

CROSS-COVER NOTE EVALUATION FORM

Evaluator Name_____   Student Name_____

Date_____

Content: C=complete, Inc=incomplete, NA=not applicable	C	Inc	NA
Chief Complaint (what you were called for)			
Date and time seen documented			
Interim History documented			
Review of systems (problem pertinent)			
PMH (brief-as pertains to reason for admission/cross cover call)			
Vitals with abnormalities/changes compared to previous noted			
Physical exam includes detailed description of abnormal findings (i.e. murmurs, actual size of erythema, etc) and pertinent negatives(i.e. no nuchal rigidity if patient with HA) as well as changes to previous noted			
Relevant laboratory values are included (or noted as ordered)			
Relevant imaging studies included (or noted as ordered)			
Interpretation of labs/imaging documented			
For cross cover problem(s), adequate differential diagnosis			
For cross cover problem(s), adequate diagnostic plan clearly outlined			
For cross cover problem(s), adequate treatment plan clearly outlined			
Document tasks pending completion (to do list)			
Document discussion, if any, with patient, family, or consultants			
Document change in code status, if applicable			
Note is signed and contact information (pager number) documented for questions			
Note is written clearly and succinctly			
Total Number COMPLETE out of 18			

DISCHARGE SUMMARY EVALUATION FORM

Student_____ Evaluator_____ Date_____

S= Satisfactory NI=Needs improvement NA=Not applicable	S	NI	NA
Name of attending to co-sign			
Date of admission and discharge			
Admitting Diagnosis-dx responsible for admission, working diagnosis			
Primary discharge diagnosis-specific dx listed, not a sign or symptom			
Secondary diagnosis list complete (all active diagnoses patient was treated for during admission, even those stable medical problems i.e. diabetes)			
Diagnoses include severity (i.e. DM type 2, uncontrolled)			
Diagnoses are specific (i.e. acute blood loss anemia)			
Consulting specialties listed			
Specific physicians or groups listed as consultants			
Operations/procedures listed, includes relevant findings			
Significant imaging listed, includes relevant findings			
History of Present Illness			
Hospital summary addresses all significant diagnoses			
Hospital summary provides sufficient detail (key findings, major interventions, test results, recommendations by consultants)			
Hospital summary is concise			
Prognosis/Resuscitation Status			
Status at discharge listed-includes key physical exam (discharge weight, mobility, condition) and key lab findings			
Medication names listed. Check NI if "resume home medications" or equivalent			
Medications doses and frequency listed			
Indication of each medication being new, continued, changed, or discontinued			
Specific name of physicians to follow up with given. check satisfactory if the process for obtaining a new PCP or a specific clinic with number is given			
Appointment dates and/or specifics of when to follow up			
Pending tests results or issues to be follow up; if none, state 'none'			
Instructions on Diet/Fluids			
Instructions on activity, wound care, or other limitations			
Instructions on what changes in symptoms or exam patient should be monitoring			
Instructions on what to do if changes listed above are noted			
Weight monitoring instructions (mandatory in heart failure)			
Physicians to receive fax/copy			
Includes how to contact hospital team with questions			
Total number (maximum 30)			

COMMENTS:

OFF-SERVICE NOTE EVALUATION FORM

Evaluator_____ Student_____ Date_____

	Satisfactory	Needs improvement
Document date and chief reason for admission		
Hospital course-highlights clinical dx, new problems developed since admission and treatments (both successful and unsuccessful)		
Describes patient's condition on day of transfer (cognitive status, cardiopulmonary status, mobility, and nutrition)		
Documents diagnostic test done with relevant findings		
Documents all consultations and key recommendations		
Lists patient's current medications		
Summarizes active issues related to patient care and treatment plan with rationale for each issue		
Documents tasks to be completed and followed up by the oncoming service, including labs, consultation recommendations, and family meetings that need to be arranged		
Documents relevant discussions you had with patient, family or consultants. Highlights relevant psychosocial information (complex family dynamics, beliefs, etc)		
Code status documented		
Legibly signed with your contact information (pager number)		
Total	/11	

Comments:

Appendix B: Example of a good cross cover note – EPA 5

01/05/2017. 11:15 PM. Called by RN at 11:00 PM to see patient for increasing shortness of breath. Patient has known CHF according to chart w/ EF 35% from ECHO this admission. Symptoms started ~10:00PM. Patient denies chest pain, palpitations, or cough. Pulse 110, RR 28, BP 140/80; pulse ox 92% on 6L, patient using accessory muscles, lungs w/ bibasilar crackles. EKG shows sinus tach with no ST-T wave changes and unchanged compared to prior EKG from 01/04/2017. Chest Xray showed new interstitial infiltrates consistent with pulmonary edema. Presume CHF from volume overload due to IVF. Cardiac enzymes ordered. IV fluids discontinued and 40 mg of IV furosemide given. Cardiology fellow on call (give the name) informed and agreed with plans.

Signed by_____ (pager_____)

12:15 AM: Patient breathing much better. Lungs now clear. First set of cardiac enzymes negative. Patient responded well to IV furosemide and feels much better.

Signed by_____ (pager_____)

Appendix C: M-OSHE Materials – EPA 6

Online Appendix C.1

Pre-Survey
SURVEY Q1 I have received training to conduct verbal handoffs in medical school. (Yes/No)

SURVEY Q2 I am satisfied with the verbal handoff training I received in medical school.
(Strongly Agree to Strongly Disagree Likert scale)

SURVEY Q3 Which of the following best describes when/if you were responsible for verbal handoffs during medical school? (3rd year only, 4th year only, both 3rd and 4th year, neither 3rd and 4th year)

SURVEY Q4 I am prepared to conduct a verbal handoff (Strongly Agree to Strongly Disagree Likert scale)

∙∙∙
Quiz questions

QUIZ Q1 Which of the following terms best explains how multiple errors led to an adverse event in this case?

- Situational awareness
- Reasons swiss cheese model (Correct)
- Iceberg model of medical errors
- All of the above
- None of the above

QUIZ Q2 Which of the following best describes why senders often assume the receivers have a greater understanding of information than they actually do?

- Anchoring heuristic
- Availability heuristic
- Egocentric heuristic (correct)
- Representative heuristic
- All of the above
- None of the above

QUIZ Q3 Technology is able to improve handoffs because of which of the following?

- Providing more information for a patient in the signout
- Reduce transcription errors through auto-importing medication list (correct)
- Make it easier to cut and paste from your progress note
- All of the above
- None of the above

QUIZ Q4 Read-backs in healthcare communication:

- are required for certain critical lab values by the Joint Commission
- have been shown to reduce communication errors
- are cost-effective
- All of the above (correct)
- None of the above

QUIZ Q5 Which of the following is true about handoff mnemonics?

- Handoff mnemonics improve quality and safety of handoffs.
- Handoff mneumonics are recommended by the Joint Commission
- Handoff mnemonics are used widely to improve organization and standardization of content. (correct)
- All of the above
- None of the above

QUIZ Q6 Which of the following is an effective strategy for verbal communication during handoffs?

- Providing general medical facts about the patient
- Starting with the newest patients first
- Focusing on if/then and to-do items (correct)
- Explaining why the patient is still in the hospital
- All of the above
- None of the above

QUIZ Q7 The following behaviors all indicate active listening except:

- Asking questions
- Taking notes
- Nodding head (correct)
- Read-backs
- All of the above
- None of the above

Post-survey programmed into web-module

SURVEY Q1 This module was an effective review of handoffs
(Strongly Agree to Strongly Disagree Likert scale)

SURVEY Q2 I plan to improve my verbal handoffs as a result of this activity
(Strongly Agree to Strongly Disagree Likert scale)

SURVEY Q3 I feel prepared to conduct a verbal handoff
(Strongly Agree to Strongly Disagree Likert scale)

Identifying information	Clinical scenario	Medications	If….then…	To Do:
Miller, Robert 1234567 TS317 Allergies: PCN Date of Admit: 6/16/14 Code Status: FULL PCP: Altkorn	*47-y/o M with h/o Crohn's disease s/p resection p/w partial SBO and AKI* 1. *partial SBO* → surgery actively following, NGT to LIS d/ced today, starting clears 2. *AKI*→ 3d h/o N/V, Cr 1.7 from baseline of 0.9, with hydration 1.2 this morning, off IVF 3. *Prophylaxis*→ LMWH SQ, NPO, IV PPI	Tylenol 650mg po q4-6hr PRN	If worsening pain or abdominal distension, make NPO and please page IBD and surgery	[] follow up 8 pm CR, if > 1.3, give 500 cc bolus
Houseman, Erma 4567890 TN518 NKDA Date of Admit: 6/17/14 Code Status: FULL PCP: Vela	*68-y/o F with end stage COPD on 3L home 02, here with community acquired pneumonia newly hypoxic and hypotensive* 1. *SOB*→ due to pneumonia and COPD, increased work of breathing, desat to 82% now 100% on 5l 02, on IV antibiotics, continuous pulse ox, repeat CXR pending 2. *Hypotension*→ 90/70 from baseline 140/80, holding BP meds , concerns for sepsis, cultures pending 3. *DM2*→ continue home medications and SSI 4. *Prophylaxis*→ LMWH SQ, PPI 5. *Code status*→ currently FULL but family coming in to discuss goals of care	Ceftriaxone 1gm IV q24hr Azithro 500mg IV q24hr Prednisone 60mg po daily Insulin glargine 20 units SQ qHS Novolog 8 units TID w/ meals Sliding scale insulin Albuterol/atrovent nebs q4hours Nexium 30mg po qday Lisinopril 5mg po daily (held)	If worsening SOB, hypotension (<80/50) and decreased SaO2 (90% 6L), consider ICU transfer If worsening hyperglycemia in setting of steroids, can tighten SSI	[] follow-up on repeat CXR to confirm pneumonia [] family meeting to discuss goals of care/possible ICU transfer
Williams, Jennifer 5678901 TS367 NKDA	*28-y/o F with h/o uterine fibroids p/w vaginal bleeding and*	Tylenol 650mg po q4-6hr PRN	If worsening bleeding, hypotension, or Hgb falling, please page	80

Date of Admit: 6/19/14 Code Status: FULL PCP: Lee	*symptomatic anemia* 1. *Vaginal bleeding→* likely related to uterine fibroids, Hgb on presentation 4.5 and patient symptomatic, transfused 3U PRBC's in the ED, await repeat CBC; has 2 large bore peripheral IVs 2. *Prophylaxis→* SCD's		ob/gyn to evaluate for embolization/surgery

Door Chart

Resident Instructions

You are a tired resident who has just finished a long shift on the wards.

Before leaving today, you need to handoff your patients (R. Miller, E. Houseman, and J. Williams) to one of your fellow residents who will be covering for you overnight.

Your job is to use the information provided on the sign-out form to successfully transfer care of these patients to another provider. This includes providing all of the pertinent information about these patients, along with relevant action items.

Please go into the room and handoff these patients to the resident receiver. As you do so, be mindful of your communication skills.

---PLEASE LEAVE THIS SHEET ON THE DESKTOP---

	Yes	No	Comments
Did the resident appropriately prioritize the patients (in order of illness) when delivering the handoff to the receiver? *(Patients should be in the following order: 1. Houseman 2. Williams 3. Miller)*			
Did the resident communicate specific action steps and inform to the receiver of what to do if possible situations arise? (i.e. "If ___, then ___" or "To-Dos").			
Did the resident encourage and provide the receiver with appropriate opportunities to ask questions? *(For example, Do you have any questions?)* *Note: The receiver should only ask "Is the ICU aware of this patient? → in reference to Mrs. Houseman)*			
Did the resident provide an appropriate amount of information about the patients? *(Too much info could be overwhelming …allergies, prn meds, MRN, or stable chronic problems like HTN or too little information. Ideally a good one liner with a presumed diagnosis, major problems, if/then and to-do)*			
Did the resident orient the handoff sheet in such as manner as to create a shared space between the resident and the receiver?			

Appendix D: Common Healthcare Team Members and Roles – EPA 9

- Patient/Family/Health Care Proxy/Guardian - The center of the health care team is the patient or the person representing and advocating for the patient. All medical decisions must include this person, and collaboration with the patient around the plan of care is a critical skill of the medical provider. As the primary provider, the sub-intern is the interface between a complex health care system and the patient.

- Nursing – nurses typically spend more time with each patient than any other team member, and they usually have a very clear understanding of how to coordinate care and access appropriate resources for a wide variety of issues encountered in the course of a hospital admission. If any time-sensitive orders (stat lab requests, imaging, etc) or orders requiring nursing completion (foley catheter removal, titrate oxygen, etc) are entered into the electronic medical record, direct communication with the patient's nurse will often help ensure timely completion and nursing assistance with communication of the importance of these orders in the overall plan of care. Nurses also can help coordinate assistance from nurses' aides or other members of the care team that are often assigned to the floor/unit but not to any particular patient.

- Physical Therapy – does my patient need PT? Patients with a new or worsening difficulty with ambulating, difficulty with transfers, or patients who have fallen often can benefit from physical therapy evaluation and treatment. Physical therapists, along with their occupational therapy colleagues can assess whether a patient is likely to be safe to return home (or to their previous living situation) and give recommendations on needs for ongoing therapy during the hospital stay or after discharge home, assistive devices, or admission to skilled nursing facilities for a longer course of rehab.

- Occupational Therapy – does my patient need OT? While OT is often ordered whenever PT is ordered, it is not always needed. While inpatient PT most often assesses and treats gait instabilities, inpatient OT is usually most helpful when patients have fine motor deficits.

- Speech Therapy – does my patient need speech? New or worsening deficits in speech or swallowing are indications for speech therapy evaluation and treatment. Often these will be identified by patients or their families, but sometimes a potential diagnosis of aspiration pneumonia may serve as an indication for speech evaluation even in the absence of patient or family concerns. Speech therapists often complete a bedside swallow evaluation and may suggest additional testing prior to giving a recommendation of dietary modifications or limitation. Consultation from all three PT, OT, and speech therapy services is also typically recommended or required in the setting of stroke/TIA or if patients are being considered for acute inpatient rehabilitation admission, even in the absence of obvious difficulties described above for each of the individual team members.

- Social Worker and Case Manager – often these team members work collaboratively to provide a range of services related to appropriate hospital discharge to each patient on a hospital unit/floor or on a team. Communication between the primary provider (Sub-intern) and the case manager is critical for coordination of the transition of the patient from the inpatient environment to a variety of sub-acute and outpatient settings.

- Pharmacist – Communication with a pharmacist can greatly impact patient safety, especially around transitions of care. The inpatient pharmacist can often interface with outpatient pharmacy and patient/provider databases when discrepancies are noted during medication reconciliation. Pharmacists can also be helpful in identifying potential medication side effects, drug-drug interactions, or dose adjustments in the setting of patient characteristics (i.e. elderly) or medical problems (i.e. liver/kidney dysfunction).

- Inpatient Consultant Teams – It is common for an Internal Medicine service to care for patients with multi-system disease. Communication and coordination of care with multiple subspecialty consultants is the norm with these patients. Coordination of care with consultants, especially regarding scheduling of procedures and tests, is a challenging, and important task for a medical sub-intern.

- Primary Care Physician and other continuity physicians – Coordination of care, particularly around transitions of care is critical to providing excellent care. Physicians and other members of the outpatient care team who have long-term relationships with the patient are often able to provide vital insight and advice when discussing the plan of care, especially in "difficult" situations such as goals of care discussions, breaking bad news, and consideration of long-term care facilities. With an increasing focus on comprehensive care and cost reduction, inclusion of longitudinal care providers is critical to providing high value care, especially in attempts to avoid duplication of testing or repeating failed treatment plans.

Appendix E: CONSULT mnemonic card

<u>FRONT</u>

C	**ontact the Consultant Courteously** Caller's name, training level, team, "I am requesting a CONSULT please."
O	**rient** Patient name, medical record number (MRN), floor, and bed
N	**arrow Question** Ask a focused question regarding diagnosis (workup, procedures) and/or management (treatments, pre-op)
S	**tory** Patient age, sex, *pertinent* history (HPI), hospital course, relevant labs, radiology, anticipated plan
U	**rgency** When should the patient be evaluated? 30 minutes to 1 hour (emergent), 2 to 3 hours (very urgent), 8 hours (urgent), 24 hours (routine)
L	**ater** Make a follow-up plan with the consultant (how and by when?) and give your pager/cell number
T	**hank you!**

<u>BACK</u>

Other Tips for Calling a Consult:
- Orient the listener to each component of the call.
- Be courteous and polite (even if they are not).
- Avoid calling a consult just to be "on board" with no particular question for that service to address.
- For diagnostic questions, have a differential in mind.
- For diagnostic questions, begin and anticipate the workup.
- For therapeutic questions, have an anticipated management plan in mind.
- Have pertinent information available (either written) or open on EPIC.
- Follow up with the consultant after the initial recommendations to: ask questions and discuss the outcomes of the case (it's your time to learn!).

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