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I. Introduction & Acknowledgements

I chose Brown for medical school in part because the leaders in medical education seemed invested in the student body. I heard stories of Barbara Fuller, the then-Director of Admissions, offering to babysit for students that had recently become parents, or exchanging funny pictures of animals over email with newly admitted students. During second look, a fourth year student mentioned his invite to dinner at the home of the Assistant Dean of Medical Education. I thought it might be nice to one day attend that dinner.

In truth, I had no idea what I was in for. No door was ever closed for me in medical school, and almost everyone in the office of medical education inexplicably knew me by name by the end of my first year. My emails never went unanswered, no matter how silly the content, and mountains were moved for me to allow for time off when I needed it most. I entertained the idea of almost every specialty for residency, and a representative member of almost every specialty graciously agreed to entertain my fleeting career aspirations.

Improving student education was genuinely at the heart of every action taken by the Office of Medical Education. I cannot express how grateful and fortunate I feel to have been able to attend medical school here at Brown.

To Professor Nidia Schuhmacher: you have given me near infinite hours of your time, and I realize now that you don’t really have any spare time to give. I can only imagine how many professional responsibilities you must have that take priority over your role in the medical Spanish curriculum, yet you were always intensely present and contagiously enthusiastic when we met in person and via email. Despite the fact that your office is located on college hill, it always felt like you were part of the medical school community. I am immensely
proud of what you have built with us; none of it would have been possible without your
contributions and guidance. Thank you for your tireless work to improve medical Spanish
education for future physicians.

To Dr. Richard Dollase: Thank you for hearing out every one of my project ideas for my
medical education scholarly concentration, even if only two of them were remotely feasible
and only one came to fruition. Your legacy will certainly live on in what I believe is a one-of-
a-kind student experience at Brown. Thank you for the role you have played in shaping our
culture at AMS.

To Dr. Paul George: I am astounded by your dedication to the student body on a daily basis. I
will never forget when I sent you a non-urgent email about my independent study at 1:57 AM
and received a response at 3:45 AM with an apology for the delayed reply, or when you
wrote one of the most heartfelt LORs I have ever received a mere 8 hours after I requested it.
I maintain my theory that a clone or two of yours must exist to keep the medical school
running. Thank you for being our fearless leader, our advocate and our teacher.
II. Medical Spanish

A. Personal Background

My interest in medical Spanish is largely a product of the community in which I was raised. Last year, Marin County, California ranked as the #1 healthiest county in California, but 54/57 in income inequality and racial segregation, with a staggering 15-year difference in life expectancy between adjacent largely white and largely non-white communities (1). I was sheltered from this reality until high school, when I began working locally in the restaurant industry. My embarrassingly rudimentary high-school Spanish was often the only link between the managerial staff and the Spanish-speaking “back-of-house” that ran the kitchen. For five years, I had a small window into the everyday injustices faced by the immigrant community in California. When the restaurant began experiencing financial challenges, it was the “back of house” who stopped receiving checks – precisely the subgroup of restaurant workers who were also supporting a family. A sexual harassment claim filed by a women working in the kitchen was immediately dismissed, while my claim against a fellow server resulted in his prompt termination. The managerial staff was unconcerned by these blatant acts of discrimination, as they felt protected by the lack of agency among the kitchen staff as a result of their undocumented status.

What little sense of social justice I had as a teenager and young adult I attribute to speaking Spanish. I found it was much harder to ignore and actively participate in the marginalization of Spanish-speaking communities once I could communicate with them. It is my hope that Spanish language education – particularly among those in a position of power – will facilitate social change. For this reason, Spanish language education has been a strong interest of mine since my undergraduate studies. I was involved in a number of educational activities in the department of Hispanic Studies at Middlebury College, including peer
tutoring, education in Spanish language at local primary schools, and my work as a research assistant for the department. I graduated with a BA in Spanish in May of 2011. During my time after college as a Clinical Research Assistant at Mount Sinai Medical Center, I spent many of my lunch hours tutoring through the Spanish Conversation Partners program, which aimed to improve the quality of communication between healthcare workers and Spanish-speaking patients. Before medical school, I spent three months in Matagalpa, Nicaragua working as a project supervisor with Amigos de las Americas, where I oversaw nine American high-school students working on four community-based public health initiatives in rural Nicaraguan communities.

In medical school, I realized that simply speaking Spanish was not enough to address healthcare disparities among patients with limited English proficiency (LEP). In fact, an unfortunate byproduct of many medical Spanish “crash-course” programs is the creation of providers who, empowered by their newly acquired language skills, fail to utilize professional interpreters in their interactions with Spanish-speaking patients. This so-called provider “false fluency” leads to worse health metrics for LEP patients (2,3,4). We must be thoughtful in the way we integrate language instruction into medical education. In keeping with the concept of “graduated responsibility,” we cannot allow providers with underdeveloped language skills to independently conduct encounters with patients in Spanish; doing so poses a threat to patient safety akin to entrusting trainees with procedural skills above their level of training. Along with this realization, I also stumbled upon a glaring deficiency in language access services: the failure of the healthcare system to adequately evaluate provider language proficiency. I was thus motivated to focus my scholarly activities in medical school on creating a conscientious program in medical Spanish.
B. Overview of the Medical Spanish Curriculum at Alpert Medical School

Brown has a unique, multifaceted medical Spanish curriculum. It consists of two preclinical electives, an interest group, two independent study courses, and a medical Spanish proficiency exam. Recently, we have made efforts to integrate a community engagement component into each aspect of the program. The mission of the curriculum is to (a) train future bilingual physicians and enhance language proficiency and cultural humility among those planning a career with LEP patients, (b) to equip future providers with an awareness of the limitations of their language proficiency in a way that prioritizes patient safety and optimizes health outcomes, and (c) to acquaint students of all proficiency levels with the provision of healthcare to Spanish-speaking communities in the greater Providence area.

One of the most inspiring aspects of my involvement in the medical Spanish curriculum was the opportunity to see the leadership team expand with the program. In four years, the program has grown from one medical student (Anna Costello, MD’16) to dozens of medical students spanning all four class years, along with multiple physician and non-physician faculty advisors, a graduate-level Spanish instructor, and three Spanish-speaking standardized patients. Students and faculty alike have been exceedingly generous with their time and resources, and their dedication is crucial to the survival and evolution of the program.

C. Intermediate Medical Spanish Preclinical Elective

The intermediate medical Spanish preclinical elective aims to equip students with a foundation to perform the history and physical exam in Spanish, as well as familiarize students with the vocabulary and grammatical structures that pertain to each medical specialty. This is designed to complement the advanced medical Spanish preclinical elective,
in which bilingual clinicians from the community lead conversations in Spanish pertaining to their particular practice.

As the second leader of the intermediate medical Spanish preclinical elective, my principal intervention was to restructure the elective to align with the Doctoring program, making the learning process more iterative and interdisciplinary. I also worked with my classmates and faculty mentor, professor Nidia Schuhmacher, to translate the Doctoring I & II checklists from English to Spanish (see Appendix A). Finally, I added an experiential learning requirement, and coordinated with physicians and local leaders to offer a wide range of clinical and nonclinical opportunities for engagement with Spanish-speaking communities in Rhode Island.

D. Medical Spanish OSCE: Background

Under Title VI of the Civil Rights Act, language assistance must be provided at all institutions receiving federal funding. Patients that receive language-concordant care have superior health metrics, including better outcomes, improved comprehension of treatment plans and procedures, and greater satisfaction with medical care (2, 5). Additionally, though healthcare institutions are only reimbursed for providing language assistance in a number of states, patients receiving adequate language services exhibit greater utilization of primary care and preventive services, leading to more cost-effective care (2,6).

Although, federal legislation has yet to rigorously define language access services, the department of justice has recommended the CLAS standards to define and guide implementation of linguistically and culturally competent care in healthcare settings. The CLAS standards outline a hierarchy of language access service options, citing the bilingual healthcare providers as the first preference for language access, followed by face-to-face and
telephonic interpreting. Ad-hoc interpreters (bilingual parties not trained in interpreting),
including family members and members of the staff, are not recommended for interpreting.
The literature supports these recommendations; ad-hoc interpretation has been shown to lead
to poorer health outcomes, miscommunication and ethical concerns in patient care (7, 8, 9).
This makes provision of language access services one of the most significant, modifiable
determinants of health for underserved and/or vulnerable populations.

Bilingual healthcare providers are the gold standard in provision of language access
services, yet rigorous requirements for linguistic and cultural competency of these providers
have yet to be implemented. There is a dire need to assess provider language proficiency, as
provider false-fluency leads to worse health metrics and underutilization of trained,
competent interpreters (2, 3, 4). Though the CLAS standards emphasize that linguistic and
cultural competency of bilingual providers must be verified by hospitals, little guidance is
offered as to how to assess proficiency. Furthermore, implementation has been slow. Only
18% of hospitals require evaluation of bilingual clinician language skills, and only 9% of
hospitals offer such evaluation (10). Although national, validated certification bodies for
medical interpreters have been established, little has been done to assess provider language
skills. The only validated test of provider proficiency is offered by the private sector (ALTA-
Lang), and the cost of testing ($200/person) may be prohibitive for healthcare institutions.

The role of medical students in providing language access services is seldom
mentioned in the literature. Medical students often enter their training with language skills,
and utilization of such skills may allow patients to receive quicker access to language
services. Additionally, exposure to patients with limited English proficiency may increase the
likelihood of students to choose a career that serves this population. Medical students are
often asked to provide language services during the clinical years, however incomplete
clinical training and unverified language skills paint a nebulous picture for their ability to provide appropriate language access. The Stritch School of Medicine at Loyola University has created an innovative assessment of medical student language competency, combining elements from the medical school curriculum (the Objective Clinical Structured Examination, or OSCE) with validated healthcare language assessment tools from the private sector (ALTA-Lang). However, the cost of the exam (Loyola suggests budgeting $250/student) may be prohibitive for medical schools. Furthermore, a rigorous definition of linguistic competency in the setting of the OSCE, as well as appropriate evaluators for the OSCE, has yet to be defined.

Until a national, validated assessment of healthcare provider proficiency is available, assessment of language skills may be best achieved early in a physician’s career. Receiving feedback through a medical Spanish OSCE may empower medical students to make informed decisions regarding whether to speak Spanish with patients without the use of an interpreter in their training and in their future career. Additionally, for physicians-in-training entering with language skills, medical school is an ideal period for acquisition of medical terminology in Spanish, as acquisition of medical terminology in English is occurring concurrently. For such an assessment to be feasible, it should also be accessible and affordable.

E. Medical Spanish OSCE: Intervention

As a medical education scholarly concentrator, I received a Summer Assistantship that allowed me to develop a Spanish language proficiency test for medical students. This project was intended to address the lack of language proficiency assessment among healthcare institutions and within medical education. It was important to me that the exam was also sustainable, generalizable and affordable.
My first task was to clearly define a language proficiency rubric. To this end, I based my rubric on established language competency scales from the Interagency Language Roundtable (used by the US Foreign Service) and the ACTFL Proficiency Guidelines. These guidelines aided me in the development of nine proficiency categories: general vocabulary, medical terminology, grammar, comprehension, adaptability, interpersonal dynamics, medical interview/physical exam skills, pronunciation, and fluency (see Appendix B). Within each category, there are descriptors for high, intermediate and low proficiency scores. Each level of proficiency is also paired with recommendations for use of Spanish with patients during routine clinical encounters.

Next, I wrote two clinical cases in both English and Spanish (see Appendix C). With the assistance of Dana Zink, I identified and trained two bilingual standardized patients. When one became unavailable for the exam, I was able to recruit and train a fourth-year medical student to stand in as the Spanish-speaking patient. The exam was piloted with a group of five students in 2014, and was run again with four students in 2015. Both exam sessions were held and recorded in the clinical skills suites. A third examination is planned for late May 2017.

A significant challenge in the creation of the OSCE was the recruitment of appropriate exam evaluators. Who would make a better evaluator, a bilingual clinician with a brief orientation to language pedagogy, or a Spanish language expert with a brief introduction to clinical medicine? After experimenting with various structures for the exam and discovering that the latter arrangement resulted in a more rigorous assessment of language competency, I landed on the following protocol: the exam is to be graded by graduate students, teaching assistants or faculty from the Hispanic Studies department. If the evaluators feel that their lack of clinical knowledge precludes them from accurately assessing
the student, the recording would be sent to the bilingual clinician-evaluators for further assessment.

An important component of administering the OSCE is ensuring that the students understand the limitations of the exam. This is not a validated exam, and the score should not be taken as the final word on a student’s Spanish language abilities, but rather as feedback meant to guide future use of Spanish with patients. Furthermore, the recommendations do not supersede hospital/clinic policies that prohibit medical students from conducting encounters in Spanish with patients without the assistance of a professional interpreter (this is notably the case within the Lifespan hospitals and affiliate sites).

F. Medical Spanish OSCE: Evaluation and Future Directions

Unfortunately, given the low number of participants and lack of a national standard for language proficiency examination in the context of healthcare, this is a difficult exam to validate. Additionally, the literature suggests that self-assessment of language proficiency may not be accurate, particularly in the “intermediate” category of language proficiency (11), indicating that examinee’s perception of their score may not be a useful indicator of the exam’s accuracy. Nevertheless, to evaluate the exam, I held focus groups with the students and standardized patients, as well as collected exit surveys from the participants. Students consistently reported that they felt their productive fluency was adequately evaluated by the exam, but questioned the validity of the OSCE in testing their receptive fluency. They identified that both the breath and depth of their comprehension was not adequately evaluated by the OSCE. Furthermore, the two fourth-year students participating in the exam commented on the one-dimensional nature of the OSCE. The OSCE is based on the preclinical Doctoring OSCE format, and expanding this to include clinical skills tested in the
third-year clerkship OSCEs may allow the exam to more realistically and thoroughly assess fluency. For example, a station may involve a student receiving a diagnosis and plan in English from a consulting physician (i.e. a consult for CAD resulting in positive cardiac stress test, requiring referral for catheterization) and would require the student to explain the diagnosis and plan to a patient in Spanish.

Based on student feedback, future directions for the medical Spanish OSCE include a more robust comprehension examination, as well an additional station that could be added to for upperclassman (MS3/MS4) examinees. I suspect that an exam that relies on students’ command of the medical interview & physical exam will by definition favor testing productive over receptive fluency. Additionally, the Spanish-speaking population of the greater Providence area is by no means homogeneous, and the present two-station OSCE can only test a maximum of two Spanish dialects. To remedy this situation, I propose that an additional comprehension section be added to the current two-station OSCE. The comprehension section could consist of a series of vignettes that describe a variety of patient presentations. These vignettes could be read by volunteers in the community that reflect the diversity of Spanish dialects spoken in the greater Providence area. Recordings of these vignettes could be played to exam participants, who would then take a written comprehension exam that could be graded by the medical students administering the OSCE. This would enhance testing of receptive fluency without adding to the cost or resources required to run the OSCE. It is my hope that this project could be carried out as a future summer assistantship with a first-year student interested in medical education, healthcare for the underserved and/or Spanish language pedagogy.

I do believe the OSCE was a successful first step in addressing deficiencies in language proficiency testing. In particular, I believe the OSCE was successful in being
accessible (i.e. cost-effective) and generalizable to other medical schools. The Office of Medical Education was generous enough to cover the cost of the standardized patients, evaluators, and equipment/personnel necessary to record the exam in the clinical skills suites. Based on the hourly compensation of the standardized patients and exam evaluators, I estimate that the exam costs approximately $25-50 per student, well below Loyola’s $250/student. As for the generalizability of the OSCE, many medical Spanish curricula are already established in other medical schools, but few involve any form of summative language assessment. Since the OSCE has been almost universally adopted as a modality for assessing the clinical skills of medical students, it would be feasible to implement an OSCE for language assessment purposes in almost any medical school. The only novel resources that would be required are (A) bilingual standardized patients, which can be recruited from the community and (B) appropriate evaluator(s) (with experience in healthcare, language pedagogy or linguistics) to provide students with feedback on their performance.

G. Undergraduate Course in Translation & Interpreting

I was fortunate to have the opportunity to work with Professor Nidia Schuhmacher in designing an undergraduate course in Translation and Interpreting, which is to include a health professions module. Despite the five-year partnership between AMS medical Spanish and Professor Schuhmacher, this marked the first time that a medical student became involved with curricular development at the undergraduate level. As undergraduate education is arguably the most crucial time for non-heritage speaker language acquisition, I was thrilled to have the opportunity to work on an undergraduate course for future health professionals. In my role assisting Professor Schuhmacher, I identified and reviewed textbooks, articles and syllabi pertinent to undergraduate education in translation and interpreting. I also forged
partnerships with local community organizations that offered translation and/or interpreting services, including RIFC, Clinica Esparanza, The Miriam Hospital and Dorcas International, in order to begin building a "community engagement" component of the course.

**III. Premedical education: “So You Want to be a Doctor?”**

During the summer of my fourth year, I worked as a TA for Brown Summer School's online course, "So You Want To Be a Doctor?" The course is designed to expose high-school students to the field of healthcare and the biomedical sciences. As a TA, I graded and provided feedback on research assignments, facilitated discussions of virtual patient cases, and provided final grades and evaluations for 15 students.

The most rewarding aspect of this position was the opportunity to provide career advice and mentorship for prospective premedical students during these particularly formative years of their education. I was able to virtually “meet” high schools students from around the world, and my growth as an educator was enormously enriched by not only the experience of teaching younger students, but also by teaching students that brought a wide range of cultural backgrounds to the virtual classroom. I also received a crash-course in online education, which was immensely challenging at times but also surprisingly gratifying in its own ways. I now realize that the online classrooms allows for a learning environment that transcends constraints related to space and time, facilitating a true culture of adult learning. That is, the learner’s daily schedule and city of residence does not preclude them from participating in the course. However, for those that are not fully developed as adult learners, or those with technological barriers (both related to access to technology and technology literacy), it is extraordinarily easy to fall behind in this environment.
IV. Medical Education

A. Curricular Development: Internal Medicine Clerkship TBL

I had the opportunity to author two team-based learning sessions for the Internal Medicine Clerkship of the LIC curriculum. This was my first experience in curricular development outside of medical Spanish, and I was surprised by how challenging and rewarding I found the process of writing questions and facilitation guides appropriate for the level of learning of a third-year medical student. The first TBL topic is thromboembolism, which consists of two exercises: 8 “mini-cases” and associated multiple-choice questions, and one “full case” with four associated multiple choice questions (see Appendix D). The multiple-choice questions associated with the mini-cases are fairly straightforward, whereas the multiple-choice questions associated with the full case have multiple acceptable answers and focus on areas that are controversial or vary by case/institution in the management of pulmonary embolism. The second TBL covers colorectal and lung cancer, and is similarly divided into two sections: 8 “mini-cases” with straightforward multiple-choice questions, and one exercise that covers colorectal cancer screening and incorporates more ambiguity in the management of five unique cases (see Appendix E). For each of the four exercises, I also wrote a faculty guide, which includes evidence supporting each case discussion.

B. Peer teaching: Content tutor, Exam TA, doctoring TA and Brown Student

Community Clinic

The activity in medical education that has brought me the greatest joy is easily the one-on-one peer teaching positions I have held throughout medical school. The most time-intensive activity has been my position as a peer content tutor (for which I have logged well over 100 hours). One-on-one content tutoring has afforded me the opportunity to teach and
mentor five different students through their first, second and third years of medical school. Perhaps the most striking revelation that has come from this experience has been the realization of how much I end up learning through the process of teaching. I have grown so much as both an educator and a student of medicine through my work as a content tutor.

Above all, I am humbled by the compassion, intelligence and perseverance of my students. There is no doubt in my mind that these five students will make stellar physicians who will effect positive change in the healthcare system. Their contributions to medicine will easily transcend the superficial accomplishments by which we judge medical students. Nevertheless, the feedback these students receive throughout medical school is all too often based on numbers that have little bearing on their potential as a future physicians, educators and leaders. It is precisely this frustration that motivates me to be an agent of change in medical education.

In addition to one-on-one tutoring, I have had the privilege of refining my skills as an educator in a number of different positions throughout medical school. My time as an exam TA for the first year curriculum introduced me to the traditional format of teaching via powerpoint-based didactics. This afforded me a window into the challenges faced by the hundreds of lecturers that educated me as a first and second-year student. To my surprise, I did not find didactic teaching to be as rewarding as teaching one-on-one or in a smaller group setting. Even through lecturing allowed me to stay organized and maintain complete control over the way information was presented, I found I preferred the messier, two-way exchange that occurs in smaller learning groups.

I was also fortunate to receive an introduction to clinical teaching as a TA for the Doctoring III GYN/GU sessions, as well as through my position as a senior medical student at the Brown Student Community Clinic (BSCC). Teaching emotionally charged content
such as the somewhat anxiety-provoking genitourinary exams was a particularly rewarding experience as it forced me to act as a teacher, a mentor and a coach simultaneously as I led the students through their own exam. I am proud of the physical exam and communication skills I have gained in medical school, and nothing made me feel more confident than transmitting those skills during what was often the second-year students’ first experience performing a pelvic/GU exam. Similarly, I loved teaching at the BSCC because it gave the chance to coach students through some of their earliest encounters with real patients during their preclinical years.

C. Clinical Skills Clerkship: Senior Medical Student

My recent experience as a SMS for the Clinical Skills Clerkship could not have been a better capstone for my work in medical education. The preparatory weeks preceding the clerkship afforded me my first opportunity to work in a team of educators, as well as allowed me to continue my work in curricular development and assessment design. Along with my classmates, I contributed to the creation of a new OSCE that included a full IM H&P, EKG interpretation, CXR interpretation and writing admission orders (See Appendix F). It was fascinating to apply some of the knowledge I gained from working on the medical Spanish OSCE to the restructuring of an exam that I had taken just two years prior.

During the actual CSC, I learned a great deal about my personal strengths and weaknesses as an educator. Given how often I was approached by my students to answer questions or give advice, I believe I was successful in presenting myself as an accessible resource to my students, as well as creating a comfortable, open environment during small group sessions. Many of my students readily brought up details of their personal life with me, and I enjoyed getting to know them each as individuals; I hope to stay in touch with them
after leaving for residency. I feel that I was able to build good rapport as an instructor – both in the small group setting and when interacting one-on-one with my students. My friendly demeanor perhaps backfired in that it was difficult to hold my students to the degree of professionalism that will be expected of them on their clerkships, but this was largely remedied by conducting individual conversations during midterm feedback sessions.

I struggled most as a CSC SMS in striking a balance between facilitating a conversation and dominating the dialogue during my small group sessions. I highly value precision and accuracy when discussing content, and at times this compelled me to interrupt or talk over the small group participants. Consequently, I missed out on opportunities to facilitate a discussion that would allow for students to arrive at conclusions on their own, which would have enhanced their engagement in the material and made the content more memorable. As the knowledge gap between my students and me widens, I imagine the temptation to interject will only increase. In the future I hope to focus on strategies that will allow me to grow as a facilitator and take a backseat as a lecturer.

V. Final Reflections

When I first heard about the scholarly concentration program at Brown, it was described to me as scholarly work “akin to a college minor.” To my surprise, that description ended up falling short in capturing the importance of my development as an educator over the last four years. The activities described in this portfolio have brought challenges and rewards beyond what I could have anticipated as a first year student.

I learned that medical education is hugely interdisciplinary; the medical Spanish OSCE could have fit into seven of the fourteen available scholarly concentrations. The interdisciplinary nature of medical education has afforded me immense flexibility in taking
on projects and positions that matter to me. Through my work as a medical education concentrator, I have advocated for the treatment of language proficiency as an entrustable professional activity. To be an entrustable professional ability, language proficiency must also be measurable and standardized on a national level. Most importantly, this means that language proficiency needs to be taken seriously by medical schools, residency programs and hospital systems. By relegating language skills to the domain of extracurriculars and online “survival” courses, these institutions delegitimize language proficiency, reducing it to a “hobby” rather than a fundamental competence that requires lifelong learning and substantially contributes to disparities in health outcomes for Spanish-speaking patients. My work in medical education has allowed me to amplify this message to reach multiple students, some of whom I hope will in turn carry this message to their future students. The multiplicative effect of education is enormously powerful, and I will consider my career a success if I am able to harness it to effect positive change in the healthcare system.

Perhaps the greatest surprise has been how humbled I have become by my experience as an educator. Teaching is unbelievably hard! When I was invited to be a tutor as a rising MS2, I assumed my success on the block exams would automatically translate into my students’ success on block exams. Teaching did not necessarily come naturally to me, and I now believe that teaching is more of a skill that requires a lifetime to master rather than an elusive innate “gift.” I am immensely looking forward to a career that allows me to grow as an educator as well as a clinician.
References


Appendix A: Translated Doctoring Checklists

CC-SH + Signos Vitales

- Presentarse al paciente
- Dele la mano (si es apropiado).
- Determine cómo el paciente quiere ser llamado.
- Expliquele su posición en el equipo médico
- Negocie una agenda para el encuentro, incluyendo un historial médico y/o un examen físico.
- Pregúntele la edad del paciente.
- Lávese las manos/use limpiador alcohólico ("Foam In")
- Averigüe quién es el doctor de cabecera del paciente

Motivo de consulta e historia de la enfermedad actual

- Identifique el motivo de consulta del paciente con sus propias palabras.
- Deje que el paciente le diga su motivo de consulta y su declaración inicial sin interrumpir.
- Inicio de síntomas/dolor (cuando empezaron los síntomas)
- Factores agravantes (actividades o acciones que empeoran los síntomas)
- Factores aliviadores (actividades o acciones que mejoran los síntomas)
- Calidad/tipo del dolor (e.g. palpitante, punzante, aplastante)
- Región/localización del dolor (dónde ocurre el dolor en el cuerpo)
- Trayectoria del dolor (a dónde va el dolor - e.g. a la espalda, al hombro)
- Severidad del dolor (en una escala del 1 al 10)
- Síntomas asociados (otros síntomas que ocurren junto con el motivo de consulta)
- Frecuencia de síntomas/dolor (la frecuencia con que ocurren los síntomas), duración, periodicidad, transcurso.
- Otros episodios previos similares (y cómo fueron tratados).
- Pregúntele al paciente sobre sus preocupaciones o temores sobre la enfermedad.
- Determine las creencias y/o las expectativas del paciente sobre la enfermedad y el tratamiento.
- Deje que el paciente le relate su historia, interrumpiendo cuando sea apropiado.
- Use preguntas abiertas primero y luego las preguntas más cerradas para adquirir información y explorar los problemas del paciente.
- Use un resumen de segmento después de obtener la HEA para darle tiempo a su paciente para corregir o agregar más información.

Historial médico

- Declaración de transición
- Problemas médicos activos
- Hospitalizaciones, incluyendo el año y el motivo.
- Cirugías previas, incluyendo el año y cualquier complicación.
- Medicamentos con recetas (y las dosis).
- Medicamentos sin receta (y las dosis).
- Remedios de hierbas u otros remedios/tratamientos.
- Alergias a medicamentos.
- Descripción de la reacción alérgica o N/A si el paciente no tiene alergias.
Historia Familiar

- Declaración de transición
- Enfermedades en la familia
- Padres: sus edades y sus enfermedades (y/o la causa de muerte y a qué edad).
- Hermano/a(s): sus edades y sus enfermedades (y/o la causa de muerte y a qué edad).
- Hijo/a(s): sus edades y sus enfermedades (y/o la causa de muerte y a qué edad).

Historial social

- Declaración de transición
- Use lenguaje de género neutro e inclusivo
- Arreglos de vivienda: quién vive en la casa del paciente, algún problema en su casa/peligro a su salud
- La familia del paciente y sus relaciones
- Estado de trabajo actual y profesión, exposición a peligros de salud, impacto de cualquier problema de salud en su funcionamiento.
- Factores de estrés significativos y problemas financieros que puedan afectar la salud
- Recursos de apoyo social
- Uso de tabaco
  - Número de cajetillas/paquetes por día y por cuánto tiempo ha fumado
- Uso de alcohol (cantidad y frecuencia)
  - Cuestionario CAGE, si es aplicable (i.e. >3 bebidas/día o >7 bebidas/semana para mujeres y >4 bebidas/día o >14 bebidas/semana para hombres)
    - ¿Ha sentido alguna vez la necesidad de beber menos?
    - ¿Le ha molestado que la gente lo critique por su hábito de beber?
    - ¿Alguna vez se ha sentido mal o culpable por su hábito de beber?
    - ¿Alguna vez ha necesitado beber en la mañana para calmar los nervios o quitarse una resaca?
- Uso de otras drogas, incluyendo tipo, frecuencia, duración y método de uso.
- Efecto de la enfermedad actual en su trabajo y las responsabilidades familiares
- Necesidades culturales, espirituales y religiosas relacionadas con su cuidado médico (si es aplicable)
- Seguridad: violencia doméstica/asalto sexual

Historial sexual

- Declaración de transición
- "¿Está usted involucrado/a con alguien sexualmente?"
  - Si no - "¿Alguna vez ha estado involucrado/a con alguien sexualmente?"
    - Si no - "¿Cree que puede estar en una relación sexual en el futuro cercano?"
- "¿Cuántas parejas sexuales ha tenido en los últimos 6 meses? ... ¿En su vida?"
- "¿Sus parejas han sido hombres, mujeres, o ambos?"
- "¿Usa algún tipo de anticonceptivo?"
  - Si sí - "¿Qué está usando?"
  - Si no - "¿Está usted (o su pareja) planeando un embarazo?"  "¿Tiene alguna creencia o preocupación por el uso de anticonceptivos?"
• "¿Usa usted condones u otras formas de protección para prevenir la transmisión de infecciones sexuales?"
  o Si sí - "¿Con qué frecuencia?"
• "¿Alguna vez ha tenido una infección de transmisión sexual?"
• "Una prueba del VIH de rutina es recomendada para todos. ¿Alguna vez ha tenido una prueba del VIH?"
• "¿Tiene algún problema o alguna preocupación con su funcionamiento sexual?"
  o Si sí - "¿Qué le preocupa?" y haga preguntas específicas de género incluidas abajo.
• "¿Su salud/enfermedad ha afectado su función sexual de alguna manera?"
  o En caso afirmativo de cualquier pregunta de arriba - "¿Estos problemas han afectado su relación con su pareja?"

**Preguntas de género específicas relacionadas a las etapas del ciclo sexual**

<table>
<thead>
<tr>
<th>Etapas de Kaplan</th>
<th>Femeninas</th>
<th>Masculinas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Excitación</strong></td>
<td>¿Tiene algún problema de lubricación?</td>
<td>¿Tiene problemas teniendo o manteniendo una erección?</td>
</tr>
<tr>
<td></td>
<td>¿Tiene dolor al tener sexo?</td>
<td>¿Tiene erecciones espontáneas a veces? Si sí, ¿son normales?</td>
</tr>
<tr>
<td></td>
<td>Si sí: ¿Dónde está el dolor?</td>
<td></td>
</tr>
<tr>
<td><strong>Orgasmo</strong></td>
<td>Tiene alguna dificultad para tener orgasmos?</td>
<td>Tiene algún problema de eyaculación prematura, o de tardanza?</td>
</tr>
</tbody>
</table>

**Signos Vitales**

• Declaración de transición. Pida permiso para proceder.
• Lávese las manos con jabón y agua o use una solución antibacteriana (puede hacer esto ahora o al principio de la entrevista)
• Mida el **ritmo cardíaco**
  o Cuente el número de pulsos en la arteria radial que ocurren en 15 segundos y multiplique por 4.
  o Evalúe el ritmo (i.e., regular o irregular)
  o Note la fuerza e intensidad del pulso (i.e., normal, débil o saltón)
• Mida el **ritmo de respiración**
  o Cuente el número de ciclos **respiratorios** que ocurren en 30 segundos y multiplique por 2.
  o Note el ritmo, la profundidad, y el esfuerzo al respirar.
• Mida la presión sanguínea después de que el paciente haya estado sentado tranquilamente por al menos 5 minutos.
  o Use la manga de presión sanguínea (esfígomanómetro) de tamaño apropiado.
  o Centre el tensiómetro sobre la arteria braquial, con el borde de abajo de la manga a una distancia aproximada de unos 2.5 centímetros arriba de la fosa antecubital. Ajuste la manga firmemente.
Coloque el brazo del paciente para que esté ligeramente flexionado en el codo. Apoye el brazo del paciente para que la arteria braquial, en la fosa antecubital, esté al nivel del corazón.

*Estime la presión sistólica usando el toque. (OPCIONAL)*

- Presione el pulso radial. Rápidamente infle la manga hasta que el pulso desaparezca.
- Note la presión en la que el pulso desaparece.
- Desinfle la manga rápida y completamente.

- Ponga el diafragma o la campana de su estetoscopio sobre la arteria braquial.
- Infle la manga a 30 mm Hg arriba de la presión sistólica aproximada (o a 160 mm Hg). Desinfle lentamente, a un ritmo de 2-3 mm Hg por segundo.
  - Note la presión sistólica (presión en la cual se escuchan los primeros dos latidos consecutivos).
- Continúe bajando la presión lentamente hasta que los sonidos desaparezcan.
  - Note la presión diastólica (la presión en la cual el sonido desaparece).
- Apunte las presiones sistólicas y diastólicas redondeando al los 2mm Hg más cercanos.
  - Tome la presión del otro brazo.
- Dígale al paciente su pulso, su ritmo de respiración y los apuntes de presión sanguínea, y también dígale los valores normales para cada uno.

**Cierre**

- Pregúntele al paciente si tiene alguna otra pregunta o preocupación.
- Resuma la información que obtuvo durante la entrevista y el examen físico.
- Clarifique sus planes para el seguimiento médico (si es aplicable).
- Dele las gracias y dele la mano.
- Lávese las manos/use limpiador basado en alcohol ("Foam Out")

**Doctoring I Checklist: Revisión por sistemas**

Declaración de transición

**Revisión por sistemas:**
- General/Constitucional: fiebre, escalofríos, cambios de apetito, cambios de peso (intencionales o no intencionales), fatiga, insomnio.
- Piel/Dermatológico: erupciones, lesiones, cambios de lunares.
- Cabeza, ojos, oídos, nariz, y garganta: mareo (como si fuera a desmayarse), desmayo/pérdida de consciencia (síncope), que le da vueltas el cuarto (vértigo), heridas de cabeza, cambio de visión, visión doble, uso de lentes (gafas) y/o lentes de contacto, ceguera, trauma ocular (daño al ojo), ojos rojos o con secreción, sequedad de ojos, pérdida de oído, zumbido de oídos (tinnitus), uso audífono, sangrados nasales (epistaxis), secreción nasal (rinorrea), pérdida del olfato, sangrados en las encías, dolor al tragar (disfagia), dificultad para tragar, ronquera, lesiones en la boca o nariz, dolor de dientes.
- Cuello: masas, rigidez.
- Cardíaco: dolor de pecho, palpitaciones, falta de aire al ejercitarse, levantarse de noche con falta de aire (disnea nocturna), #almohadas con las que duerme (ortopnea), hinchazón en los pies (edema).
Pulmonar: falta de aire al descansar/con actividad, tos, flema (de qué color, con o sin sangre), silbidos.
Gastrointestinal: náusea, vómito, acidez, dolor de estómago, hinchazón abdominal, cambio en la rutina del baño, diarrea, estreñimiento, sangrados rectales, heces negras (melena), piel color amarilla (ictericia)
Genitourinario: frecuencia urinaria, urgencia, disuria, hematuria, libido bajo (mujeres: menstruación irregular, dismenorrea, dispareunia, secreción vaginal, síntomas de menopausia; hombres: secreción del pene, disfunción eréctil, hinchazón o dolor en los testículos.)
Musculo-esquelético: dolor de músculo, dolor en las articulaciones, rigidez, hinchazón, movimiento limitado, trauma/lesión.
Neurológico: adormecimiento, debilidad, hormigueo, mareos, dificultad con el balance/al caminar, dolor de cabeza (jaqueca), cambios de visión, problemas de memoria.
Hema/Inmunológico: fácil aparición de moretones, sangriento fácil, viajes recientes.
Psiquiátrico: problemas de concentración, depresión, ansiedad, pensamientos suicidas u homicidas.

Si el ROS es el último elemento de su entrevista, cierre la conversación. Si no, siga con el examen físico.

Cierre
Pregúntele al paciente si tiene alguna otra pregunta o preocupación.
Resuma la información adquirida durante la entrevista.
Clarifique los planes para el seguimiento médico (si es aplicable).
Dele las gracias y dele la mano.
Lávese las manos con agua y jabón o con un limpiador a base de alcohol.
## Appendix B: Medical Spanish OSCE Rubric

<table>
<thead>
<tr>
<th>High Proficiency:</th>
<th>Intermediate proficiency:</th>
<th>Low proficiency:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong> Communication in medical contexts is highly effective and consistent.</td>
<td><strong>Description:</strong> Communication is somewhat effective, but is inconsistent. Specific, modifiable weaknesses can be identified as areas for improvement.</td>
<td><strong>Description:</strong> Communication is not effective. Productive language lacks accuracy and grammatical control to adequately communicate meaning to patient. Deficiencies in comprehension compromise the student’s ability to take an accurate history and conduct a sound medical interview.</td>
</tr>
<tr>
<td><strong>Recommendations:</strong> Language ability is appropriate to independently conduct routine clinical encounters</td>
<td><strong>Recommendations:</strong> Student is not yet ready for independent interaction with patients in Spanish. However, since weaknesses are identifiable and modifiable, student can work towards becoming adequately proficient for independent interaction. Interaction with patients is suggested in supervised circumstances, such as with an interpreter or a Spanish-speaking clinical mentor, to facilitate improvement of language skills.</td>
<td><strong>Recommendation:</strong> Student is not recommended for interaction with patients in Spanish. Significant, intensive work would be required for language abilities to approach a level appropriate for clinical interaction.</td>
</tr>
</tbody>
</table>

### Vocabulary:

#### General
- Vocabulary has sufficient breadth and depth to precisely express intended meaning. On occasion a word or phrase may be unfamiliar, in which case student effectively uses communicative strategies such as circumlocution (talking around a word).
- Vocabulary is sufficient to carry out the interview and physical exam, however significant gaps in vocabulary are apparent. May rely heavily on circumlocution (talking around an unfamiliar word or phrase) to express meaning. Student may occasionally be unable to express intended message due to inadequate breadth and depth of vocabulary.
- Vocabulary is clearly insufficient to conduct a medical interview or physical exam. Student is often unable to express intended message due to inadequate vocabulary.

#### Medical Terminology
- Medical vocabulary has sufficient breadth and depth to precisely express intended meaning. On occasion a word or phrase may be unfamiliar, in which case student effectively uses communicative strategies such as circumlocution (talking around a word). When speaking to the patient, word choice is professional and is not overly technical.
- Medical vocabulary is sufficient to carry out the interview and physical exam, however significant gaps in medical vocabulary are apparent. May rely heavily on circumlocution (talking around an unfamiliar word or phrase) to express meaning. Student may occasionally be unable to express intended message due to inadequate breadth and depth of medical vocabulary. Medical vocabulary may be more technical than is appropriate for speaking with a patient, or may be unprofessional.
- Medical vocabulary is clearly insufficient to conduct a medical interview or physical exam. Medical vocabulary is insufficient to express meaning properly.
| **Grammar** | Mastery of many grammatical forms allows for clear and precise interaction. Has consistent control of past, present and future tenses. Errors are infrequent, and do not appear to distract the patient, interfere with communication or impact understanding. No patterns of error are evident. | Demonstrates control over most basic grammatical forms. Speaks in past, present and future tenses, although may do so with grammatical “roughness” (i.e. improper conjugation or concordance of verbs). Makes occasional errors that do not significantly impact understanding. Patterns in error may be evident. | Does not have sufficient control over grammatical structures to effectively communicate with patient. Errors are frequent and may compromise understanding. May only be able to communicate in short, memorized phrases. May not have adequate control over past, present and future tenses. |
| **Comprehension** | Demonstrates understanding of both lay and technical medical terminology. May ask patient for occasional clarification. Oral presentation is congruent with the details the case. | Demonstrates a fair understanding of both lay and medical terminology, but understanding may be inconsistent. May frequently ask patient for repetition or clarification. Understanding may be impacted by length of patient’s discourse. Oral presentation may occasionally conflict with case details due to inadequate comprehension. | Does not demonstrate a sufficient understanding of lay and/or medical terminology to participate in clinical interaction. May frequently asks patient for repetition or to slow down pace of speech. May only demonstrate understanding of memorized words/phrases. |
| **Adaptability** | Handles unexpected situations or deviations from the checklist successfully and with apparent ease. There is no deterioration in vocabulary, grammar or comprehension in unexpected situations. | May have trouble with comprehension when confronted with an unexpected situation or deviation from the checklist, though this is remedied by repetition or rephrasing. May have insufficient vocabulary or control of grammatical structure to communicate meaning precisely in such a situation. Student may have adequate control of grammar and vocabulary within the context of the checklist, but language noticeably deteriorates in an unexpected situation | Is unable to sustain interaction with the patient in the context of an unexpected situation or deviation from the checklist. |
| **Interpersonal dynamics** | High communicative ability allows student to interact with the patient naturally, using turn-taking and nonverbal communication strategies appropriate for a clinical interaction. | Communicative ability is adequate to maintain a dialogue with the patient. The flow of the interview may be impacted by insufficient communicative ability; there may be long pauses in conversation, or student may interrupt patient. | Difficulties with communication compromise the structure of the medical interview or physical exam. |
| **Medical Interview and Physical Exam Skills** | The student’s history-taking or physical exam is not impacted by communicative challenges. Although a few elements of the interview or exam may be performed incorrectly or omitted, these mistakes would be expected in an English OSCE. | Communicative ability is adequate to complete the medical interview and/or physical exam. However, ineffective communication noticeably affects components of the student’s history-taking or physical exam skills. The information in the history may be compromised by ineffective communication. The physical exam may be inefficiently executed due to communicative challenges. The required tasks may not be completed in the allotted time due to difficulties in communication. | Communicative skills are not adequate to execute the medical interview and/or physical exam. |
| **Pronunciation** | Pronunciation is natural and easy-to-understand. A foreign accent may be present, but it does not interfere with the patient’s understanding or distract from the clinical interaction. | Pronunciation does not interfere with patient’s understanding, but may sound unnatural or be strongly influenced by native language. | Pronunciation may interfere with patient’s understanding. Student may not be intelligible due to inaccurate pronunciation. |
| **Fluency** | Speaks naturally, without any lengthy hesitation. | Student speaks in full sentences, however speech is marked by pauses, rephrasing and/or self-correction. | Student has difficulty speaking in full sentences, and may be limited to short phrases. Interaction with patient may be marked by long pauses, false starts and reformulations. |

**Student Proficiency Scoring**

<table>
<thead>
<tr>
<th>Vocabulary: general</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary: medical terminology</td>
<td></td>
</tr>
<tr>
<td>Grammar</td>
<td></td>
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<tr>
<td>Comprehension</td>
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<tr>
<td>Adaptability</td>
<td></td>
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<tr>
<td>Interpersonal dynamics</td>
<td></td>
</tr>
<tr>
<td>Medical Interview and Physical Exam Skills</td>
<td></td>
</tr>
<tr>
<td>Pronunciation</td>
<td></td>
</tr>
<tr>
<td>Fluency</td>
<td></td>
</tr>
</tbody>
</table>
Overall Proficiency score:
High proficiency: scored high proficiency in at least 7/9 categories; never scored low proficiency
Intermediate proficiency: Scored intermediate or high proficiency in at least 7/9 categories.
Low proficiency: scored low proficiency in ≥ 3 categories

General comments for students:
Appendix C: Medical Spanish OSCE Cases

OPENING SCENARIO
You are evaluating a patient in your primary care office with a chief complaint of abdominal pain. The patient prefers to receive their healthcare in Spanish, and speaks very little English.

Vital signs:
BP: 135/85  Pulse: 112, regular  Temperature: 38.5°C  Respiration: 22 per min

EXAMINER’S TASKS

Interview: Perform a full medical interview, including CC, HPI, PMH, FH, Social Hx, Sexual Hx and full ROS in Spanish. Screen for alcoholism using the CAGE questionnaire if appropriate. You do NOT need to perform a physical exam.

Oral presentation: please give an oral presentation of the medical history IN ENGLISH to the camera. You do NOT need to report the vital signs or any physical exam findings.

You will have 30 minutes in total: 20 minutes to perform the above history, and 10 minutes to prepare and give the oral presentation. Your SP will then give you feedback on their experience as your patient for 5 minutes. Please remember that you are being evaluated on your language skills, not your clinical skills. Your evaluation will not be affected by modest omissions or deviations from the checklist.

The patient may ask you for advice or information that is beyond your medical knowledge. Please try to address their questions and concerns to the best of your abilities. We want you to demonstrate that you can discuss complex and sensitive topics with Spanish-speaking patients; we are less concerned with the accuracy of your advice.
Introducción
Nombre:
Edad:
Motivo de consulta: dolor abdominal

Historia de la enfermedad actual:
Descripción: “me duele mucho el estomago. El dolor es agudo, tan fuerte que me da náuseas, y me cuesta caminar. Aún el movimiento del carro cuando manejé a la clínica fue muy doloroso. Es muy doloroso.”
Inicio: “hace un día (24 horas) que empezó el dolor.”
Duración/frecuencia: dolor constante
Calidad: “Al principio, el dolor era más suave pero incómodo. Actualmente el dolor es muy fuerte.”
Severidad: 9/10
Quitación/provocación: “nada me alivia el dolor. Tomé dos Tums (antiácidos) pero no me quitaron el dolor.”
Localización/radiación del dolor: “ayer me dolía el ombligo. Hace dos horas el dolor se movió al lado derecho.”
Síntomas asociadas: “estoy con nauseas. Vomité después de almorzar pollo hoy. “

Historia médica
Condiciones médicas: colesterol alto, alergia al polen
Medicamentos: Zyrtec (para las alergias), Lipitor (para el colesterol). “No recuerdo la dosis.”
Hospitalizaciones: “me sacaron la vesícula biliar en el 2005”
Alergias: Penicilina (“me salieron ronchas”), polen

Historia familiar
Madre: 74, hipertensión
Padre: Murió hace seis meses (75 años de edad) del cáncer pulmonar. Fumaba cigarrillos.
Hermanos: un hermano (46), una hermana (47). “Ambos están muy sanos”.
Hijos: No tiene

Historia social
Situación de vivienda: “vivo con mi marido en un apartamento; me siento segura en casa.”
Ocupación: maestra, séptimo grado. “Los estudiantes acaban de realizar los exámenes finales, y por eso estoy bastante abrumada.”
Relaciones sociales: “mi hermana vive en Providence también, me molesta a veces pero me apoya mucho.”
Impacto de enfermedad actual: “tengo que recuperarme y regresar al trabajo, porque estoy muy ocupada.”
Consumo de tabaco, alcohol y drogas: nada de tabaco ni drogas. “tomo un poquito, pero nunca me embolo.” Consume dos tragos de alcohol cada día (14 cada semana), pero contesta “no” a cada pregunta del cuestionario de CAGE.
Historia sexual
Sexualmente activo: “Sí, con mi esposo”
Compañeros sexuales:
Actualmente: 1
6 meses: 1
En total: 3 (masculinos)
**Método anticonceptivo:** “Usamos condones, pero me gustaría usar algún método más efectivo. ¿Qué otras opciones hay?”

**Enfermedades de transmisión sexual:** “no que yo sepa, pero nunca me han hecho el análisis”

**Funcionamiento sexual:** sin problemas

Revisión de sistemas
**General:** fiebre y escalofríos. “Estoy a dieta”
**HENT:** negativo.
**Ojos:** negativo
**Cardiovascular:** negativo
**Pulmonar:** negativo
**Gastrointestinal:** positivo para nauseas y vómitos. Niega estreñimiento, diarrea y heces anormales.
**Genitourinario:** negativo
**Musculoesquelético:** negativo
**Piel:** negativo
**Neurológico:** negativo
**Psiquiátrico:** negativo
**Endocrino:** negativo
**Hematológico/linfático:** negativo
Introduction

Name:

Age:

Chief complaint: abdominal pain

History of present illness

Description: “my stomach hurts a lot. It’s a sharp pain, so strong that it makes me nauseous and I have trouble walking. Even the movement in the car on the drive to the clinic was very painful. It’s very painful”

Onset: “the pain began yesterday (24 hours ago)”

Duration/frequency: constant pain

Quality: “In the beginning, the pain was softer, but uncomfortable. Right now, the pain is really strong”

Severity: 9/10

Palliation/provocation: “nothing alleviates the pain. I took two Tums but it didn’t make the pain better”

Localization/radiation: “yesterday my bellybutton hurt. Two hours ago the pain moved to the right side.”

Associated symptoms: “I’m nauseous. I vomited after eating chicken today for lunch.”

Past medical history

Medical conditions: high cholesterol, pollen allergies

Medications: Zyrtec (For allergies), Lipitor (for cholesterol). “I don’t remember the dosage”

Hospitalizations: “they took out my gallbladder in 2005”

Allergies: Penicillin (“I got a rash”), pollen

Family History

Mother: 64, hypertension

Father: died six months ago (65 years old) of lung cancer. He smoked cigarettes.

Siblings: brother (36), sister (38). “Both are very healthy.”

Social history

Living situation: “I live with my husband in an apartment; I feel safe at home”

Employment: teacher, seventh grade. “The students just finished their final exam, and I’m pretty overwhelmed.”

Social network: “my sister lives in Providence as well. She annoys me from time to time but she supports me a lot.”

Impact of present illness: “I have to get better and go back to work; I’m very busy”

Substance use: no tobacco or drugs. “I drink a little bit, but I never get drunk.” Consumption of two drinks every day (14 every week), but answers “no” to every question on the CAGE questionnaire.

Sexual History

Sexually active: “yes, with my husband”

Sexual partners:

Currently: 1

6 months: 1
In total: 3 (male)
**Method of birth control:** “We use condoms, but I would like to use a more effective method. What other options are there?”
**Sexually transmitted diseases:** “not that I know of, but I’ve never been tested”
**Sexual functioning:** no concerns

**Review of systems**
**General:** fever, chills. “I’m on a diet”
**HENT:** negative
**Eyes:** negative
**Cardiovascular:** negative
**Pulmonary:** negative
**GI:** positive for nausea, vomiting. Negative for constipation, diarrhea and abnormal bowel movements.
**GU:** negative
**MSK:** negative
**Skin:** negative
**Neurologic:** negative
**Psychiatric:** negative
**Endocrine:** negative
**Hematologic/lymphatic:** negative
OPENING SCENARIO
You are evaluating a patient in your primary care office with a chief complaint of headache. The patient prefers to receive their healthcare in Spanish, and speaks very little English.

**Vital signs:**
BP: 135/85  Pulse: 80, regular  Temperature: 37°C  Respiration: 18 per min

**EXAMINER’S TASKS**

**Interview:** Perform an abbreviated medical history, including CC, HPI, PMH and general and neurologic ROS in Spanish.

**Neurologic physical exam:** Perform a cranial nerve exam (CN II – XII).

**Oral presentation:** please give an oral presentation IN ENGLISH to the camera.

You will have 30 minutes in total: 20 minutes to perform the above history and physical, and 10 minutes to prepare and give the oral presentation. Please present the entire medical history, vital signs and findings from the cranial nerve exam. Your SP will then give you feedback on their experience as your patient for 5 minutes. Please remember that you are being evaluated on your language skills, not your clinical skills. Your evaluation will not be affected by modest omissions or deviations from the checklist.

The patient may ask you for advice or information that is beyond your medical knowledge. Please try to address their questions and concerns to the best of your abilities. We want you to demonstrate that you can discuss complex and sensitive topics with Spanish-speaking patients; we are less concerned with the accuracy of your advice.
Introducción
Nombre:
Edad:
Motivo de consulta: dolor de cabeza
Acotaciones escénicas: preocupada, pero cooperativa y capaz de contar una historia clara.

Historia de la enfermedad actual:
Descripción: “Tengo dolor de cabeza terrible que empezó hace dos horas. Empezó con estas manchitas negras, flotando, fue progresando, hasta el momento no pude ver desde este lado. Solamente duró veinte minutos pero me asustó muchísimo porque creí que se me había dañado el ojo o perdido la visión. Después, poco a poco la visión me regresó, pero se convirtió en un terrible dolor.”
Duración/frecuencia: dolor constante
Calidad: “Un dolor pulsante, muy fuerte”
Severidad: 9/10
Paliación: “Tomé Tylenol y no me ayudó.”
Provocación: “Me duele más cuando hay mucho sonido o luz.”
Localización/radiación del dolor: “el dolor está por todo el lado izquierdo de la cabeza, aquí, en la ceja y en el sentido.”
Manejo de una nueva afección: “Tengo nauseas. Vomité hace veinte minutos.”
Incidentes similares en el pasado: “a veces la regla me da dolor de cabeza, pero nunca como esto.”
Preocupaciones/temores: “Nunca me he sentido tan mal en mi vida. Tengo miedo que sea algo muy grave.”

Historia médica
Condiciones médicas: “tuve cáncer del cuello de útero, pero está resuelto”
Medicamentos: vitaminas
Hospitalizaciones/cirugías: histerectomía (2012), sin complicaciones
Alergias: “Una vez me dieron Bactrim para una infección urinaria, y me dio picazón”

Revisión de sistemas
General: negativo
Neurológico: cambios de visión ya mencionados

Examen neurológico (nervios craneales): normal
Cierre (antes que el estudiante salga): “Tengo miedo que sea cáncer del cerebro. Tenía mucho dolor con el cáncer del cuello del útero, y estoy muy preocupada porque podría tener cáncer otra vez. ¿Piensa Ud. que es cáncer? ¿Qué cree Ud. que tengo?”
Si el estudiante le da el diagnóstico de la migraña, pídale que le explique lo que es una migraña.
Introduction

Name:

Age

Chief Complaint: Headache

Acting characteristics: worried, but cooperative and able to give a clear history.

History of present illness

Description: I have a terrible headache that began two hours ago. It started with these black spots, floating around, and then it progressed, to the point that I couldn’t see from this side. It only lasted for 20 minutes, but it scared me a lot because I thought I had damaged my eye or lost my vision. Afterwards, my vision slowly returned, but then it turned into a terrible pain.

Duration/frequency: Constant pain

Quality of pain: “Pulsating, very strong pain”

Severity: 9/10

Palliation: “I took a Tylenol and it didn’t help.”

Provocation: “It hurts more with light or sound”

Localization/radiation: “the pain is on the entire left side of my head, here, in my eyebrow and forehead.

Associated symptoms: I’m nauseous. I vomited twenty minutes ago.

Previous similar episodes: “sometimes my period gives me a headache, but never like this one”

Fears/concerns: I’ve never felt so horrible in my life. I’m afraid it’s something serious.

Past medical history:

Medical history: “I had cervical cancer, but it has resolved”

Medications: vitamins

Hospitalizations/surgeries: hysterectomy (2012), no complications

Allergies: “when they gave me Bactrim for a urinary infection, and it gave me a rash.”

Review of systems

General: negative

Neurologic: changes in vision (already mentioned)

Neurologic exam (cranial nerve exam): Normal

Closing (before the student leaves): I’m afraid it’s brain cancer. I had a lot of pain with the cervical cancer, and I’m very worried because I could have cancer again. Do you think it’s cancer? What do you think I have?

If the student gives you the diagnosis of a migraine, ask them to explain what a migraine is.
Appendix D: IM Clerkship Thromboembolism TBL

Faculty Guide for Multiple Choice Questions

1. A 63-year-old woman presents with two hours of shortness of breath and right-sided chest pain. The chest pain is a sharp, 4/10 non-radiating pain that is made worse by inspiration. Over the past two days, she has also noticed that her right calf has looked larger than her left calf, with an associated dull ache. Past medical history is significant for hypertension. She is a nonsmoker. Troponin is < 0.006. EKG reveals a heart rate of 89, sinus rhythm with a narrow QRS and a normal axis; it is negative for ST segment/t-wave changes. What is the most appropriate next step in management?

   a. Echocardiogram
   b. D-dimer
   c. CT chest without IV contrast
   d. **CT chest with pulmonary angiography**
   e. Lower extremity duplex ultrasound
   f. V/Q scan

   The diagnostic algorithm and Well’s criteria are reproduced at the end of this document. This patient has dyspnea and chest pain, with associated clinical symptoms of a DVT. Other diagnoses are less likely than a PE, particularly given the normal EKG and cardiac enzymes. She receives 3 points for symptoms suggestive of DVT, and 3 points for PE being more likely than other diagnoses. A Wells score of 6 suggests that PE is likely, and CT with pulmonary angiography (“spiral CT” or “CT w/PE protocol) is indicated. D-dimer would only be indicated if suspicion of PE was low (choice b). Lower extremity duplex ultrasound is an appropriate diagnostic maneuver, but evaluation of the pulmonary vasculature takes precedence to definitively diagnose pulmonary embolism and evaluate the extent of the thrombus (choice e). Once PE is confirmed, echocardiography may be warranted to evaluate for right ventricular strain (choice a). Ventilation/perfusion scan may be appropriate if there is a contraindication to CT with pulmonary angiography, such as renal failure (choice f).

2. A 62-year-old man presents with 90 minutes of severe left lower extremity pain. His past medical history is significant for hypertension, hyperlipidemia, CAD, MI four years ago, and paroxysmal atrial fibrillation. He does not have health insurance and has not received any of his prescribed medications for over six months. He has a 70-pack year smoking history. On exam, the left foot is cold and pale. Left femoral pulse is 2+; left popliteal, dorsalis pedis and posterior tibial pulses cannot be palpated, and a signal cannot be auscultated on doppler exam. Right femoral, popliteal, dorsalis pedis and posterior tibial pulses are 2+. What is the most likely etiology if this patient’s presentation?

   a. **Embolization of thrombus from the left atrium**
   b. Embolization of thrombus from the left ventricle
c. Atheromatous plaque formation in the common femoral artery

d. Aneurysm formation in the common femoral artery

e. Paradoxical embolism from venous thrombosis

This patient’s presentation is consistent with an acute arterial occlusion of the left lower extremity. Specifically, the site of occlusion is likely distal to the iliac arteries, as a femoral pulse can be palpated. Acute limb ischemia can be diagnosed clinically based on the “six P’s”: paresthesias, pain, pallor, pulselessness, polikthermia and paralysis. Embolic phenomena account for 85% of cases, and atrial fibrillation is the most cause of embolism to the lower extremities. Patients who are not on anticoagulation are at an increased risk. Paroxysmal atrial fibrillation carries a similar risk of arterial embolization as persistent atrial fibrillation, and anticoagulation is thus also indicated in these patients. Embolization of thrombus from the left ventricle is a common cause of embolic phenomena in patients with recent MI, but is less likely in this patient with a remote MI (choice b). Local thrombosis due to atheromatous plaque formation and lower extremity aneurysms accounts for a minority of cases of acute limb ischemia (<20%). Paradoxical emboli account for <5% of cases of acute limb ischemia and is much less likely in a patient with a documented history of atrial fibrillation (choices c, d and e).

3. A 65-year-old woman with O2-dependent COPD, insulin-dependent diabetes, hypertension and hyperlipidemia undergoes cardiac catheterization for stable angina. A critical stenosis of the left anterior descending coronary artery is identified, and a drug-eluting stent is placed. What is the most appropriate next step in management?

a. Start Aspirin
b. Start Clopidogrel
c. **Start Aspirin and Clopidogrel**
d. Start Aspirin and Warfarin
e. Start Aspirin and low-molecular weight Heparin

**Dual anti-platelet therapy for at least 12 months (but ideally up to 30 months, if therapy is tolerated) is indicated for both drug-eluting and bare metal stents. The rational for dual anti-platelet therapy is the increased propensity of circulating blood to clot in the presence of the metal stent. After 30 months, the stent becomes endothelialized, and the risk of in-stent thrombosis decreases; at this point aspirin monotherapy can be initiated. Randomized controlled trials have demonstrated the superiority of dual anti-platelet therapy over combined antiplatelet/anticoagulation therapy (i.e. Aspirin and Warfarin).**

4. A 31-year-old woman presents for evaluation of a recent stroke. One week ago, she experienced sudden-onset of right arm weakness, right-sided facial droop and aphasia. Tissue plasminogen activator was rapidly administered in the emergency department within 60 minutes of symptom onset, and she was discharged to a rehabilitation facility with Lovenox and Warfarin. Her past medical history is otherwise unremarkable. On physical exam, biceps and triceps strength is 4/5 in the
right upper extremity; neurologic exam is otherwise unremarkable. What laboratory tests are indicated at this time?

a. Activated Protein C resistance  
b. Serum Protein C and Protein S  
c. Prothrombin gene mutation  
d. Antithrombin deficiency  
e. **Lupus anticoagulant, anti-cardiolipin antibodies and anti-beta-2 microglobulin antibodies**

Of the causes of hypercoagulability listed above, the only condition that predisposes to both arterial and venous thromboembolic events is anti-phospholipid antibody syndrome. Antiphospholipid antibody syndrome should be on the differential diagnosis for venous or arterial thrombus in a young, otherwise healthy patient, if there is a history of lupus, or if there is a history of multiple spontaneous abortions. The diagnosis requires both clinical and laboratory criteria. Assays for anti-phospholipid antibody syndrome should be performed now (soon after the thromboembolic event) and again within 12 weeks if positive to confirm the diagnosis of antiphospholipid antibody syndrome.

**APC resistance, serum protein C and protein S deficiency, prothrombin gene mutation and antithrombin deficiency are important causes of venous thromboembolism.** All would be included in the workup of an unprovoked DVT/PE in a young patient, or multiple thromboembolic events in any patient. Furthermore, measurement of serum protein C, protein S, and antithrombin levels will not be accurate in the setting of warfarin and heparin use.

5. A 32-year-old woman presents with two days of increasingly severe right lower extremity pain and swelling. Her family history is remarkable for multiple DVTs in her mother and DVTs and a PE in her maternal aunt. Lower extremity ultrasound reveals a large thrombus in the right deep femoral vein. She is discharged home on Enoxaparin, but returns to care two days later reporting that the pain is worsening. Repeat right lower extremity ultrasound demonstrates a much larger thrombus, extending from the deep femoral vein up to the bifurcation of the common femoral vein. What is the most likely etiology of her deep vein thrombosis?

a. Factor V Leiden  
b. Protein C deficiency  
c. Protein S deficiency  
d. Prothrombin gene mutation  
e. **Antithrombin deficiency**  
f. Antiphospholipid antibody syndrome

**Enoxaparin exerts its effect on the coagulation cascade by enhancing the binding of antithrombin to clotting factor Xa, preventing its activation to factor X and thus inhibiting progression of the coagulation cascade.** It also has a less significant inhibitory effect on factor IIa. Patients with antithrombin deficiency require a higher dose of heparin for anticoagulation, or might exhibit frank resistance to heparin therapy. Antithrombin III deficiency is a viable explanation for this patient’s
treatment failure on low-molecular weight heparin. She should receive anticoagulation – likely with a direct factor Xa inhibitor – for at least 12 months, though indefinite prophylactic anticoagulation should be considered in this patient with a major thrombophilic defect after an episode of DVT.

6. In which of the following patients would placement of an IVC filter be warranted?

a. A 69-year-old woman develops her first DVT after a prolonged hospitalization for surgical repair of a hip fracture. She is placed on prophylactic Warfarin. One year later, she is found to have an acute intracranial hemorrhage. Warfarin is rapidly reversed and discontinued.

b. A 42-year-old woman with ITP is found to have homozygous Factor V Leiden after her second episode of DVT. Her most platelet count was 130.

c. A 62-year-old man presents with leg swelling and pain. Lower extremity ultrasound reveals a large right-sided iliac DVT. He is placed on a heparin drip. 30 hours later, he develops hematemesis and is found to have a massive upper GI bleed.

d. A 73-year-old patient with past medical history of a GI bleed secondary to peptic disease three years ago presents with shortness of breath and is found to have a pulmonary embolism

IVC filter placement is necessary when there is both an indication and a contraindication to anticoagulation in the same patient. Absolute contraindications to anticoagulation include severe active bleeding, intracranial neoplasm and brain/eye/spinal cord surgery within the past 10 days. Relative contraindications include major surgery within the last 2 days, recent stroke, severe, uncontrolled hypertension, pregnancy, GI/GU bleed within the last 14 days, bleeding diathesis and severe thrombocytopenia (platelet count < 20k).

In choice (c) there is both an absolute indication for anticoagulation (clinically significant DVT) and an absolute contraindication to anticoagulation (active GI bleed). In this scenario, IVC filter is warranted to prevent embolization of DVT to the pulmonary vasculature.

In choice (a), though intracranial hemorrhage is an absolute contraindication to anticoagulation, there is no indication for further anticoagulation in her case. A single episode of DVT in the presence of a reversible risk factor (i.e. immobilization after surgery) only requires anticoagulation for 3 months. A platelet count of 130 does not constitute severe thrombocytopenia and is not a contraindication to anticoagulation (choice b). A remote history of GI bleed does not preclude a patient from receiving anticoagulation, particularly if the risk of bleeding is outweighed by the benefits of anticoagulation (choice d).

7. A 28-year-old G1P0 woman at 20 weeks gestation presents with four hours of dyspnea. Physical exam is notable only for elevated heart rate of 118. A chest X-ray performed in the emergency room is normal. What is the most appropriate next step in management?
Due to the theoretical risk of radiation to the developing fetus, the algorithm for diagnosis of pulmonary embolism is modified to avoid CT with pulmonary angiography if possible. The algorithm is reproduced at the end of this document. Pregnant patients with suspected PE with a normal chest X-ray should be evaluated via V/Q scan. However, it should be noted that pregnancy is not an absolute contraindication to CT scan, and that there should be no delay in diagnosis due to potential adverse effects on the fetus if CT with pulmonary angiography is required for the diagnosis. If there were concerning findings on chest X-ray, or if the V/Q scan was equivocal, CT would be the most appropriate next step (choice d). D-dimer has limited utility in the setting of pregnancy as levels are elevated during normal pregnancy, thus further decreasing the test’s specificity (choice b). Lower extremity duplex ultrasound would be indicated for the immediate evaluation of suspected PE only if there were clinical signs and symptoms of concomitant DVT (choice e). Once PE is confirmed, echocardiography may be warranted to evaluate for right ventricular strain (choice a).

8. A 33-year-old man presents for his first episode of PE. He receives 2 days of intravenous Heparin and PO Warfarin in the hospital, and is discharged home on Warfarin. The next day, he presents with painful purpuric lesions and dark red/black bullae over his upper extremities and chest. What is the most likely diagnosis?

a. Heparin-induced thrombocytopenia  
b. **Underlying protein C deficiency**  
c. Drug rash with eosinophilia and systemic symptoms (DRESS)  
d. Toxic Epidermal Necrolysis (Stevens-Johnson Syndrome)

This patient is presenting with Warfarin-induced skin necrosis. This is a rare complication of therapy with vitamin-K antagonists that is more common in patients with inherited protein C deficiency. During the first five days of Warfarin therapy, there is a greater inhibitory effect on Protein C and factor VII than other vitamin K-dependent factors. This is due to the shorter half-life of Protein C and factor VII. This imbalance creates a transiently hypercoaguable state. When augmented by a congenital deficiency of Protein C, this hypercoagulability can lead to thrombosis of the cutaneous vasculature that supplies the skin, resulting in severe skin necrosis. Though HIT can cause petechial rashes, they are not typically painful. Furthermore, type I HIT occurs within 4 days of starting Heparin therapy and is not typically clinically significant. In contrast, type II HIT occurs between 5-10 days after starting heparin and is associated with clinically significant thrombosis. Drug rashes due to DRESS and SJS are not a documented side effect of anticoagulation (choices c, d).
Wells criteria and modified Wells criteria: clinical assessment for pulmonary embolism

<table>
<thead>
<tr>
<th>Probability</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical symptoms of DVT (leg swelling, pain with palpation)</td>
<td>3.0</td>
</tr>
<tr>
<td>Other diagnosis less likely than pulmonary embolism</td>
<td>3.0</td>
</tr>
<tr>
<td>Heart rate &gt;100</td>
<td>1.5</td>
</tr>
<tr>
<td>Immobilization (≥3 days) or surgery in the previous four weeks</td>
<td>1.5</td>
</tr>
<tr>
<td>Previous DVT/PE</td>
<td>1.5</td>
</tr>
<tr>
<td>Hemoptyis</td>
<td>1.0</td>
</tr>
<tr>
<td>Malignancy</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**Traditional clinical probability assessment (Wells criteria)**

- High: >6.0
- Moderate: 2.0 to 6.0
- Low: ≤2.0

**Simplified clinical probability assessment (Modified Wells criteria)**

- PE likely: >4.0
- PE unlikely: ≤4.0

DVT: deep vein thrombosis; PE: pulmonary embolism.

CT-based diagnostic strategy for hemodynamically stable patients with suspected pulmonary embolism

1. **Determine if "PE unlikely" or "PE likely"**
2. **PE unlikely**
   - D-dimer assay
     - ≤500 ng/mL: PE excluded
     - >500 ng/mL: CT pulmonary angiogram (CtPA)
3. **PE likely**
   - CT pulmonary angiogram (CtPA)
     - Inconclusive/not performed
     - Positive: PE confirmed
     - Negative: PE excluded
     - Additional testing
       - Treatment
       - PE confirmed
       - PE excluded
       - No treatment

No treatment
Diagnostic algorithm for suspected pulmonary embolism in pregnancy

Suspected PE in pregnancy

Leg symptoms

Present

CUS

Negative

CUS, CTPA

Treat

Stop

Absent

CXR

Abnormal

CTPA

Nondiagnostic

V/Q

Normal

Technically inadequate

Positive

Negative

Positive

Negative

Treat

Stop
Faculty guide for case discussion

**HPI:** A 71-year-old man with a history of metastatic prostate cancer and bilateral blindness secondary to glaucoma presents with four hours of dyspnea and chest pain. He describes that he is unable to catch his breath at rest. He also endorses a sharp, 4/10 chest pain that is worse with inspiration and when lying down. He denies sweating, dizziness, palpitations, cough, wheezing, abdominal pain, nausea/vomiting, calf pain and lower extremity swelling. He has never experienced similar symptoms in the past, and denies a personal history of blood clots.

**PMH:** Stage IV metastatic prostate cancer with radiation (last treatment 2008) and hormone therapy with Lupron (last treatment 2012). As of last year, he decided not to pursue further workup and treatment of prostate cancer, though would otherwise like to receive his primary care as usual. PSA at this time was 20.4. PMH is also remarkable for bilateral glaucoma with complete vision loss in both eyes, hypertension, hyperlipidemia, and diet-controlled diabetes. Medications: Atorvastatin 40 mg, doxazosin 8 mg, multivitamin capsule

**Allergies:** none

**Family History:** Mother with dementia, decreased at age 91. Father with hypertension, hyperlipidemia and coronary artery disease, decreased from MI at age 79. No family history of malignancy or venous thromboembolic event.

**Social history:** lives alone on a first-floor apartment. His son lives in the apartment upstairs. His son reports that his father is fairly independent, but since his decline in vision has had some trouble with his IADLs, including taking his home medications. His son works full-time but is able to stop by and help around the house once or twice a week. The patient has never smoked tobacco, has 1-2 beers a month, and denies recreational drug use.

**Physical exam**

Vitals: HR 116       BP 160/95       Temp 99.4       RR 28       SpO2 94% on 2L O2
General: awake, alert, interactive, laying comfortably in no acute distress
Cardiac: regular rate and rhythm with audible S1/S2, no murmurs, rubs or gallops
Pulmonary: unlabored respiration with equal breath sounds bilaterally, no crackles/wheeze
Extremities: warm and well-perfused, capillary refill < 2 seconds. No tenderness, swelling or skin changes of lower extremities bilaterally.

**Labs**

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Na+</td>
<td>141</td>
</tr>
<tr>
<td>K+</td>
<td>4.1</td>
</tr>
<tr>
<td>Cl-</td>
<td>106</td>
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<tr>
<td>HCO3-</td>
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<tr>
<td>BUN</td>
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<td>Creatinine</td>
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<td>WBC</td>
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<tr>
<td>Hemoglobin</td>
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<tr>
<td>Hematocrit</td>
<td>30.1</td>
</tr>
<tr>
<td>Platelets</td>
<td>227</td>
</tr>
</tbody>
</table>
Troponin T 0.124
BMP 280

Imaging
EKG: Sinus tachycardia (rate 118) with normal axis. No ST-segment changes, T-wave inversions or Q-waves.
Chest X-ray, PA/lateral: No acute cardiopulmonary process.
Chest CT with pulmonary angiography: extensive intraluminal filling defect of the left upper and lower lobes consistent with embolus at the bifurcation of the left main pulmonary artery.

ED course: unfractionated heparin drip for left-sided pulmonary embolism.

Discuss as a team and decide on the most appropriate management of this patient’s admission, hospital course and discharge. You must reach a consensus. Be prepared to defend your group’s decision.

1. Disposition: what is the most appropriate setting in which to manage this patient’s pulmonary embolism?
   a. Admission to medical ICU
   b. Admission to medical hospitalist floor
   c. Observation in emergency department, discharge home on anticoagulation if he remains hemodynamically stable.

2. Workup: which of the following diagnostic tests would you chose to further characterize this patient’s condition? You may choose more than one answer.
   a. Echocardiogram
   b. Serum Protein C and Protein S levels
   c. Serum Antithrombin levels
   d. Lupus anticoagulant, anti-cardiolipin and anti-beta-2 microglobulin antibodies
   e. Prothrombin gene mutation
   f. Serum factor VIII levels

3. Hospital management: which of the following treatment modalities is most appropriate for this patient’s PE?
   a. Continue with heparin drip
   b. Continue with heparin drip, begin IV Alteplase
   c. Discontinue heparin drip, begin therapeutic subcutaneous Enoxaparin
   d. Intravascular catheter-directed thrombolysis
   e. Mechanical embolectomy

4. Outpatient anticoagulation: after the patient clinically improves, which of the following is most appropriate regimen to prevent further thromboembolic events?
   a. Discharge to inpatient facility for continuation of heparin drip
   b. Discharge home with Warfarin after 5-day bridge with heparin
   c. Discharge home with Enoxaparin
   d. Discharge home with Rivaroxaban
Case summary: This is a 71-year-old male with complete bilateral blindness and active malignancy presenting with pulmonary embolism of the left main pulmonary artery. He is currently hemodynamically stable, with myocardial strain as evidenced by elevated troponin and BMP, without associated EKG changes. The presumed right heart strain qualifies this as a “submassive pulmonary embolism,” which is defined as an acute PE without hypotension (SBP > 90) but with evidence of right ventricular dysfunction and/or myocardial ischemia. This is distinct from a “massive pulmonary embolism,” which is characterized by hemodynamic instability. There is some preliminary data available to guide management of submassive pulmonary embolism, but practices still differ on a case-by-case basis and between institutions.

Disposition: indications for admission to the medical ICU in the setting of a submassive PE differ by institution, and even differ between Rhode Island hospital and the Miriam hospital. The superimposed NSTEMI may qualify this patient for MICU placement, particularly if echocardiogram demonstrates significant right ventricular dysfunction. However, the fact that the patient is well-appearing, hemodynamically stable and with only a minor oxygen requirement suggests that placement on the medical floor may be feasible. Though this patient should be managed in the hospital, select patients with pulmonary embolism may be appropriate for treatment on an outpatient basis. These patients generally have few medical co-morbidities, normal vital signs, no oxygen requirement, a smaller clot burden (i.e. limited to one lobe the lung) and are able to self-administer subcutaneous enoxaparin as an outpatient (or have a caregiver available to administer the shots for them).

Workup: an echocardiogram is indicated in this case to evaluate for right ventricular dilation and/or systolic dysfunction. The elevated troponin and BMP are suggestive of right-heart strain secondary to submassive PE, however we do not have any data on this patient’s baseline cardiac function. An echo will allow for confirmation of right ventricular dysfunction and for characterization of the severity of right heart strain.

The workup for a hypercoaguable state is not indicated in this case for several reasons. Active malignancy predisposes to thrombus formation, and it is not necessary to rule out additional causes of hypercoagulability. Furthermore, a hypercoaguable workup for a first-time venous thromboembolic event in a typical location (deep veins of the lower extremity or pulmonary arteries) is not indicated in patients > 50 years old. Lastly, with the exception of the prothrombin gene mutation, the results of the above hypercoaguables workup would either be influenced by the presence of an active clot, or by the patient’s current treatment with unfractionated heparin.

Hospital management: thrombolysis is indicated in all instances of massive pulmonary embolism, and is not indicated for hemodynamically stable pulmonary embolism without evidence of right ventricular strain. However, the use of thrombolysis in submassive pulmonary embolism is still somewhat controversial. A meta-analysis of randomized controlled trials comparing systemic (IV) thrombolysis with conventional anticoagulation in 2,115 patients found that thrombolysis resulted in a statistically significant reduction in all-cause mortality. Patients treated with thrombolysis had a 2.0% incidence of hemorrhagic
stroke and 6.3% incidence of major extracranial bleed. The NNT for all-cause mortality benefit was 59; the number needed to harm for major bleeding was 18.

There is less data for intravascular catheter-directed thrombolysis in this setting. Theoretically, catheter-directed thrombolysis has the potential to achieve the same benefit in all-cause mortality as systemic thrombolysis, but with a lower risk of bleeding. It should be noted that this technology is not available in all institutions.

Conventional treatment with an unfractionated heparin drip is an acceptable and widely-practiced approach to the management of submassive pulmonary embolism. It is reasonable to switch the patient to therapeutically-dosed Enoxaparin once he exhibits clinical improvement. However, an argument can be made for unfractionated heparin in the acute setting of a submassive PE, as it is easier to titrate and is more readily reversible should the patient decompensate and require more invasive intervention. Surgical embolectomy is typically reserved for hemodynamically unstable patients in whom systemic/catheter-directed thrombolysis is contraindicated, or patients with imminent cardiovascular collapse.

**Outpatient anticoagulation:** in general, a patient’s functional status must be considered in conjunction with evidence-based recommendations when selecting an anticoagulation regimen. In this patient, indefinite anticoagulation will likely be required, as his hypercoaguable state (secondary to active malignancy) is presumably irreversible. Multiple randomized controlled trials have established that Enoxaparin is superior to Warfarin for anticoagulation in the setting of an active malignancy. However, this patient’s vision impairment and recent functional decline may preclude him from self-administration of Enoxaparin shots. The efficacy of direct factor Xa inhibitors has not yet been established in the setting of malignancy. However there are data to suggest these novel anticoagulants are superior to heparin and warfarin for secondary prevention of venous thromboembolism in the general population. Unfractionated heparin is rarely used outside of the inpatient hospital setting, and would not be suitable for this patient requiring indefinite prophylactic anticoagulation.

**Outcome:** this is based on a real case; the patient was managed on a heparin drip on the step-down unit and discharged home with Rivaroxaban, and other than some mild pulmonary hypertension has not experienced any complications or recurrences of his pulmonary embolism.
Appendix E: IM Clerkship Colorectal and Lung Cancer TBL

Faculty Guide: Multiple Choice Questions

1. Which of the following statements concerning the epidemiology of cancer in the United States is true?

   a. **Lung cancer is the leading cause of cancer deaths in both men and women**
   
   b. Colorectal carcinoma is the second most common cancer of both men and women
   
   c. The incidence of lung cancer has decreased over the past 15 years, however mortality from lung cancer has remained relatively stable.
   
   d. Breast cancer is the leading cause of cancer deaths in women
   
   e. Pancreatic cancer is the third leading cause of cancer deaths in both men and women.

   Prostate cancer is the most prevalent cancer in men, while breast cancer is the most prevalent cancer in women. Lung is the second most prevalent cancer, and colorectal is the third most prevalent cancer in both genders. Lung cancer is the leading cause of mortality from cancer in both men and women. As smoking rates decrease and treatment is refined, both the incidence and morality from lung cancer have decreased over the last 15 years. Though pancreatic cancer carries a generally poor prognosis with respect to other cancers, it only accounts for 7% of cancer deaths in the United States due to its relatively low incidence.

2. All of the following are risk factors for colorectal cancer, **EXCEPT**…

   a. Tobacco use
   
   b. Inflammatory bowel disease
   
   c. Excessive alcohol consumption
   
   d. Diets high in processed meat and low in fiber
   
   e. **Chronic NSAID use**
   
   f. Obesity and insulin resistance

   *Aspirin and NSAIDs has in fact been shown to be effective for both primary prevention of CRC and secondary prevention for patients with a history of adenomatous polyps and colorectal cancer. Regular use is associated with a 20-40% reduction in the risk of colonic adenomas and CRC in individuals at average risk. UC w/pan-colitis confers a 5-15 fold increase in risk, and though data is more limited, it appears that Crohn’s disease confers a similar risk (choice b). Tobacco use, alcohol use, diets high in processed meats/low in fiber, obesity and DM/insulin resistance have all demonstrated an association with increased incidence of colorectal cancer in observational studies (choices a, c, d and f).*

3. A 31-year-old man presents with fatigue, shortness of breath and black, “sticky” stools. His hemoglobin is 9.2. ROS is otherwise negative. Colonoscopy reveals
adenocarcinoma of the proximal ascending colon. His family history is remarkable for endometrial cancer in his mother, ovarian cancer in his maternal aunt and ovarian cancer in his maternal grandmother. What is the most likely underlying diagnosis?

a. Peutz Jegher’s syndrome
b. **Hereditary nonpolyposis colorectal cancer (HNPCC)**
c. Familial adenomatous polyposis
d. Gardner syndrome
e. Li-Fraumeni syndrome

*Hereditary nonpolyposis colorectal cancer (HNPCC), or Lynch syndrome, is an autosomal dominant form of familial colon cancer that accounts for 5-10% of cases of CRC. Patients tend to present much younger than spontaneous CRC cases (mean age is 48 years). Patients with HNPCC are also predisposed to a number of different extracolonic malignancies, including endometrial, ovarian, stomach, small bowel, hepatobiliary, brain, and kidney cancers. There is also a weak association with breast and prostate cancer. Peutz Jegher’s Syndrome presents with hyperpigmented mucocutaneous skin lesions and multiple hamartomas of the GI tract, as well as a predisposition to breast, stomach, small bowel and pancreatic cancer. Familial adenomatous polyposis is associated with multiple benign tumors (sebaceous/epidermoid cysts, lipomas, osteomas, fibromas) as well as thyroid cancer, hepatoblastoma and CNS tumors. Gardner syndrome is generally considered to be a subset of FAP, but with a greater proportion of patients with frank extracolonic lesions. Li-Fraumeni syndrome more frequently presents with bone, soft tissue and breast cancers, though patients are also predisposed to colorectal cancer.*

4. A previously healthy 52-year-old man presents with four weeks of constipation, fatigue and weight loss. He has also noticed that his stools have been narrower in caliber. The only history of malignancy in his family is a paternal aunt with breast cancer at age 65. His physical exam is unremarkable. Fecal occult blood test is positive. Colonoscopy reveals a 3-cm mass in the proximal sigmoid colon. Pathology reveals adenocarcinoma. What is the most likely pathogenesis of his malignancy?

a. Inherited mutation in a DNA mismatch repair gene resulting in microsatellite instability
b. Spontaneous transformation of a sessile serrated polyp resulting from BRAF inactivation
c. Inherited APC gene mutation, followed by P53 mutation
d. **Spontaneous APC gene mutation, followed by P53 mutation**
e. BRCA 1 gene mutation

*Most spontaneous CRCs arise through the “adenoma-carcinoma” sequence. In these cases, a spontaneous early mutation – usually in the APC gene – results in the formation of an adenomatous polyp. There is then an accumulation of multiple somatic mutations, the most common of which is a late inactivating*
mutation in the p53 tumor suppressor gene. Choice (b) describes the same pathway, but with an inherited APC gene mutation seen in Familial adenomatous polyposis (FAP), which accounts for about 1~% of CRCs. Choice (a) describes HNPCC or Lynch syndrome (responsible for 5-10% of CRC cases). It is unlikely that this patient has a hereditary form of colorectal cancer, as his family history is only remarkable for a non-first-degree relative with a breast cancer at a relatively older age. There is no association between BRCA1 and CRC, though BRCA2 mutations are thought to be associated with a higher incidence of CRC.

5. According to the USPSTF, which of the following patients is being appropriately screened for lung cancer?

   a. A 70-year-old man who is a current smoker (1 PPD x 35 years), screened for lung cancer with a one-time low-dose helical CT.
   b. A 56-year-old woman, with a 45-pack-year smoking history who quit six years ago, is screened for lung cancer with annual chest CT.
   c. A 61-year-old man who is a current smoker (½ PPD x 45 years) is screened for lung cancer with annual chest x-rays.
   d. A 73-year-old woman with a 40 pack-year smoking history who quit 20 years ago is screened for lung cancer with annual chest x-rays.

The USPSTF recommends annual screening for lung cancer with low-dose computed tomography in adults age 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years. Lung cancer screening is a “B” grade recommendation; the USPSTF estimates that this screening strategy will lead to a 14-16% reduction in overall lung cancer mortality. The National Lung Screening Trial was an RCT with over 50,000 patients that demonstrated a 20% decrease in lung cancer mortality in heavy smokers who were screened annually for three years.

6. A 65-year-old woman with an 80 pack-year smoking history is diagnosed with stage III primary squamous cell carcinoma of the lung. Which of the following signs/symptoms is most likely to be associated with this diagnosis?

   a. New-onset proximal muscle wakens of the extremities
   b. Confusion and seizures
   c. Central obesity, abdominal striae, hyperglycemia and hypogonadism
   d. Abdominal pain, constipation, polyuria and polydipsia
   e. Acute-onset back pain with point tenderness and decreased strength of R lower extremity

Squamous cell carcinoma (SCC) is most classically associated with hypercalcemia due to secretion of parathyroid hormone-related peptide (PTHrP). SCC is implicated in over 50% of lung cancers with hypercalcemia at presentation. Lambert-Eaton myasthenic syndrome (choice a) and Cushing’s syndrome (choice c) are most commonly associated with small cell
lung cancer. Small cell lung cancer is also responsible for a number of neurologic phenomena, including cerebral edema secondary to SIADH and immune-mediated neurologic paraneoplastic syndromes (choice c). Though bony metastases (choice e) and neurologic phenomena secondary to CNS metastases (choice b) are possible with squamous cell carcinoma, stage III lung cancer by definition does not involve distant metastases.

7. A 68-year-old woman presents with five weeks of fatigue, night sweats, dyspnea and cough productive of rust-colored sputum. Physical exam is notable for palpable right-sided supraclavicular lymphadenopathy. Chest x-ray reveals an opacity in the right upper lung, and CT identifies a 2.5 cm spiculated mass in the peripheral R upper lobe with mediastinal lymphadenopathy. What is the most appropriate next step in management?

   a. Brain MRI for evaluation of distant metastases
   b. Core biopsy of supraclavicular lymph node
   c. CT-guided transthoracic needle biopsy
   d. Bronchoscopy
   e. No tissue sampling is necessary to establish a diagnosis of lung cancer

Histologic confirmation is necessary for diagnosis of lung cancer (choice e). This is generally true of all malignancies, with the exception of certain cases of hepatocellular carcinoma. Ideal locations for biopsy are both technically accessible and also further staging of the cancer. This patient’s presentation is suspicious for lung cancer metastatic to lymph nodes. The presence of lymph node metastasis would establish this as a late-stage disease, and thus would be an ideal approach to tissue sampling. Of the known sites of lymphadenopathy, the supraclavicular lymph node is the most technically accessible. This is preferable to a biopsy of mediastinal lymph nodes, which would require more invasive bronchoscopic techniques, such as endobronchial ultrasound-guided transbronchial needle aspiration (choice e). Of note, a peripheral lung cancer is unlikely to be accessible by bronchoscopy (choice d), and would be more feasibly be evaluated via image-guided transthoracic needle biopsy (choice c). However, this technique is more invasive than supraclavicular node biopsy, and does not assist in disease staging. If the lymph nodes were found to be benign, a metastatic workup would be indicated, including abdominal CT. Brain MRI (choice a) is only indicated for workup of metastatic disease if there are clinical signs/symptoms suggesting neurologic involvement.

8. A 67-year old man presents to care after falling down the stairs of his front porch on a snowy day. A chest x-ray performed in the emergency room is negative for rib fractures but reveals an incidental mass in the left lower lobe of the lung. CT scan reveals a 6mm nodule with central calcification, without evidence of mediastinal lymphadenopathy or pleural effusion. No prior thoracic imaging is available. What is the most appropriate next step in management?

   a. Repeat X-ray in 3 months
a. Serial CT scans
b. PET-CT
c. Bronchoscopic-guided biopsy
d. Surgical biopsy
e. Reassurance

A solitary pulmonary nodule is defined as an asymptomatic, discrete radiographic density completely surrounded by aerated lung that is < 3 cm in size. If prior imaging is available that demonstrates a stable SPN without growth over 2 years, reassurance is appropriate (choice e); alternatively, if growth is noted compared to prior imaging, surgical, image-guided or bronchoscopic biopsy is indicated (choice c, d).

To guide management after incidental discovery on CXR when prior imaging is unavailable, the patient’s risk of malignancy should be determined. If high (>65%), surgical, image-guided or bronchoscopic biopsy is indicated (choice c, d). If low (<5%) or if nodule is <8 mm, serial scans are indicated to monitor for growth. CT is the preferred modality for serial imaging, as serial CTs without appreciable growth have a superior positive predictive value for benign disease (choice a). The interval between duration of CT scans is dependent on radiographic features of the nodule. If nodule is >8 mm and risk of malignancy is intermediate (5-65%), PET-CT can be used to further assess metabolic activity of the mass.

There are validated models of SPN malignancy risk, including the Mayo Clinic model (which is available as an online calculator).
Faculty Guide: Case Discussions on Colorectal Cancer Screening

1. Which of the following statements concerning the epidemiology of cancer in the United States is true?

   a. **Lung cancer is the leading cause of cancer deaths in both men and women**
   b. Colorectal carcinoma is the second most common cancer of both men and women
   c. The incidence of lung cancer has decreased over the past 15 years, however mortality from lung cancer has remained relatively stable.
   d. Breast cancer is the leading cause of cancer deaths in women
   e. Pancreatic cancer is the third leading cause of cancer deaths in both men and women.

   *Prostate cancer is the most prevalent cancer in men, while breast cancer is the most prevalent cancer in women. Lung is the second most prevalent cancer, and colorectal is the third most prevalent cancer in both genders. Lung cancer is the leading cause of mortality from cancer in both men and women. As smoking rates decrease and treatment is refined, both the incidence and mortality from lung cancer have decreased over the last 15 years. Though pancreatic cancer carries a generally poor prognosis with respect to other cancers, it only accounts for 7% of cancer deaths in the United States due to its relatively low incidence.*

2. All of the following are risk factors for colorectal cancer, **EXCEPT**…

   a. Tobacco use
   b. Inflammatory bowel disease
   c. Excessive alcohol consumption
   d. Diets high in processed meat and low in fiber
   e. **Chronic NSAID use**
   f. Obesity and insulin resistance

   *Aspirin and NSAIDs has in fact been shown to be effective for both primary prevention of CRC and secondary prevention for patients with a history of adenomatous polyps and colorectal cancer. Regular use is associated with a 20-40% reduction in the risk of colonic adenomas and CRC in individuals at average risk. UC w/pan-colitis confers a 5-15 fold increase in risk, and though data is more limited, it appears that Crohn’s disease confers a similar risk (choice b). Tobacco use, alcohol use, diets high in processed meats/low in fiber, obesity and DM/insulin resistance have all demonstrated an association with increased incidence of colorectal cancer in observational studies (choices a, c, d and f).*

3. A 31-year-old man presents with fatigue, shortness of breath and black, “sticky” stools. His hemoglobin is 9.2. ROS is otherwise negative. Colonoscopy reveals adenocarcinoma of the proximal ascending colon. His family history is remarkable for endometrial cancer in his mother, ovarian cancer in his maternal aunt and ovarian
cancer in his maternal grandmother. What is the most likely underlying diagnosis?

a. Peutz Jegher’s syndrome  
**b. Hereditary nonpolyposis colorectal cancer (HNPCC)**  
c. Familial adenomatous polyposis  
d. Gardner syndrome  
e. Li-Fraumeni syndrome

**Hereditary nonpolyposis colorectal cancer (HNPCC), or Lynch syndrome, is an autosomal dominant form of familial colon cancer that accounts for 5-10% of cases of CRC. Patients tend to present much younger than spontaneous CRC cases (mean age is 48 years). Patients with HNPCC are also predisposed to a number of different extracolonic malignancies, including endometrial, ovarian, stomach, small bowel, hepatobiliary, brain, and kidney cancers. There is also a weak association with breast and prostate cancer. Peutz Jegher’s Syndrome presents with hyperpigmented mucocutaneous skin lesions and multiple hamartomas of the GI tract, as well as a predisposition to breast, stomach, small bowel and pancreatic cancer. Familial adenomatous polyposis is associated with multiple benign tumors (sebaceous/epidermoid cysts, lipomas, osteomas, fibromas) as well as thyroid cancer, hepatoblastoma and CNS tumors. Gardner syndrome is generally considered to be a subset of FAP, but with a greater proportion of patients with frank extracolonic lesions. Li-Fraumeni syndrome more frequently presents with bone, soft tissue and breast cancers, though patients are also predisposed to colorectal cancer.**

4. A previously healthy 52-year-old man presents with four weeks of constipation, fatigue and weight loss. He has also noticed that his stools have been narrower in caliber. The only history of malignancy in his family is a paternal aunt with breast cancer at age 65. His physical exam is unremarkable. Fecal occult blood test is positive. Colonoscopy reveals a 3-cm mass in the proximal sigmoid colon. Pathology reveals adenocarcinoma. What is the most likely pathogenesis of his malignancy?

f. Inherited mutation in a DNA mismatch repair gene resulting in microsatellite instability  
g. Spontaneous transformation of a sessile serrated polyp resulting from BRAF inactivation  
**h. Inherited APC gene mutation, followed by P53 mutation**  
i. Spontaneous APC gene mutation, followed by P53 mutation  
j. BRCA 1 gene mutation

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A solitary pulmonary nodule is defined as an asymptomatic, discrete radiographic density completely surrounded by aerated lung that is < 3 cm in size. If prior imaging is available that demonstrates a stable SPN without growth over 2 years, reassurance is appropriate (choice e); alternatively, if growth is noted compared to prior imaging, surgical, image-guided or bronchoscopic biopsy is indicated (choice c, d).

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Appendix F: Internal Medicine OSCE Case

DOOR SHEET GIVEN TO STUDENTS

Bernard Kramer, a 72-year-old male with past medical history of hypertension, hyperlipidemia, and COPD, presents to the Emergency Department with shortness of breath. Your resident is busy admitting another patient and sends you down to admit Mr. Kramer to the medical floor.

Watch the video of Mr. Kramer’s history.

Vital signs:

BP: 130/70
Pulse: 120
Temperature: 101.5°F (38.6°C)
Respiration: 28 per minute
O2 Sat: 90% on RA

PE:
General: Well-appearing, mild respiratory distress, using accessory muscles to breathe
Cardiovascular: Regular rhythm, tachycardic no murmurs or rubs, no JVD
Pulmonary: RLL with with crackles and dullness to percussion; otherwise lungs clear to auscultation and resonant to percussion.
Abdominal: Soft, NTND abdomen with normal bowel sounds; no pulsatile masses; no organomegaly
Extremities: No calf tenderness or swelling; no peripheral edema

Medications:
Aspirin 81mg by mouth once daily
Metoprolol succinate 25mg PO once daily
Lisinopril 10mg by mouth once daily
Atorvastatin 40mg by mouth once daily
Fluticasone-Salmeterol (Advair) 250/50 mcg 1 puff BID
Albuterol inhaler, 2 puffs q4-6 hours PRN for shortness of breath

Labs:
CBC: WBC - 15.0 (normal 4.5-11.0) with 10% bands (normal 0-51%), HGB - 14.1 (normal 13-16), PLT - 250 (normal 150-450);
Basic Metabolic Profile (Na, K, Cl, CO2, BUN, Cr, glucose): within normal limits
Med student: Hello Mr. Kramer, I’m a third year medical student working with Dr. Gentilesco. I’ll be helping admit you to the hospital today. Can I ask you a few questions?

Patient: Why of course.

M: What brought you into the emergency department?

P: I’ve been having trouble breathing for the last few days. And coughing more than usual. I called my doctor and she said that I should come in.

M: When did the shortness of breath start?

P: Well, I’ve been feeling under the weather for the last few days, and the shortness of breath was notable when I woke up yesterday. I thought I would sleep it off, but it kept me up last night and it was still bad today.

M: Does anything make the shortness of breath worse? Like when you’re lying flat or walking around?

P: It’s a little worse when I walk around or go up the stairs, but it’s always there. It’s especially bad when I cough {COUGH}. I don’t think it’s worse when I lie down flat.

M: Does anything make it better?

P: Well I tried my albuterol inhaler but it didn’t seem to help very much.

M: Tell me about the cough.

P: I have a dry cough all the time. But now I’m really hacking, and yesterday I started spitting out yellowish green stuff. This morning I also started having some pain on the right side of my chest that gets worse when I cough and breathe in.

M: Does that pain radiate anywhere?
P: No, it’s pretty sharp and just on the right side.

M: Have you been wheezing at all?

P: Maybe a little but that happens to me sometimes.

M: Tell me about the other symptoms that you’re having

P: I’ve been feeling a little congested and tired recently. Yesterday I started feeling warm and clammy. I think I might have a fever, but I didn’t check my temperature at home.

M: Has anything like this happened before?

P: Something similar happened a few years ago, but it wasn’t this bad. That’s when they prescribed me the inhaler, which usually helps when I need it, but now it’s not cutting it.

M: The pain in your chest, has anything like that happened before?

P: My doctor told me I had a small heart attack 10 years ago. But that pain was totally different, and I have been watching my diet and trying to exercise more since then.

M: I’m sorry that happened to you, but that’s great that you’ve been trying to diet and exercise some more. Just a few more questions about symptoms over the past two weeks. Have you had any night sweats or chills?

P: I’ve been feeling hot and cold.

M: Any recent weight loss?

P: No, that’s been stable.

M: Any headaches, vision changes, or ringing in your ears?

P: No.

M: Any nausea, vomiting, abdominal pain, diarrhea, changes in bowel habits, or urinary symptoms?

P: Nope.

M: Any leg swelling or tenderness?
P: No.

M: Traveled anywhere recently?

P: No.

M: Anyone around you been sick recently?

P: My grandson has been sick recently with a cough and runny nose, but he always seems sick.

M: Okay, just a few questions about your past medical history now. Do you have any medical problems?

P: That mini heart attack that I mentioned. My doctor put me on Aspirin, a beta blocker and a cholesterol medication for that. I also take lisinopril for my high blood pressure and Advair for my COPD.

M: Any other medications, including over the counter meds?

P: I take albuterol when I get wheezing, but that’s it.

M: Are you allergic to any medications?

P: Yes, penicillin.

M: What happens when you take penicillin?

P: It gives me a rash.

M: Have you ever had a surgery?

P: Nope.

M: Does anyone in your family have a history of heart or lung problems?

P: My mother had a heart attack in her 80s but other than that, not really. My father passed away from colon cancer in his 60s.

M: A few questions about your lifestyle now- do you smoke?

P: Yes, I’ve been smoking for 40 years, about a pack a day.
M: Do you drink alcohol?

P: No, I don’t like it.

M: Do you use any recreational drugs or medications not prescribed to you?

P: No, definitely not.

M: Last question: this is something we ask all patients admitted to the hospital. In the unlikely event that your heart were to stop beating or you were to stop breathing, would you want us to perform CPR or put in a breathing tube? Do you have an advanced directive or health proxy?

P: Yes, I’ve talked about that with my doctor and I’d like to have everything done. My wife is my health proxy.

M: Ok Mr. Kramer, thanks for answering my questions. Do you mind if I do a quick exam now?

P: No, of course, go ahead.
Assignment #1: Admission H&P
Write a full admission H&P, including an assessment with a differential diagnosis (your top 3 potential diagnoses) and your brief clinical reasoning for each. Please develop a diagnostic and therapeutic plan, which incorporates at least 2 additional tests/images and at least 2 therapies/treatments based on your most likely diagnosis (note - you can give “classes” of treatments, and do not have to name specific pharmacologics).

Assignment #1 CHECKLIST

Need 23/32 (70%) to pass station. If misses more than one bolded item, will require remediation.)

1. Name/ age
2. Chief complaint
3. CC onset
4. What makes the CC improve/worsen
5. Location of pain
6. Previous episodes
7. Associated symptoms (fever, cough, sweats)
8. Review of systems
9. Complete past medical history
10. Complete past surgical history
11. Complete medication list
12. Complete allergy list and what happens when patient is exposed to allergen
13. Family history
14. Use of tobacco
15. Use of alcohol
16. Use of recreational drugs
17. Vitals
18. General Appearance
19. Cardiac exam
20. Lung exam
21. Abdominal Exam
22. Labs (given)
23. Assessment
24. Differential diagnosis (with three diagnoses)
   a. Pneumonia, COPD exacerbation, PE, CHF, MI
25. Clinical Reasoning given
26. Problem based organization for plan (as opposed to systems based organization)
27. Reasonable diagnostic plan (at least 2)
28. Reasonable therapeutic plan (at least 2)
29. Prophylaxis
30. Disposition
31. Code status: Full code
32. Reports accurate information

Assignment #2: CXR

Interpret Mr. Kramer’s chest x-ray using a stepwise approach. Document your formal read of the new chest X-ray using the stepwise system you learned, and include your overall impression. There is a normal film from 5 years ago provided as a comparison (you do not need to write out a formal interpretation of the prior film).

PRIOR:
TODAY:
Assignment #2: CHECKLIST

The student documents (Need 7/10 to pass station):

1. Rotation (No rotation)
2. Inspiration (Good inspiration; in this case 10 ribs)
3. Penetration (this film is penetrated appropriately)
4. Airway (can clearly see the trachea; midline)
5. Bones (no fractures)
6. Cardiac silhouette (looks normal, usually half the size of the thoracic cavity but is A/P view)
7. Diaphragm (L CPA sharp, R CPA obscured)
8. Everything else (such as subcutaneous soft tissues; looks normal, no lines or tubes)
9. Fields (Consolidation, RLL with spine sign, compared with prior)
10. Impression (likely PNA)
Assignment #3: Admission orders

Based on your most likely diagnosis at this time, write admission orders for Mr. Kramer using the format you have learned. The admitting physician is Dr. Gentilesco.

Assignment #3: CHECKLIST
The student documents something for each of the following (Need 11/15 (70%) to pass station):

1. Admit to: Gentilesco
2. Diagnosis: RLL pneumonia
3. Condition: Stable
4. Vitals: q6 hours
5. Allergies: Penicillin (rash)
6. Nursing: Incentive Spirometry, O2 by NC
7. Diet: Cardiac diet
8. IVF at a reasonable rate: 100 cc/hr NS
9. Studies (examples): CXR, EKG, PFTs, V/Q Scan, CTA
10. Meds: Includes name of medication, dose of medication, frequency, route of delivery.
    a. Aspirin 81mg by mouth once daily
    b. Metoprolol succinate 25mg PO once daily
    c. Lisinopril 10mg by mouth once daily
    d. Atorvastatin 40mg by mouth once daily
    e. Fluticasone-Salmeterol (Advair) 250/50 mcg 1 puff BID
    f. Albuterol inhaler, 2 puffs q4-6 hours PRN for shortness of breath
11. Activity: Out of Bed As Tolerated (OOBAT), OOBTC
12. Laboratory studies: options include: Sputum Gram Stain & Culture, procalcitonin, ABG, Blood cultures, RVP, rapid flu, D-dimer, BNP, Urine Legionella
13. PPx: DVT prophylaxis (SQ heparin), SCDs
15. Dispo: HLOC
Assignment #4: EKG

1. Mr. Kramer has an EKG (shown on next page) due to his cardiac history. Using the space below, interpret Mr. Kramer’s EKG using a stepwise approach.

For the axis, briefly (no more than one sentence) explain why it is normal, a left axis deviation or a right axis deviation.

Be sure to give your overall impression of this EKG (i.e. normal or abnormal). If abnormal, provide the diagnosis.


Assignment #4: CHECKLIST

The student documents (Need 5/8 to pass station):

1. Sinus Rhythm
2. Rate: 115 beats per minute (accept answers between 100 and 150)
3. Rhythm: Regular
4. Axis: Normal (with rationale given as to why i.e. positive in AVF and Lead I)
5. PR interval: Normal (less than 0.2)
6. QRS complex: Normal (less than 0.12)
7. No ischemic changes (no ST wave changes or T wave inversions)
8. dx: Sinus Tachycardia