Medicine 1 Clerkship

Department of Internal Medicine
MS 310
2020 - 2021

Clerkship Director: Sonia Ananthakrishnan, MD
Clerkship Coordinator: Yulianna Santos
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## Medical Education Program Objectives

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<thead>
<tr>
<th>INSTITUTIONAL LEARNING OBJECTIVE</th>
<th>MEDICAL EDUCATION PROGRAM OBJECTIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B - Behaves in a caring, compassionate and sensitive manner toward patients and colleagues of all cultures and backgrounds.</strong> <em>(Interpersonal and Professionalism)</em></td>
<td>B.1 - Apply principles of social-behavioral sciences to provision of patient care; including assessment of the impact of psychosocial and cultural influences on health, disease, care-seeking, care compliance, and barriers to and attitudes toward care. (2.5)</td>
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<tr>
<td></td>
<td>B.2 - Demonstrate insight and understanding about emotions that allow one to develop and manage interpersonal interactions. (4.7)</td>
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<tr>
<td></td>
<td>B.3 - Demonstrate compassion, integrity, and respect for others. (5.1)</td>
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<td></td>
<td>B.4 - Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation. (5.5)</td>
</tr>
<tr>
<td><strong>U - Uses the science of normal and abnormal states of health to prevent disease, to recognize and diagnose illness and to provide and appropriate level of care.</strong> <em>(Medical Knowledge and Patient Care)</em></td>
<td>U.1 - Perform all medical, diagnostic, and surgical procedures considered essential for the area of practice. (1.1)</td>
</tr>
<tr>
<td></td>
<td>U.2 - Gather essential and accurate information about patients and their conditions through history-taking, physical examination, and the use of laboratory data, imaging and other tests. (1.2p)</td>
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<tr>
<td></td>
<td>U.3 - Interpret laboratory data, imaging studies, and other tests required for the area of practice. (1.4)</td>
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<td>U.4 - Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence and clinical judgement. (1.5)</td>
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<td>U.5 - Develop and carry out patient management plans. (1.6)</td>
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<td></td>
<td>U.6 - Provide health care services to patients, families, and communities aimed at preventing health problems or maintaining health. (1.9)</td>
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<td>U.7 - Demonstrate an investigatory and analytic approach to clinical situations. (2.1)</td>
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<td>U.8 - Apply established and emerging bio-physical scientific principles fundamental to health care for patients and populations. (2.2)</td>
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<tr>
<td></td>
<td>U.9 - Apply established and emerging principles of clinical sciences to health care for patients and populations. (2.3)</td>
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<td></td>
<td>U.10 Recognizes that ambiguity is a part of clinical health care and respond by utilizing appropriate resources in dealing with uncertainty. (8.8)</td>
</tr>
<tr>
<td><strong>C - Communicates with colleagues and patients to ensure effective interdisciplinary medical care</strong> <em>(Interpersonal and Communication Skills; Patient Care)</em></td>
<td>C.1 - Gather essential and accurate information about patients and their conditions through history-taking, physical examination, and the use of laboratory data, imaging and other tests. (1.2h)</td>
</tr>
<tr>
<td></td>
<td>C.2 - Counsel and educate patients and their families to empower them to participate in their care and enable shared decision making. (1.7)</td>
</tr>
<tr>
<td></td>
<td>C.3 - Participate in the education of patients, families, students, trainees, peers and other health professionals. (3.8)</td>
</tr>
<tr>
<td></td>
<td>C.4 - Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds. (4.1)</td>
</tr>
<tr>
<td></td>
<td>C.5 - Communicate effectively with colleagues within one's profession or specialty, other health professionals, and health related agencies (4.2, see also 7.3)</td>
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<tr>
<td></td>
<td>C.6 - Maintain comprehensive, timely, and legible medical records. (4.5)</td>
</tr>
<tr>
<td></td>
<td>C.7 - Demonstrate sensitivity, honesty, and compassion in difficult conversations, including those about death, end of life, adverse events, bad news, disclosure of errors, and other sensitive topics. (4.6)</td>
</tr>
<tr>
<td></td>
<td>C.8 - Communicate with other health professionals in a responsive and responsible manner that supports the maintenance of health and the treatment of disease in individual patients and populations. (7.3)</td>
</tr>
<tr>
<td>INSTITUTIONAL LEARNING OBJECTIVE</td>
<td>MEDICAL EDUCATION PROGRAM OBJECTIVE</td>
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</tbody>
</table>
| **A - Acts in accordance with highest ethical standards of medical practice (Professionalism)** | A.1 - Demonstrate responsiveness to patient needs that supersedes self-interest. (5.2)  
A.2 - Demonstrate respect for patient privacy and autonomy. (5.3)  
A.3 - Demonstrate accountability to patients, society, and the profession. (5.4)  
A.4 - Demonstrate a commitment to ethical principles pertaining to provision or withholding of care, confidentiality, informed consent, and business practices, including compliance with relevant laws, policies, and regulations. (5.6)  
A.5 - Work with other health professionals to establish and maintain a climate of mutual respect, dignity, diversity, ethical integrity, and trust. (7.1)  
A.6 - Demonstrate trustworthiness that makes colleagues feel secure when one is responsible for the care of patients. (8.5) |
| **R - Reviews and critically appraises biomedical literature and evidence for the purpose of ongoing improvement of the practice of medicine. (Practice-Based Learning and Improvement and Medical Knowledge)** | R.1 - Apply principles of epidemiological sciences to the identification of health problems, risk factors, treatment strategies, resources, and disease prevention/health promotion efforts for patients and populations. (2.4)  
R.2 - Locate, appraise, and assimilate evidence from scientific studies related to patients' health problems. (3.6)  
R.3 - Continually identify, analyze, and implement new knowledge, guidelines, standards, technologies, products, or services that have been demonstrated to improve outcomes. (3.10) |
| **E - Exhibits commitment and aptitude for life-long learning and continuing improvement (Practice-based Learning)** | E.1 - Identify strengths, deficiencies, and limits in one's knowledge and expertise. (3.1)  
E.2 - Set learning and improvement goals. (3.2)  
E.3 - Identify and perform learning activities that address one's gaps in knowledge, skills, and/or attitudes. (3.3)  
E.4 - Incorporate feedback into daily practice. (3.5)  
E.5 - Obtain and utilize information about individual patients, populations of patients, or communities from which patients are drawn to improve care. (3.9)  
E.6 - Develop the ability to use self-awareness of knowledge, skills, and emotional limitations to engage in appropriate help-seeking behaviors. (8.1)  
E.7 - Manage conflict between personal and professional responsibilities. (8.3) |
| **S - Supports optimal patient care through identifying and using resources of the health care system. (Systems-Based Practice and Patient Care)** | S.1 - Provide appropriate referral of patients including ensuring continuity of care throughout transitions between providers or settings, and following up on patient progress and outcomes. (1.8)  
S.2 - Systematically analyze practice using quality-improvement methods and implement changes with the goal of practice improvement. (3.4)  
S.3 - Use information technology to optimize learning. (3.7)  
S.4 - Work effectively with others as a member or leader of a health care team or other professional group. (4.3, see also 7.4)  
S.5 - Work effectively in various health care delivery settings and systems relevant to one's clinical specialty. (6.1)  
S.6 - Coordinate patient care within the health care system relevant to one's clinical specialty. (6.2)  
S.7 - Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care. (6.3)  
S.8 - Advocate for quality patient care and optimal patient care systems. (6.4)  
S.9 - Use the knowledge of one’s own role and the roles of other health professionals to appropriately assess and address the health care needs of the patients and populations served. (7.2)  
S.10 - Participate in different team roles to establish, develop, and continuously enhance interprofessional teams to provide patient- and population-centered care that is safe, timely, efficient, effective, and equitable. (7.4) |
Third Year Learning Objectives
During the third-year clerkships, students will

- Demonstrate use of patient-centered interviewing and communication techniques (U.2)
- Take a clinical history that demonstrates both organization and clinical reasoning (U.7)
- Perform accurate and relevant physical exam techniques (U.2)
- Demonstrate an ability to synthesize clinical information and generate a differential diagnosis, assessment and plan (U.3, R2, U.5)
- Demonstrate a compassionate and patient-sensitive approach to history-taking and physical examinations (B.3)
- Communicate well organized, accurate and synthesized oral presentations (C.1)
- Counsel and educate patients and families (C.3)
- Demonstrate timely, comprehensive and organized documentation (C.6)
- Demonstrate a fund of knowledge in the clinical discipline and apply this to patient care (U.4)
- Demonstrate an awareness of one’s own learning needs and work to address these gaps (E.1, E.3)
- Show respect and empathy for others (B.3)
- Demonstrate accountability to the responsibilities of the student’s role and expectations of a clinical clerk (S.4)
- Communicate effectively with the interprofessional team (S.9)

Medicine 1 Clerkship Learning Objectives
(Linked to Medical Education Program Objectives in parentheses)

By the end of the clerkship, each student will be able to

I. Demonstrate professional and humanistic behavior in clinical and clerkship related responsibilities:
   - Be present and punctual
   - Proactively clarify your role and responsibilities, and reliably respond to patient care needs
   - Appropriately identify your position as “Student” or “Student Doctor”
   - Maintain confidentiality
   - Be forthright and accept responsibility for errors
   - Ask for help appropriately
   - Build a therapeutic relationship through a respectful, empathic approach that gains the trust of the patient
     - Dress and behave in a way that promotes patient and team comfort, trust and confidence in you
   - Demonstrate that the interests of the patient guide your behavior by:
     - Working to meet the patient’s needs – at times this means accepting personal inconvenience
     - Advocating for patient’s needs – e.g. getting a test, consult or follow-up appointment (B.3, A.1, A.2)

II. Develop productive, collaborative working relationships with other members of the health care team and system, effectively contribute to the provision of quality patient care, and work toward the improvement of the systems of care. (S.4)

III. Use proper technique to perform an accurate, appropriately detailed and organized history and physical examination in an efficient and sensitive manner, with a special emphasis on the intermediate and
advanced physical diagnosis skills involved in volume assessment, the cardiovascular exam and the chest/pulmonary exam. (C.1)

IV. Communicate clinical information accurately and demonstrate your understanding of the patient’s problems, through concise, convincing, well-organized patient presentations, admission write-ups, progress notes, and handoffs that are appropriately focused for the audience, purpose and time available for the communication. (C.4, C.5, C.8)

V. **Identify and prioritize your patients’ problems, formulate an appropriate differential diagnosis and outline an approach to diagnosis and management that is supported by clinical data and sound reasoning.** (U.4, U.5)

VI. **Educate patients** about their conditions and partner with them to develop and implement a treatment plan. (C.2, C.4)

VII. Perform the designated procedures with appropriate technical proficiency while demonstrating attention to the patient’s needs and concerns, and describing a clear understanding of benefits/risks, indications/contraindications. (U.1)

VIII. Demonstrate a core foundation of knowledge (scientific, ethical, socio-cultural) guided by the course objectives that is necessary both to provide high quality patient care and to understand advances in medicine. (U.9)

IX. **Identify and address your learning needs** (by asking questions and critically incorporating information from appropriate resources into the decision-making process) and effectively share this information with colleagues. (R.3, E.1, E.3, E.4)

X. Solicit and probe for useful feedback, and respond with improved performance. (E.2, E.4)
Contact Information

Clerkship Director
Sonia Ananthakrishnan
Telephone: (617) 358-3523
Email: Sonia.Ananthakrishnan@bmc.org
Pager: 4435
Office: Evans 122
Office Hours: Students may email to set up an appointment

Associate Clerkship Director
Robert Lowe, M.D.
Telephone: (617) 638-6116
Email: Robert.Lowe@bmc.org
Pager: 0028
Office: 85 E. Concord St. 7th Floor
Office Hours: Students may email to set up an appointment.

Associate Clerkship Director
Nicolette Oleng, M.D.
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Email: Nicolette.Oleng2@bmc.org
Pager: 0613
Office: Crosstown 1049
Office Hours: Students may email to set up an appointment.

Associate Clerkship Director
Lauren Stern, M.D.
Telephone: (617) 638-7235
Email: Lauren.Stern@bmc.org
Pager: 4678
Office: BCD Building, G11
Office Hours: Students may email to set up an appointment.

Clerkship Coordinator
Yulianna Santos
Telephone: (617) 358-3523
Email: yusantos@bu.edu
Office: Evans 122
Office Hours: 8:00 AM - 4:30
Clerkship Description

Focus of clerkship
The Medicine 1 Clerkship is a 6-week experience designed to develop your ability to function as a caring, increasingly independent clinician while supervised on a multi-professional team. During the clerkship, you will learn clinical medicine while working side-by-side with teams of residents and/or faculty providing care to a cohort of inpatients. As your knowledge and skills grow, you will earn increasing patient care responsibility. This direct patient care experience is complemented by a unique enrichment in which you also work in small groups with a clerkship director and hone essential clinical skills (including intermediate-level communications skills, physical diagnosis, and clinical reasoning). Your education is supplemented with conferences that focus on core topics. The clerkship is divided into two mini-blocks of 2-4 weeks each, and most students spend time at 1-2 of our clinical sites.

The goal of the clerkship is to develop someone who we would want to care for our family members; a professional, highly caring clinician who is increasingly independent and knowledgeable, and who is a strong team member.

The Medicine 1 Clerkship aims to:
- Introduce you to the world of internal medicine
- Develop your skills as a clinician
- Enable you to become a contributing, collaborating team member
- Support your skills as a self-directed learner

The Self-Directed Learner
You are entering the world of medicine where growth in the body of knowledge is accelerating at an unprecedented pace, and to thrive in this world, you must be engaged and take ownership of your learning. The Medicine 1 Clerkship builds upon the learner-centered approach and challenges you to be a self-directed, lifelong learner. The dynamic nature of learning while caring for patients requires that you become adept at identifying your learning needs and acting upon them. You will need to continually ask relevant questions, find credible, evidence-based responses, and integrate this information into patient care.

As a student, you will learn to be a flexible learner who employs a variety of appropriate resources ranging from textbooks and the medical literature to consultants, and one who solicits and responds effectively to feedback. The clerkship provides you with many opportunities to read in-depth, to become the “local expert” on your patients, to share your learning with your team, and to improve continuously.

Contributing, Collaborating Team Member
Medicine is team-based, requiring you to work effectively with multiple health care providers from different disciplines and within a complex system. The Clerkship challenges you to “find your niche” from which to consistently contribute to both patient care and team learning, and to develop the habits and skill sets that will enable you to function effectively within and improve the systems in which our patients receive their care.

Becoming a Clinician
The primary focus of the clerkship is to increase your ability to function as a caring, increasingly independent clinician while supervised on a multidisciplinary team. A clinician in this setting is someone who addresses all
Pre-requisite knowledge and skills
Students must have completed their second year curriculum, attended the 3rd year orientation, and have taken the Step-I exam prior to taking this clerkship.

Site Information
Site maps indicating the availability of student resources at our affiliate hospitals can be found under the Clinical Sites section of the Medical Education Office’s Student Resources page at http://www.bumc.bu.edu/busm/education/medical-education/student-resources/#siteinfo.

Students will work with designated inpatient teams at each site to provide care for and learn from hospitalized patients. Many locations require a car and some provide housing. Some sites provide a complementary set of student conferences while students at some sites will have access to Zoom conference software to access noon student didactics at Boston Medical Center (see below).

Each site has an MD Site Director and Program Coordinator who will partner with you to ensure a great learning experience and will be available to address immediate educational and logistic questions or concerns. The Site Director or designee at each site will function in a role similar to your Clerkship Director at Boston Medical Center, and provide you with feedback on your performance.

Berkshire Medical Center
725 North St.
Pittsfield, MA 01201
Site Director: Steven Lamontagne, slamontagn@bhs1.org, (413) 447-2839
Site Administrator: Stephanie Wade, swade@bhs1.org, (413) 395-7879

Located in beautiful Berkshire County, Berkshire Medical Center is a 298-bed community teaching hospital. Berkshire Medical Center provides primary and specialized health care services to the people of Berkshire County and surrounding communities. BUSM students work alongside interns, residents, and attendings, and share experiences with students from the University of Massachusetts Medical School. Housing is provided, some conferences take place on-site, with opportunities to Zoom into BMC noon student didactics, and a car is required.

Beth Israel Deaconess Needham
148 Chestnut St.
Needham, MA 02492
Site Director: Jonathan Goldman jdgoldma@bidmc.harvard.edu, (781) 453-6100
Site Administrator: Ivonne Wood jwood@bidmc.harvard.edu, (781) 453 – 3777
Barbara Breslin breslin@bidneedham.org

Beth Israel Deaconess Needham is a 58-bed (including 7 ICU beds) community hospital. The inpatient service is staffed by attending hospitalists, who are internal medicine trained physicians specializing in the care of inpatients. This means that essentially 100% of your physician interactions will be with attending physicians, which will afford you a higher level of independence and autonomy. Another bonus at BI Needham is the
open-ICU concept, where students will have the ability to observe and sometimes participate in the care of patients requiring ICU level care. There are opportunities to Zoom into BMC noon student didactics, and a car is helpful.

**Beth Israel Deaconess Plymouth**

275 Sandwich St.
Plymouth, MA 02360

Site Director: Thomas Ku, tku@bidplymouth.org  
Site Administrator: Jenna Burton jaburon@bidplymouth.org, (508) 830-2679,  
MaryJo Donovan mjdvovan@bidplymouth.org

Beth Israel Deaconess Plymouth is a 150-bed community hospital that provides care to patients and communities on the South Shore and on Cape Cod. Students will work directly with hospitalists in the provision of care (with an opportunity for greater independence and autonomy), and get first-hand experience in an accountable care organization. There are opportunities to Zoom into BMC noon student didactics, and housing is provided.

**Boston Medical Center**

1 Boston Medical Center Place
Boston, MA 02118

Site Director: Sonia Ananthakrishnan, sonia.ananthakrishnan@bmc.org, (617) 358-2523  
Site Administrator: Yulianna Santos, yusantos@bu.edu, (617) 358-3523

Boston Medical Center is a private, not-for-profit, 493-bed, academic medical center located in Boston's historic South End. An acute care, full-service hospital, BMC provides healthcare to a diverse patient population, including vulnerable, inner-city residents. The primary teaching affiliate for **Boston University School of Medicine**, BMC is the largest safety net hospital in New England. Students work on teams composed of interns, residents, attendings, and fellows. Students rotate on the Medicine wards and the Medical Intensive Care Unit as part of their Medicine 1 Clerkship. Didactics occur on noon on many weekdays.

**Kaiser Permanente**

250 Hospital Parkway
San Jose, CA 95119

Site Director: Marina Dergun, Marina.X.Dergun@kp.org, (408) 972-4576  
Associate Site Director: Subbu Lakshmi, Subbu.Lakshmi@kp.org  
Site Administrator: Elizabeth Chua, Elizabeth.Chua@kp.org, (408) 972-4495

The Kaiser Permanente Regional Campus, Silicon Valley hosts 3rd year core clerkships up to one year in duration. It is an integrated program where student rotations occur at both Kaiser San Jose and Santa Clara Medical Centers; the Medicine 1 Clerkship takes place at the San Jose campus. This clerkship program offers Boston University medical students an opportunity to train within the nonprofit integrated, managed care system that is often hailed as the health care model for the future. You work primarily with hospitalists (there are only rarely psychiatry or family medicine residents). Housing is provided, conferences take place on-site, and a car is required.

**MetroWest Medical Center**

115 Lincoln St.
Framingham, MA 01702
MetroWest is a 300-bed community hospital in Framingham, MA. Students join teams composed of one attending/hospitalist, one resident, and one intern. You attend didactics at Metrowest and there are sometimes opportunities to Zoom into BMC noon student didactics. A car is required.

**Roger Williams Medical Center**
825 Chalkstone Ave.
Providence, RI 02908
Site Director: John Miskovsky, md617jpm@yahoo.com, (401) 456-2388
Site Administrator: Sue Saccoccia, ssaccocc@chartercare.org, Cathy Cardillo ccardillo@chartercare.org

The medical service at Roger Williams Medical Center in Providence, RI boasts a blend of primary and tertiary care in an academic community hospital and is the site for the state's only bone marrow transplantation program. Students work alongside interns, residents and hospitalists to provide patient care. You attend didactics at Roger Williams and there are opportunities to Zoom into BMC noon student didactics. Housing is provided.

**West Roxbury VA (Boston VA Healthcare System)**
1400 VFW Parkway
West Roxbury, MA 02132
Site Director: Richard Serrao, Richard.Serrao@va.gov, (857) 203-5056
Site Administrator: Laura Muckerheide, Laura.Muckerheide@va.gov, (857) 203-6942

The VA serves as a major teaching affiliate of BUSM, and trainees at the VA are exposed to a challenging and rewarding patient population characterized by a heavy burden of chronic illness, particularly cardiovascular and pulmonary diseases, and medical problems resulting from specific circumstances such as traumatic brain injury or spinal cord injury. The VA system also affords you the unique opportunity to experience a national-scope, single-payer, integrated health system. You work on teams with interns, residents and attendings from both Boston Medical Center and Brigham and Women’s Hospital, and attend didactics at the VA. A car is often necessary.

**Clerkship Schedules**

**Block Schedule**
Block schedule dates for all clerkships can be located on the Medical Education website: [http://www.bumc.bu.edu/bumc/education/medical-education/academic-calendars/](http://www.bumc.bu.edu/bumc/education/medical-education/academic-calendars/)

You will either follow the X1 or X2 version of the 6 week schedule as seen below:
<table>
<thead>
<tr>
<th>Week</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Weekend</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>ON</td>
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<tr>
<td><strong>Week 2</strong></td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>OFF</td>
</tr>
<tr>
<td><strong>Week 3</strong></td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>ON</td>
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<tr>
<td><strong>Week 4</strong></td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>OFF</td>
</tr>
<tr>
<td><strong>Week 5</strong></td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 2- BMC</td>
<td>Medicine Team 2- BMC</td>
<td>Medicine Team 2- BMC</td>
<td>Medicine Team 2- BMC</td>
<td>OFF</td>
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<tr>
<td><strong>Week 6</strong></td>
<td>Medicine Team 2- BMC</td>
<td>Medicine Team 2- BMC</td>
<td>Medicine Team 2- BMC</td>
<td>Medicine Team 2- BMC</td>
<td>Reading Day</td>
<td>OFF</td>
</tr>
<tr>
<td><strong>Week 7</strong></td>
<td>Surgery</td>
<td>Surgery</td>
<td>Surgery</td>
<td>Surgery</td>
<td>Surgery</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>Week 8</strong></td>
<td>Surgery</td>
<td>Surgery</td>
<td>Surgery</td>
<td>Surgery</td>
<td>MED SHELF</td>
<td>TBD</td>
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### X2 (4 Weeks Medicine → 2 weeks Surgery → 2 weeks Medicine → 4 weeks Surgery)

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Weekend</th>
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<tbody>
<tr>
<td>1</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>ON</td>
</tr>
<tr>
<td>Week 2</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>OFF</td>
</tr>
<tr>
<td>Week 3</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>ON</td>
</tr>
<tr>
<td>Week 4</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>Medicine Team 1: Site or BMC</td>
<td>OFF</td>
</tr>
<tr>
<td>Week 5</td>
<td>Surgery Orientation</td>
<td>Surgery</td>
<td>Surgery</td>
<td>Surgery</td>
<td>Surgery</td>
<td>TBD</td>
</tr>
<tr>
<td>Week 6</td>
<td>Surgery</td>
<td>Surgery</td>
<td>Surgery</td>
<td>Surgery</td>
<td>Surgery</td>
<td>TBD</td>
</tr>
<tr>
<td>Week 7</td>
<td>Medicine Team 2- BMC</td>
<td>Medicine Team 2- BMC</td>
<td>Medicine Team 2- BMC</td>
<td>Medicine Team 2- BMC</td>
<td>Medicine Team 2- BMC</td>
<td>OFF</td>
</tr>
<tr>
<td>Week 8</td>
<td>Medicine Team 2- BMC</td>
<td>Medicine Team 2- BMC</td>
<td>Medicine Team 2- BMC</td>
<td>Reading Day</td>
<td>MED SHELF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

**Didactic Schedule**

Didactics take place Mondays and Tuesdays over Zoom at Boston Medical Center at 12 PM. Med 1 Student Report occurs weekly on Thursdays at 12 pm at BMC. All conference are available on ZOOM, thus students at sites other than BMC are not required to return to Boston for this education. Zoom conferencing is available and encouraged to access didactics in real-time. Videos of many BMC based didactics will be made available to students at all sites on Blackboard in order to complement didactic sessions at all other sites.
### Daily Schedule at Boston Medical Center

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-rounds 6:45-7:45</td>
<td>Pre-rounds 6:45-7:45</td>
<td>Pre-rounds 6:45-7:45</td>
<td>Pre-rounds 6:45-7:45</td>
<td>Pre-rounds 6:45-7:45</td>
</tr>
<tr>
<td>Work Rounds 7:45-11:00am</td>
<td>Work Rounds 7:45-11:00am</td>
<td>Work Rounds 7:45-11:00am</td>
<td>Work Rounds 7:45-11:00am</td>
<td>Work Rounds 7:45-11:00am</td>
</tr>
<tr>
<td>Didactics 12-1pm</td>
<td>Didactics 12-1pm</td>
<td>CREx/M&amp;M Conference 12-1pm</td>
<td>Student Report 12-1pm</td>
<td>Department of Medicine Grand Rounds 12-1pm</td>
</tr>
<tr>
<td>Patient Care and/or Small Group Learning with your CD 1-5:30pm (2 x/week)</td>
<td>Patient Care and/or Small Group Learning with your CD 1-5:30pm (2 x/week)</td>
<td>Patient Care and/or Small Group Learning with your CD 2-5:30pm (2 x/week)</td>
<td>Patient Care and/or Small Group Learning with your CD 1-5:30pm (2 x/week)</td>
<td>Patient Care and/or Small Group Learning with your CD 1-5:30pm (2 x/week)</td>
</tr>
</tbody>
</table>

- You will round with your team on either Saturday or Sunday (see Blackboard for general BMC team “rules” for which weekend day you may work, subject to change); expect to have 1 weekend day off on those weeks.
- The actual times vary slightly by team, but this gives you a general idea

### Call Schedule

On the Medicine 1 Clerkship, there is no over-night on-call. Students are in-hospital 5-6 days. You finish at 5 pm on the Friday of the 4th week of your clinical Medicine and at 5pm on the day prior to your Reading Day. You should expect that you may stay in-hospital until 10:30 pm once /week and leave by 5:30 on the other evenings.

### Holidays

Intercession: Thu, Dec 24, 2020 – Sun, Jan 3, 2021
Spring Break: Sat, Mar 6, 2021 – Sun, Mar 14, 2021

Other holidays that occur during specific blocks will be communicated by the clerkship director.

Students observe the same weekdays on and off as the Internal Medicine residents in order to maintain the integrity of the Medicine ward team, and for students to gain experience functioning on an inter-professional team. Thus students will work many Monday Holidays.

Students will work 1 weekend day during the 1st and 3rd weekend of their 4 week rotation block during the clerkship and will be excused by 5pm on the 4th Friday. Students will also be excused by 5 pm on the day prior to their reading during their X1 or X2 Clinical Medicine block. Exceptions to this weekend work schedule are the small group of students who begin their academic year with 2 weeks of Medicine in A1 or A2.

Holidays by Clerkship can be viewed on the Medical Education website at: [http://www.bumc.bu.edu/bsm/education/medical-education/academic-calendars/#clerkhols](http://www.bumc.bu.edu/bsm/education/medical-education/academic-calendars/#clerkhols)
Assessment and Grading

Clerkship Grading Policy

<table>
<thead>
<tr>
<th>HOW MUCH EACH PART OF YOUR GRADE IS WORTH:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual Clerkship</td>
<td>P/F</td>
</tr>
<tr>
<td>Clinical Grade Percentage</td>
<td>60%</td>
</tr>
<tr>
<td>Shelf/Exam Percentage</td>
<td>25%</td>
</tr>
<tr>
<td>“Other” Components Percentage: Additional Assessments</td>
<td></td>
</tr>
<tr>
<td>OCRA: 1 Oral OCRA, 2 written OCRAs, 4% each</td>
<td>12%</td>
</tr>
<tr>
<td>Directly Observed FOCUSED H and P</td>
<td>3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HOW YOUR FINAL OVERALL WORD GRADE IS CALCULATED:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Honors</td>
<td>&gt;=90 Total Points (this includes CSEF, shelf, additional assessments,) AND average of &gt;= 3 in all CSEF domains</td>
</tr>
<tr>
<td>High Pass</td>
<td>&gt;=80 to &lt;90 Total Points, AND average of &gt;= 2.5 in all CSEF domains</td>
</tr>
<tr>
<td>Pass</td>
<td>&gt;=70 to &lt;80 Total Points Or Numeric Score or between 1.5-2.49 in any domain on the final CSEF</td>
</tr>
<tr>
<td>Fail</td>
<td>&lt;70 Total Points Or Numeric Score or &lt;1.5 on any domain on the final CSEF or &lt; 2 averaged on the final CSEF (Clinical Fail)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HOW YOUR CLINICAL GRADE IS CALCULATED WITH THE CSEF:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Honors</td>
<td>&gt;4.5</td>
</tr>
<tr>
<td>Clinical High Pass</td>
<td>3.5-4.49</td>
</tr>
<tr>
<td>Clinical Pass</td>
<td>2-3.49</td>
</tr>
<tr>
<td>Clinical Fail</td>
<td>&lt;2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SHELF/EXAM GRADING</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam minimum passing (percentile/2 digit score)</td>
<td>2-digit score of 58 that corresponds to 5th percentile national on subject exam</td>
</tr>
</tbody>
</table>

What is “Other” and what percentage is it worth?

| Observed Clinical Reasoning Assessment (OCRA) | 12% |
| Directly observed FOCUSED H and P            | 3% |
| Professionalism                              | See below |

Other components that need to be completed in order to pass the clerkship

| Patient log                                      |  |
| 2 FOCuS Forms – 1 Interview Technique, 1 Physical Exam |  |
| Medicine Structured Observations of Clinical Skills Cards (SOCS) |  |
| Duty Hour logs                                   |  |

Standard Clerkship Clinical Grade Procedures/Policies

- Preceptors will provide clinical evaluations that contain the “raw data” on the student’s clinical performance. Preceptors DO NOT determine the final “word” grade. You are encouraged to regularly ask for specific behaviorally-based feedback on your clinical skills from your preceptors. However, do not ask them what “word grade” you will get, as that is a multifactorial process of which the clinical evaluation is one component.

- The CSEF form will be used to numerically calculate your clinical grade: 1 to 5 points (depending on which box is checked) for each domain which will be averaged to give you a final score out of 5. Categories: Needs intensive remediation (1); Needs directed coaching (2); Approaching competency (3); Competent (4) or Achieving behaviors beyond the 3rd year competency criteria (5) to get a final number in each domain. This can be rounded to the
nearest number using standard rounding for the CSEF domain and this is the box that should be checked (e.g. if an average of 2.4 then the student should have needs directed coaching (2) checked off). Each CSEF will be weighted based on how long the student worked with each evaluator.

- **CSEF Clinical Grade Calculations** should be made using the 0.1 decimal point in each domain (though the rounded number will be checked off on the final CSEF) to give a final number. Any average of <1.5 in any domain = an automatic fail for the clerkship. Any average of < 2.5 in any domain = an automatic pass for the clerkship and a meeting with the MEO for clinical coaching. >2.5 in all domains, standard rounding will be used:
  - <2 = Clinical fail which will = a fail for the clerkship
  - 2-3.49 = Clinical pass
  - 3.5-4.49= Clinical high pass
  - >4.5=Clinical honors

The clinical grade will be reported in the CSEF final narrative.

- **Primary preceptors at sites with multiple preceptors** will collect evaluation data from the other clinicians with whom the student works. The primary preceptor will collate this data, and submit the final clinical evaluation.

**Clerkship Specific Clinical Grade Procedures/Policies**

**Guiding Principles** - We strive to provide a grading system that is:
- Fairly applied- a system that we follow for all students.
- Transparent - students can clearly see the process by which the grade is derived.
- Discriminating- the HONORS grade represents a performance of true distinction.
- Based on your absolute performance. There is no ‘curve’ or fixed percentage about who can/cannot get HONORS.
- Performance –based- what the student does and is reported- not based on potential

The final CSEF score will be converted to a score out of 100 to generate the clinical grade (which would count towards 60% of the overall final grade). Clinical performance grade will be represented on the final grade form, regardless of final grade. Clinical performance grade may also be represented in the final narrative, formative or professionalism grade comments.

The CSEF grade is complemented by a narrative description on the eValue form and by other observations conveyed by instructors (e.g. verbal or email comments). These may be used by the Clerkship Faculty to help determine the student’s final CSEF score, if and when appropriate.

The Observed Clinical Reasoning Assessment (OCRA), including oral and written components, is graded by 1 core clerkship faculty (12% of final grade).

The Directly Observed Focused History and Physical Exam Assessment is graded by 1 core clerkship faculty (3% of final grade).

If the student scores > 5th percentile nationally on the initial attempt at the **NBME Shelf Exam**, he/she is assigned points for the NBME Shelf Exam component of the final grade in proportion to the 2-digit score. The higher the 2-digit score, the more points the student receives. The shelf points are used in the final grade calculation.

**Integrating the Clinical Performance Score into the Final Grade**
- To achieve an overall final grade of HONORS, the student must achieve ≥90 Total Points.
- To achieve an overall final grade of HIGH PASS, the student must achieve 80 to < 90 Total Points.
- To achieve an overall final grade of PASS, the student must achieve 70 to < 80 Total Points.
- The clinical numeric grade will be worth 60% of the final grade of the clerkship and will be calculated out of a 5-point scale from the CSEF
- The shelf is worth 25% of the final grade of the clerkship. The 2-digit score will be used to calculate the numeric score out of 100

Deriving the Final Composite Grade from the Input. An example:

A. 60% --- Clinical evaluation --- CSEF score converted to score of 80 out of 100 points. x 0.6
B. 25% --- NBME shelf exam --- 84 points x 0.25
C. 15% --- Other including averaged score of the Observed Clinical Reasoning Assessments (OCRA) and Directly Observed Focused H and P Assessment = 87 x 0.15

\[(80 \times 0.60) + (84 \times 0.25) + (87)\times 0.15 = 48 + 21 + 13.1 = 82.1\]

This student’s final (composite) grade for the clerkship is HIGH PASS.

Professionalism

Evaluation of a medical student’s performance while on a clinical clerkship includes all expectations outlined in the syllabus and clerkship orientation as well as the student’s professional conduct, ethical behavior, academic integrity, and interpersonal relationships with medical colleagues, department administrators, patients, and patients’ families. If a clerkship director determines that a student does not meet the professionalism expectations of the clerkship (professionalism comportment section below), after providing the student with feedback, a student will fail the clerkship. If there are multiple professionalism concerns throughout a clerkship, the student will not be eligible to receive honors on the clerkship. Any professionalism lapses resulting in either a clerkship fail or ineligibility to receive honors will require narrative comments by the clerkship director in the professionalism comment section of the final evaluation and the student will be given feedback in advance of the final grade form submission.

Clerkship-Specific Failure and Remediation Policies/Procedures

Fail Clinical - If the student fails the clinical portion of the clerkship (Numeric Score or < 1.5 on any domain on the final CSEF or < 2 averaged on the final CSEF = Clinical Fail), or does not meet the standards for professionalism either clinically or within the core clerkship curriculum, the student must retake the clerkship in its entirety.

Fail Observed Clinical Reasoning Assessment - If the student fails only the OCRA component, the student must repeat the OCRA. If the student fails a 2nd time, the student may have to retake the clerkship in its entirety.

Fail Directly Observed Focused History and Physical Assessment - If the student fails only the Directly Observed Focused H and P assessment component, the student must repeat this assessment. If the student fails a 2nd time, the student may have to retake the clerkship in its entirety.

Fail Shelf only - For students who meet expectations for all grading elements except that they score < 5th percentile on the subject exam, they may retake the subject exam one time. If the student fails to meet ≥ 5th percentile on the retake shelf exam, the student must retake the entire clerkship, including the shelf exam.

BUSM Grade Review Policy

BUSM’s Grade Reconsideration Policy is located in section 2.2 of the Policies and Procedures for Evaluation, Grading and Promotion of Boston University School of Medicine MD Students: [http://www.bumc.bu.edu/busm/faculty/evaluation-grading-and-promotion-of-students/](http://www.bumc.bu.edu/busm/faculty/evaluation-grading-and-promotion-of-students/)

Formative Assessments

The purpose of formative assessment is to improve student learning by providing feedback on how well they are learning skills and content during the clerkship. Formative assessments are not included in the calculations of students’ final grades. Each clerkship has required FOCUS (Feedback based on Observation of Clinical UME Student) forms which must be completed by the mid/end of the clerkship. These forms will provide formative assessment through direct observation of CSEF behaviors. Each student is required to complete one interviewing technique and one physical exam FOCuS form on each clerkship.
In addition, the Medicine clerkship has specific direct observation cards (SOCS) to be filed for review at mid/end of clerkship. Again, these forms are more opportunity for the student to obtain feedback from direct observation of skills that are specific to Internal Medicine.

**FOCUS Cards and Internal Medicine Structured Observations of Clinical Skills (SOCS):** These exercises are designed to assist the student in obtaining ongoing, real-time feedback after being directly observed performing a variety of skills (interviewing a patient, performing physical exam skills including 1) Focused PE, 2) JVP assessment, 3) Cardiac exam, 4) Pulmonary exam). These exercises will be student-initiated and completed on the wards by residents and attendings.

Two of these cards (FOCUS and SOCS) should be completed (and uploaded if FOCUS form) by the time of the mid-clerkship feedback sessions. The Internal Medicine SOCS cards will be turned in at the end of the rotation as part of the passport.

Both the formative assessment exercises of FOCUS cards and Medicine SOCS cards are not included in the calculations of students’ final grades.

**Process for FOCUS and SOCS Forms**
(Typically a 5-10 minute exercise)
1. Student initiates by speaking with observer (Resident, Attending or Fellow)
2. MD or student can identify patient
3. Hand observer the passport PRIOR to the patient encounter
4. Observation of encounter
5. Feedback on encounter
6. Observer and student sign card
7. Student photographs FOCUS card and uploads to eValue (SOCS forms are turned in as part of the passport at the end of the clerkship).

**Clinical Problem Solving Cases** (see individual case learning objectives)

**Student Report** These group discussions about real patients provide exposure to clinical problems commonly encountered in medicine. These will provide a good opportunity to practice clinical reasoning and the OCRA style of thinking for commonly encountered medical problems seen on the inpatient wards.

**A mini-course on interpreting the ECG** – Apply a systematic approach to interpret the EKG. See passport for a sample of a systematic guide to employ when interpreting ECGs.

**Small group sessions with your Clerkship Director.** These sessions focus on refining core skills and building advanced skills in:
- The write-up and oral patient presentation
- The interview and physical exam- with a particular focus on the CV exam, Chest/Pulmonary Exam, and Volume Assessment
- Clinical reasoning
- Integrating the medical literature into patient care
- Promoting reflection and professional identity development
- Mid- and End-clerkship feedback
Formative Assessment and Feedback Policy
Boston University School of Medicine (BUSM) ensures that each medical student is provided with formative assessment early enough during each required course or clerkship to allow sufficient time for remediation. Formative assessment occurs at least at the midpoint of each required course or clerkship four or more weeks in length.


Mid-Clerkship Review
You and your clerkship director, site director or primary preceptor will complete the BUSM Mid-clerkship Evaluation form at the mid clerkship point.

The purpose of this evaluation is to give the student a chance to understand both their strengths as well as opportunities to improve. The feedback received at the mid-clerkship review is intended to allow the student to improve their clinical skills in real time.

Best practices regarding feedback include:

- Start with getting the student’s perspective on how they performed or are performing. (Students- please anticipate being asked “How did it go?”)
- Feedback should be specific and actionable. (Students: Ask “what could the I do differently next time?”)
- Feedback should be based on direct observation (i.e. what has been seen).
- Feedback should be timely (in close proximity to when behavior was observed).

Feedback should be respectful and encourage future growth.

Final Summative Assessments
The final summative assessment will be based on the clerkship grading policy and include a clinical performance grade with the CSEF (Clinical Student Evaluation Form), a NBME performance grade, and other assessments depending on the clerkship.

NBME Subject Examination
Students will take the Medicine NBME Subject Examination on the last Friday of the clerkship (unless otherwise communicated by the Medical Education Office. Students are given a reading day prior to the exam. Students do not report to their clerkship site on the reading day or the day of the exam. Students will be given 2 hours and 45 minutes to complete this exam. Shelf exam dates can be found in the [3rd year google calendar](http://www.bumc.bu.edu/medlib/services/computing/nbme/)

Shelf Exam Laptop Certification Process
Students must certify their laptops one week before the NBME Subject Exam and again on the day before the exam. Instructions are provided on the Alumni Medical Library website at: [http://www.bumc.bu.edu/medlib/services/computing/nbme/](http://www.bumc.bu.edu/medlib/services/computing/nbme/)

Exam Policies
Testing Center Policies
http://www.bumc.bu.edu/busm/education/medical-education/policies/l-11-testing-center/

Make-Up Exams
Students needing to make up the exam or remediate only the exam portion of the clerkship must contact the Clerkship Coordinator to arrange for a make-up/remediation date. Students may not take a make-up or remediation exam during any block they currently have a scheduled rotation. Make-ups and remediation exams will typically be scheduled at the end of the third year blocks between mid-May and early June.

Observed Clinical Reasoning Assessments
Objectives:
- For the clinical problem(s) addressed, obtain a focused history and physical, generate a patient-specific differential diagnosis, and develop initial steps to evaluate your differential
- Explain your reasoning and describe the most important and relevant pathophysiology for the condition(s)
- Identify the most useful diagnostic tests, and interpret their results
- Recommend initial treatment

These link to the following clerkship learning objectives:

IV. Communicate clinical information accurately and demonstrate your understanding of the patient’s problems, through concise, convincing, well-organized patient presentations, admission write-ups, progress notes, and handoffs that are appropriately focused for the audience, purpose and time available for the communication. (C.4, C.5, C.8)

V. Identify and prioritize your patients’ problems, formulate an appropriate differential diagnosis and outline an approach to diagnosis and management that is supported by clinical data and sound reasoning. (U.4, U.5)

VI. Demonstrate a core foundation of knowledge (scientific, ethical, socio-cultural) guided by the course objectives that is necessary both to provide high quality patient care and to understand advances in medicine. (U.9)

Process for the Observed Clinical Reasoning Assessment (OCRA)
- There is one oral OCRA (oral exam with 1 clerkship faculty) and 2 written OCRAs (administered via Blackboard on the 5th Friday of the Medicine 1 rotation.
- A list of students and their assigned date of the oral OCRA will be disseminated in advance. Assigned dates will be in weeks 4-6 of the clerkship.
- This formal evaluation will be done by core clerkship faculty.
- This evaluation will take place during the 4-6th week of the clerkship, unless extenuating circumstances do not allow.
- The student will complete the observed oral assessment (1) and written assessments (2) on the date and time provided by the clerkship.
- The oral and written OCRAs will each be scored from 0-100 (based on a grading rubric). Each OCRA component (1 oral and 2 written exams) is weighted at 4% of the final grade. Thus the OCRA’s 3 components (1 oral and 2 written) will in total be 12% of the final grade.
Students will be asked to sign an honor code confirming that they will not share any information about the oral and written assessments with any fellow students. This includes the problems, diagnoses, details of the cases, or the questions they are asked.

Failure to meet the expectations outlined above will result in a reduction in the student’s score, and possible failure of the OCRA component.

**Fail Observed Clinical Reasoning Assessment**—If the student fails only the OCRA, the student must repeat the OCRA. If the student fails a 2nd time, the student may have to retake the clerkship in its entirety.

To best prepare for the OCRA: The OCRAs are based on the Medicine 1 BIG 10. For each of the BIG 10 diagnoses in the Medicine clerkship (see Required Patient Encounters), the student should be able to define/describe:

- Illness script (IS)- one way that experts store information (as chunks) about medical conditions in long term memory that enables them to store and readily retrieve that information
  - An Illness Script includes:
    - Who gets the condition? What are predisposing factors
    - How does it present? Clinical manifestations- defining features
      - With regard to symptoms, signs, study results
      - Temporal aspects of the presentation- onset, course of the condition
      - Core pathophysiology
  - Differential diagnosis of Big 10
    - Evaluation/Diagnosis- which tests to order, when to order, how to interpret
  - Initial management of Big 10 and related diagnoses
  - Prognosis
  - Prevention

Script to be provided to the student at the start of the Oral Assessment:

---

You will be presented with a case vignette over the next 30 minutes.

We will give you a brief history to read. This is just to get you started. Feel free to take notes as you learn more about your patient.

We will ask you for an initial differential, and then ask you to refine the differential as you gather more history about the patient. **TAKE NOTES ON YOUR PATIENT.**

**WRITE OUT YOUR DIFFERENTIAL- YOU WILL BE ASKED TO COME BACK TO IT REPEATEDLY.**

After discussing your initial differential, you will then ask questions to gather more information about the HPI, PMH, Meds, SH, FH, PE, etc. Ask all the questions, then we will give you some available answers. We will give you any information you ask for but will not give you information that you do not ask for.

Ask **specific** questions (this applies for both the oral and written OCRAs): For example: Ask specifically about “pain on urination?” or “dysuria?” rather than “any urinary symptoms”.

---
Do not ask “Any associated symptoms?” This is not specific- patients would not understand what you mean, and in the OCRAs, you will miss out on points.
Ask specifically about “Any history of heart disease?” rather than “any PMH?”

Some of the history and physical you ask for may not be available. It should be factored into your clinical reasoning as “unavailable data”, not as “noncontributory”.

After you have given a differential diagnosis, and gathered a history and Pex, we will discuss your initial evaluation of the patient.

We will end with you telling us your leading diagnosis, what data you have that supports your leading diagnosis and discuss any initial management steps you want to take with your patients.

Throughout this assessment, be sure to tell us WHY you suggest whatever you suggest.

At any time, you can always go back and ask for more information (history/PE) about the patient.

Please go ahead and read the first page of the exam. We will start asking questions in 3 minutes.

**Directly Observed FOCUSED H and P Assessment**

Objectives linked to this assessment:

- Demonstrate use of patient-centered interviewing and communication techniques (U.2)
- Take a clinical history that demonstrates both organization and clinical reasoning (U.7)
- Perform accurate and relevant physical exam techniques (U.2)
- Demonstrate a compassionate and patient-sensitive approach to history-taking and physical examinations (B.3)
- Demonstrate a fund of knowledge in the clinical discipline and apply this to patient care (U.4)

These link to the following clerkship learning objectives:

I. Use proper technique to perform an accurate, appropriately detailed and organized **history and physical examination** in an efficient and sensitive manner (C.1)

**Process for the Directly Observed Focused H and P Assessment**

- Each student will be assigned a clerkship faculty who will contact them to set up a time to observe them take a brief, FOCUSED History and Physical Exam from a patient on the wards.
- This formal evaluation will be done by core clerkship faculty.
- This evaluation will take place during the 4-6th week of the clerkship, unless extenuating circumstances do not allow.
- The Focused H and P will be scored from 0-100 (based on a grading rubric) and will in total be 3% of the final grade.
- Failure to meet the expectations of this assessment will result in a reduction in the student’s score, and possible failure of the Focused H and P component.
Fail Directly Observed Focused H and P Assessment - If the student fails only this component of the clerkship, the student must repeat the assessment. If the student fails a 2nd time, the student may have to retake the clerkship in its entirety.

To best prepare for the Directly Observed Focused H and P Assessment: Observe residents and faculty and get observed by residents and faculty interviewing and examining patients during your Medicine 1 clerkship.

Roles and Responsibilities

Clerkship Director
- Oversee the design, implementation, and administration of the curriculum for the clerkship
- Create and maintain an appropriate learning environment, modeling respectful and professional behaviors for and toward students
- Ensure student and faculty access to appropriate resources for medical student education
- Orient students to the clerkship, including defining the levels of student responsibility necessary for required diagnoses and procedures
- Oversee teaching methods (e.g. lectures, small groups, workshops, clinical skills sessions, and distance learning)
- Develop faculty involved in the clerkship
- Evaluate and grade students
  - Develop and monitor assessment materials
  - Use required methods for evaluation and grading
  - Assure mid-clerkship meetings and discussion with students
  - Ensure students are provided with feedback on their performance
  - Submit final evaluations for students via eValue
- Evaluate faculty and programs via peer review and reports from the Medical Education Office and national reports
- Support each student’s academic success and professional growth and development, including working with students experiencing difficulties
- Participate in the BUSM clerkship peer review process
- Ensure LCME accreditation preparation and adherence
- Adhere to the AAMC-developed guidelines regarding Teacher-Learner Expectations

Clerkship Coordinator
- Support the clerkship director in the responsibilities provided above
- Create and maintain an appropriate learning environment, modeling respectful and professional behaviors for and toward students
- Maintain student rosters and clinical schedules
- Coordinate orientations and didactic sessions
- Liaise with site directors and administrators to coordinate student experiences across all sites
- Verify completion of clerkship midpoint and final evaluations for each student
- Monitor students’ reported work hours and report any work hours violations to the clerkship director
- Coordinate and proctor clerkship exams

Site Directors
- Create and maintain an appropriate learning environment, modeling respectful and professional behaviors for and toward students
Orients students to the clinical site
Sets student expectations for clinical encounters and discusses student role and responsibilities
Supervises students by observing history taking, physical exam skills and clerkship specific required observations.
Ensures formative feedback in an appropriate and timely fashion
Delegates increasing levels of responsibility
Meets with the student for the Mid-clerkship review
Meets with the student for the final exit meeting
Recognize students who have academic or professional difficulties and communicate this to clerkship leadership
Collects feedback and evaluation data from all physicians who work with the student
Evaluates students fairly, objectively and consistently following medical school and department rubrics and guidelines
Ensure student and faculty access to appropriate resources for medical student education
Adhere to the AAMC-developed guidelines regarding Teacher-Learner Expectations

Primary Clinical Faculty/Preceptors/Trainees
- Set and clearly communicate expectations to students
- Supervise students by observing history taking and physical exam skills, and document it on the FOCuS form
- Delegate increasing levels of responsibility to the student within clerkship expectations
- Maintain appropriate levels of supervision for students at site.
- Create and maintain an appropriate learning environment, modeling respectful and professional behaviors for and toward students
- Recognize student learning or professional difficulties and communicate to clerkship director directly in real time in person or via email or phone
- Give students appropriate and timely formative feedback
- Assess students objectively using the CSEF form
- Adhere to the AAMC-developed guidelines regarding Teacher-Learner Expectations

Residents and Fellows
- Supervise students by observing history taking and physical exam skills
- Give appropriate and timely formative feedback
- Delegate increasing levels of responsibility to the student
- Recognize student learning or professional difficulties and communicate to clerkship site director
- Create and maintain an appropriate learning environment, modeling respectful and professional behaviors for and toward students
- Assess students objectively using the CSEF form

Supplementary Teaching/Supervision Expectations for Residents- Department of Medicine

The Resident ensures that 3rd year students have meaningful involvement in patient care and learning by:

- Setting expectations and supervising the student
• **Leading effective Work Rounds** and overseeing clinical care during the day that integrates the student into the team and provides multiple opportunities for meaningful involvement in patient care and learning by delegating increasing levels of responsibility
  o Helps in coordinating the conduct of daily ‘CHECK-INS’ in which the student should come with:
    • An organized update on pertinent patient information
    • Interpretation of the information
    • Management recommendations (hopefully)
    • Questions
  Check-ins provide opportunities to provide instruction (specifically to ask questions, observe) and feedback.

• **Delivering excellent teaching** by providing clinical supervision during the day and during dedicated student teaching time (e.g., 20 + minutes ≥ 2 x /week with students to discuss a ‘case’, critique a presentation, go to bedside…), *that emphasizes:*
  o Setting expectations
    • Integrating the clerkship expectations and your own style and preferences- teams are encouraged to use Team Based Orientation tool in passport
  o Providing multiple brief observations of the student doing elements of the history/exam, Pex, etc. and able to assist student in completing passport exercises
• Providing frequent, timely positive and constructive Feedback (and more feedback) and evaluation (on eValue) using “Ask-Tell-Ask” and the eValue CSEF frameworks
• Identifying learning or professional difficulties and questions, and communicate them early to the student education leadership

**Supervision**
Initially, the primary clinical faculty members should designate time to observe you performing: history taking, focused physical exam, clinical problem-solving and interaction with patients and patient education. Once the supervisor establishes the student’s level of confidence and competency, the student should be delegated increasing levels of responsibility in patient care, as appropriate. Although students may initiate a particular patient encounter on their own and without direct supervision, the faculty must at some point review the encounter with the student and inform the patient in-person that the student’s assessment and management plan has been reviewed and approved by the faculty. The faculty is ultimately responsible for the evaluation, treatment, management, and documentation of patient care. If students have concerns regarding their clinical supervision, the site director and clerkship director should be immediately notified.

**Supervision and Delegating Increasing Levels of Responsibility**
It is expected that the level of student responsibility and supervision will be commensurate with student’s competency and level of confidence. When the student arrives to a new setting, a faculty/resident may wish to observe you for the first session. Thereafter, you should begin to see patients on your own. In the outpatient setting, the student should initially perform **4-5 focused visits per day in the first week, increasing to 6-12 thereafter.** In the inpatient setting, the student should initially follow 1-2 patients and increased to ~3 thereafter. When a student feels that he or she is being asked to perform beyond his or her level of confidence or competency, it is the responsibility of the student to promptly inform the preceptor. It is then the preceptor’s responsibility to constructively address the student’s concerns and appropriately restructure the teaching encounter to address the student’s learning needs.
Under no circumstances should the following occur:

- Patient leaves the office/hospital with never having had a direct face-to-face encounter with clinical faculty/supervising resident.
- Primary faculty gives “prior approval” for student to perform intervention (order labs, prescribe meds) without satisfactory review.
- Patient leaves office/hospital without being informed that assessment/management plan has been directly reviewed and approved by the faculty.
- Learning in which a student is expected to perform an intervention or encounter without the prerequisite training and/or adequate supervision.
- Student note provides the only record of the visit. Although all faculty see all patients, faculty must document that they were actually the person responsible for seeing and examining the patient.

Physical Exam Demonstrations

The demonstration of the physical examination on students should not be done by any supervisor of students including residents and attending faculty. Practicing the physical examination on students places them in a position where they may feel pressure to consent to something they may not feel comfortable with.

Third Year Student

The 3rd year student:

- Learns through meaningful involvement in patient care and learning with graduated decision-making responsibility
- Is available to help the team but “Learning comes first”
- Is a proactive, self-directed learner

Learns through meaningful involvement in patient care and learning/teaching with graduated decision-making responsibility.

- Sees patients independently
- Pre-rounds and initiates discussion with assigned patients on work rounds
- Formally presents assigned patients each day on work rounds
- Enters patient orders under the supervision of physicians
- Follows-up on labs, imaging, consults
- Updates intern, team and patient (CHECK-IN with team members, see above) as new information emerges
- Speaks with consultants
- Provides initial write-up & daily progress notes
- Admits ≥ 3 new patients per week (ideally new admissions and not transfers from ICU), of which at least 1 patient/week is “truly new” (i.e., admitted from the ED or office/clinic; transfer patients and patients initially admitted by night float do not count as “truly new”)
- Provides brief, targeted topic presentations to the team on a regular (at least weekly) basis
- Learns from own patients first but also from all patients on the team
- Participates in discharge planning on patients you directly follow but do not do discharge summaries!

The 3rd year student is available to help the team but learning comes first.

- Learning from direct patient care is complemented by:
o Attending conferences and small group learning sessions
o Observing procedures
o Reading (at night and during slow periods on some days).

The 3rd year student is a proactive, self-directed learner who:

- Elicits and clarifies expectations from your interns, resident, and attendings
- Addresses questions, concerns, confusion with the team or with your CD or site directors ASAP
- Identifies your learning needs and acts upon them
- Solicits feedback from your teachers
- Contacts your Clerkship Director with questions, comments or concerns early
- Adapts to team transitions and realities

See Requirements in the Assignment section of this Syllabus for a listing of responsibilities.

**Professional Comportment**

Students are expected to adhere to the AAMC-developed guidelines regarding Teacher-Learner Expectations, located on the Policies page, under “Academic Policies and Information” ([http://www.bumc.bu.edu/busm/files/2015/05/AAMC-Teacher-Learner-Expectations.pdf](http://www.bumc.bu.edu/busm/files/2015/05/AAMC-Teacher-Learner-Expectations.pdf))

Students are expected to be aware of and follow the site expectations on professional comportment, including, but not limited to, dress code and the use of phones, pagers, and laptops. Students must arrive on time at their site and for any scheduled sessions. Any missed sessions and absences must adhere to the Attendance & Time Off Policy.

Further, below are expectations for student professionalism in the core clerkship curriculum. These include, but are not limited to:

- Treating the clerkship team in a professional and respectful manner
- Engaging in the core curriculum and participating respectfully at all times
- Arriving at clerkship didactic sessions on time
- Requesting faculty and resident evaluations in a timely manner
- Reviewing and responding to e-mail requests in a timely manner.
- Returning borrowed clerkship materials on time
- Handing in all assignments on time
- Completing all logs and FOCuS forms by the clerkship specific deadline
- Informing clerkship leadership and supervising faculty/residents of absences

Professionalism will be reviewed at the mid-clerkship feedback session and will be given feedback when professionalism concerns are identified on the clerkship. If students are not meeting professionalism expectations of the clerkship or there are significant professionalism concerns, students will be made aware of the concerns noted by the clerkship directors, clerkship coordinator, faculty or residents.

**Ethical Behavior for Examinations and Mandatory Sessions**

- Refrain from any conversation with your peers during exams and as you leave the L-11 testing space, including within the vending room and elevator waiting area, until you are on the elevator.
- Don’t seek or receive copies of the examinations
• Signing in classmates, or signing in yourself and not staying, for mandatory sessions is considered cheating and violations will be referred to Medical Student Disciplinary Committee
• If you are aware of any violations of the ethical standards listed above, within the Student Disciplinary Code of Academic and Professional Conduct, or otherwise, report it to the Clerkship Director

**Student Evaluation of the Clerkship**
Student feedback is a highly valued, critical resource for helping us continually improve our curriculum. Evaluation of learning experiences is a requirement of the Liaison Committee on Medical Education. To ensure that we have a representative amount of data on our courses and clerkships, all students are expected to complete an evaluation via eValue ([www.e-value.net](http://www.e-value.net)) for each of the courses/modules and their instructors. All evaluations are anonymous and aggregate data is only released to clerkship directors after grades have been submitted for the blocks. Please comment freely and honestly about your experience.

**Blackboard**
Students will have access to a Blackboard site for the clerkship. The site is listed under “My Courses” as MS310 A1: Medicine 1 Clerkship on your Blackboard landing page.

Students who have questions about the Blackboard site or find that they do not have access to the site should contact the Clerkship Coordinator for assistance.

Blackboard Learn: [https://learn.bu.edu/](https://learn.bu.edu/)

**Assignments**
1. Complete, sign (along with your observer) and upload to eValue 2 FOCuS Forms
   a. Interview and Data Gathering (1)
   b. Physical Exam (1)
2. Complete, sign (along with your observer) and turn in (as part of passport) Medicine Clerkship Structured Observation of Clinical Skills Cards (SOCS)
   a. JVP Exam
   b. Cardiac Exam
   c. Pulmonary Exam
3. Enter your assigned patients into the E*Value patient encounter log and ensure that you have seen and documented that you have seen the expected number (≥ 15) and types of patients (Big 10). Provide a paper copy for your Clerkship Director/Adviser at your feedback meetings.
4. Complete the **Observed Clinical Reasoning Assessment** in weeks 4-6 of the clerkship. Date/time to be assigned.
5. Complete the **Directly Observed Focused H and P Assessment** in weeks 4-6 of the clerkship. Date/time to be assigned.
6. Participate in the **mid-point and end-of-clerkship feedback** sessions and sign the feedback form confirming completion.
7. Complete and review **Preceptor Log** with your CD. Additionally, submit the preceptor log (excel sheet) to Yulianna Santos at the end of week 3 and week 6.
8. Complete in E*Value your **duty hours** that enumerates your in-hospital work hours. You are expected to average < 80 hours per week in the hospital. Review the time card with your CD/Adviser at your mid-point and end-of-clerkship feedback meetings.
9. Complete E*Value and **Department of Medicine evaluation** of the clerkship and of your supervising residents and attendings.

10. Successfully complete the **Medicine Subject (“Shelf”) Exam** on the final day of the clerkship.

**Patient Encounters/Case Logs**

Across the third year, there are required patient encounters and procedures that must be logged whenever they are seen. To log the patient encounter, students must have participated in the history, physical exam, assessment and plan development of the patient.

**Required Patient Encounters (BUSM Core)**

[http://www.bumc.bu.edu/busm/education/medical-education/faculty-resources/](http://www.bumc.bu.edu/busm/education/medical-education/faculty-resources/)

Students should log every time they see any patient with the required patient encounter and continue to log throughout all clerkships.

<table>
<thead>
<tr>
<th>Clerkship/Clinical discipline</th>
<th>Patient type/ Clinical condition</th>
<th>Clinical setting</th>
<th>Level of student responsibility*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Medicine</td>
<td>Fever</td>
<td>I</td>
<td>All</td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>Low blood pressure</td>
<td>I</td>
<td>All</td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>The hospitalized patient with chest pain</td>
<td>I</td>
<td>All</td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>Shortness of breath</td>
<td>I</td>
<td>All</td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>Lab abnormalities (glucose, acid-base, creatinine, sodium, potassium, calcium, hemoglobin)</td>
<td>I</td>
<td>All</td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>Palpitations</td>
<td>I</td>
<td>All</td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>Extremity pain/swelling</td>
<td>I</td>
<td>All</td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>The hospitalized patient with chronic kidney disease</td>
<td>I</td>
<td>All</td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>The hospitalized patient with congestive heart failure</td>
<td>I</td>
<td>All</td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>The hospitalized patient with COPD/emphysema</td>
<td>I</td>
<td>All</td>
</tr>
</tbody>
</table>

Each student is expected to “see” ≥ 15 patients where you serve as the primary student actively caring for the patient, writing notes… (under the guidance of faculty and house staff). Included among the patients you must see are patients with each of the following “Big 10” active problems:

- Fever
- Low Blood Pressure
- The hospitalized patient with best pain
- Shortness of breath
- Lab abnormalities (glucose, acid-base, creatinine, sodium, potassium, calcium, hemoglobin)
- Palpitations
- Extremity Pain/Swelling
- The hospitalized patient with chronic kidney disease
- The hospitalized patient with congestive heart failure
- The hospitalized patient with COPD/emphysema

See “Patient Encounters Log” section for details on documenting required patient encounters.
Strongly Recommended Experiences

In addition to the requirements described above, it is strongly recommended that you care for patients with the attributes or conditions described below, and address the recommendations regarding patient education/counseling, prevention, systems and patient safety and procedures.

Socio-demographics

- Elderly patient- > 75 years of age
- A patient who does not speak English
- A patient with limited access to care
- A patient from a culture not your own

Patient Education/Counseling – Perform the following patient education/counseling interactions as clinically indicated on patients you follow.

- Provide discharge instructions
- Promote behavioral change (e.g. tobacco, alcohol, other substance use, diet, weight loss, exercise)
- Facilitate medication adherence

End of Life and Advance Directives Discussions. Join your attending, resident or the Palliative Care Service to observe and participate in these crucial and powerful discussions with the patient and family in which, through partnership, decisions are made that integrate patient prognosis with patient values, priorities and wishes, to guide care in very ill patients who are near the end of their lives.

Prevention (primary, secondary or tertiary)/health promotion as a major focus of the interaction. Address an issue of prevention with the patients you follow. Prevention interventions may overlap with the patient education/counseling described above.

Systems and Patient Safety

- Identify instances where systems problems or strengths may have impacted on the quality of care your patients received
- Propose ways to improve the microsystems of care with which you interact
- Educate your patient on his major condition and the key medications you are asking him to take

Procedures you may observe:

- **Observe the following procedures listed below, describe the experience from the patient’s perspective, and interpret and apply the results to the patient.**
- **Of note, during the COVID-19 pandemic, you may have to wear an N95 for select procedures.** Please consult your supervisors to clarify.

- Thoracentesis
- Paracentesis
- Lumbar puncture
- Cardiac stress test
- Echocardiogram
- Cardiac catheterization
- GI endoscopy
- Bronchoscopy
In addition, for each of the procedures listed above you should aim to describe:
- The information it can provide
- Benefits and risks
- Indications/Contraindications
- Potential complications and how to reduce the risk of the complications

**Alternative Patient Encounters**

*If you do not see a patient with one of the required characteristics noted above*, you are expected to speak with your Clerkship Director to identify a “real” or “virtual” patient learning opportunity to meet this Clerkship expectation.

If a student has not been able to experience all patient encounters required for the clerkship, students must address any gaps in their patient encounters through an alternative experience. In this clerkship, the alternative experiences are virtual patients, which may come from the Clinical Program Solving cases or other paper or electronic sources approved by the Clerkship Director.

**Patient Encounter Log**

Students are expected to log their patient encounters in eValue ([www.e-value.net](http://www.e-value.net)). Patient logs help the clerkship ensure that each student is seeing a diagnostically diverse patient population, an adequate number of patients, and performing a sufficient number of required procedures and diagnoses. The directions on how to log patient encounters can be found on the eValue help page [http://www.bumc.bu.edu/evalue/students/](http://www.bumc.bu.edu/evalue/students/). Students must bring a printed copy of their patient encounter and procedure log to their mid rotation feedback meeting.

**Policies and Procedures for Evaluation, Grading and Promotion of Boston University School of Medicine MD Students**

**Collaborative Student Assessment System**

**Student Disciplinary Code of Academic and Professional Conduct**

**Attendance Policies**

On-site hours must be limited to 80 hours per week, averaged over a two-week period. Violations should be reported directly to the clerkship director or to an Associate Dean (Medical Education or Student Affairs). Time off requests must comply with the Attendance & Time Off Policy.

  - 3rd Year Excused Absence Form: [https://wwwapp.bumc.bu.edu/MedPersonalDays/home/Index](https://wwwapp.bumc.bu.edu/MedPersonalDays/home/Index)
- Work Hours: [http://www.bumc.bu.edu/busm/education/medical-education/policies/work-hours/](http://www.bumc.bu.edu/busm/education/medical-education/policies/work-hours/)
Personal Day Policies
http://www.bumc.bu.edu/busm/education/medical-education/policies/personal-days-policy/

Clerkship Specific Blackout Dates
Students cannot take personal days under the following circumstances:

- The first day on a new team or at a new site (this includes 1st and 2nd day of rotation due to clerkship and site orientation and the 1st day of Week 5)
- During the 2 week X1 and/or X2 blocks when these occur at the end of the clerkship. For blocks ending with a 4 week block, the last 2 weeks will be blackout periods for personal days. This is a really limited timeframe when students will be 1) Completing final assessments including OCRAs and Directly Observed H and P assessments, and 2) Reading days are assigned during these times. Due to these other obligations, the students will already have limited face-time with their teams. Additional scheduled absences, such as personal days, will significantly limit preceptors’ abilities to complete student CSEF assessments.

Scrubs Policy
http://www.bumc.bu.edu/busm/education/medical-education/policies/scrubs-policy/

BUSM Policies
In addition to the expectations listed above, all students are expected to adhere to BUSM and Boston University policies.  
http://www.bumc.bu.edu/busm/education/medical-education/policies/

BU Policies and Student Support Services

Appropriate Treatment in Medicine
Boston University School of Medicine (BUSM) is committed to providing a work and educational environment that is conducive to teaching and learning, research, the practice of medicine and patient care. This includes a shared commitment among all members of the BUSM community to respect each person’s worth and dignity, and to contribute to a positive learning environment where medical students are enabled and encouraged to excel.

BUSM has a ZERO tolerance policy for medical student mistreatment.

Students who have experienced or witnessed mistreatment are encouraged to report it using one of the following methods:

- Contact the chair of the Appropriate Treatment in Medicine Committee (ATM), Dr. Robert Vinci, MD, directly by email (bob.vinci@bmc.org)
- Submit an online Incident Report Form through the online reporting system https://www.bumc.bu.edu/busm/student-affairs/atm/report-an-incident-to-atm/

These reports are sent to the ATM chair directly. Complaints will be kept confidential and addressed quickly.

Appropriate Treatment in Medicine website: http://www.bumc.bu.edu/busm/student-affairs/atm/
Needle Sticks and Exposure Procedure
http://www.bumc.bu.edu/busm/student-affairs/additional-student-resources/needle-stickexposure/

Boston University Sexual Misconduct/Title IX Policy

Boston University Social Media Guidelines
http://www.bu.edu/policies/information-security-home/social-media-guidelines/

Recent Changes to the Clerkship

- Changes to grading percentages
  - Shelf decrease to 25%
  - CSEF stable at 60%
  - "Other" component increase in value to 15% (OCRAs 12%, Directly Observed Focused History and Physical 3%)
- More OCRA style didactics
- Student report moved to Thursday 12-1pm
  - Redesigned to incorporate OCRA skills practice
  - Timing moved to preserve more clinical time for students
- Direct observation of H&P by CDs/site directors
  - Formally assessed
- Fewer FOCUS forms
- Fewer working weekends (historically 62.5%, now down to 33.3%)
- Fewer assignments (no more CPG)

Learning Strategies and Tools

Recommended Texts

Some Guidelines on reading during the clerkship

- Target-- 10-15 hours of reading per week
- Focus on enduring information—differential diagnosis, pathophysiology, natural history, evaluation of a problem
- Re: Therapy-- understand the details of the common medications/interventions you use with your patients (except chemotherapy) and how to use them. Otherwise, place greater emphasis on the principles of therapy than specifics
- Roughly 75% Text / 25% literature

For Reading, we suggest you:

- Find a textbook(s) you will read
- Identify and use some of the “quick and practical” resources (these should NOT be used alone without a textbook)
- Get a question bank
We recommend you choose a textbook that focuses on the needs and realities of the 3rd year clerk. We list below some popular options.

- **Stern SDC, Cifu AS, Altkorn D. Symptom to Diagnosis. 4th edition. Lange Medical Books/McGraw-Hill. 2020.**
- **Internal Medicine Essentials for Clerkship Students. ACP/CDIM. American College of Physicians. 2015.**
- **Cecil Essentials of Medicine. 9th edition. WB Saunders Company.**

UpToDate and Access Medicine (including Harrison’s Principles of Internal Medicine. are available on-line through BUSM and BMC and can be helpful.

**Other Textbooks**

- “Fat” Books - Harrisons, Cecils, Kelly…

**“Quick and dirty”/ Practical**

- **Pocket Medicine**
- **Washington Manual,**
- **Ferri, “Practical Care of the Patient”**
- **Sanford (antibiotics),**
- **Programmed ECG text.**

**Question Books**

- **IM Essentials Questions- MKSAP**
- **USMLE Q Bank**

**Evidence-Based Medicine Point-of-Care Resources**

Point-of-care tools are reference resources that a clinician can utilize to quickly make evidence-based decisions when interacting with a patient. They usually contain “filtered” information, meaning that the information from primary literature (e.g. randomized clinical trials, cohort studies) has been critically appraised and synthesized. While they are very useful decision-making aids, they are still subject to bias and other forms of error, and you should learn about their strengths and limitations.

A few useful Point-of-Care Resources include:

- **BMJ Clinical Evidence**- provides systematic reviews that summarize the current state of knowledge – and uncertainty – about the prevention and treatment of clinical conditions, based on thorough searches and appraisal of the literature. They don’t tell you what to do.
• **Cochrane Database of Systematic reviews** - Includes the full text of the Cochrane Collaboration’s regularly updated systematic reviews of the effects of healthcare interventions. Well filtered but not everything is covered.

• **DynaMed** - evidence-based information resource that is designed to answer clinical questions quickly and easily.

• **USPSTF**—https://www.uspreventiveservicestaskforce.org/Page/Name/recommendations
The United States Preventive Services Task Force is an independent, volunteer panel of national experts in prevention and evidence-based medicine. The Task Force works to improve the health of all Americans by making evidence-based recommendations about clinical preventive services such as screenings, counseling services, and preventive medications. These recommendations have been considered the “gold standard” for clinical preventive services.

Other useful EBM resources/sites include the Centers for Disease Control, National Guideline Clearinghouse, and the ACC/AHA Joint Guidelines
http://professional.heart.org/professional/GuidelinesStatements/searchresults.jsp?q=&y=&t=1001

**Online Resources**

• Clerkship Directors in Internal Medicine (CDIM) is the national organization that supports student education in internal medicine [http://www.im.org/p/cm/ld/fid=235](http://www.im.org/p/cm/ld/fid=235).

• The Internal Medicine Clerkship Primer is produced by CDIM and provides a useful overview of the clerkship and suggestions to help you maximize the experience [http://www.im.org/p/cm/ld/fid=664](http://www.im.org/p/cm/ld/fid=664).

• Simulated Internal Medicine Learning Experiences at CDIM- SIMPLE.

• Boston University Medical Center Alumni Medical Library [http://www.bumc.bu.edu/medlib/](http://www.bumc.bu.edu/medlib/)

• ECG Maven – a website that provides a wide variety of ECG’s to learn from and test yourself. [http://ecg.bidmc.harvard.edu/maven/mavenmain.asp](http://ecg.bidmc.harvard.edu/maven/mavenmain.asp)

• BMC Intranet Home Page- [http://www.internal.bmc.org/](http://www.internal.bmc.org/) - available in-house with access to Harrison’s Online and other Access Medicine Textbooks, UpToDate online, and other resources, such as the BMC antibiogram.

• The American College of Physicians (ACP) is a national organization of internists — physicians who specialize in the prevention, detection and treatment of illnesses in adults. ACP is the largest medical-specialty organization and second-largest physician group in the United States. Its membership of 133,000 includes internists, internal medicine sub-specialists, and medical students, residents, and fellows. The website provides information relevant to education, practice and policy in internal medicine. [http://www.acponline.org/](http://www.acponline.org/)

• The Society of General Internal Medicine is a national medical society of 3,000 physicians who are the primary internal medicine faculty of every medical school and major teaching hospital in the United States. Its mission is “to lead excellence, change, and innovation in clinical care, education, and research in general internal medicine to achieve health care delivery that is comprehensive, technologically-advanced and individualized; instills trust within a culture of respect; is efficient in the use of time, people, and resources; is organized and financed to achieve optimal health outcomes; maximizes equity, and continually learns and adapts.” Good exposure to academic internal medicine. [www.sgim.org](http://www.sgim.org)

**Journal Articles**

Selected High-Yield Medical Journals
- New England Journal of Medicine- covers all fields of medicine with strong internal medicine influence. The Clinical Problem Solving cases and Clinical Pathologic case discussions are particularly relevant.
- Annals of Internal Medicine-strong internal medicine (IM) journal.
- JAMA- general medicine coverage with strong IM influence.
- Lancet- international general medicine journal with good IM coverage.

eValue Student Resources
http://www.bumc.bu.edu/evalue/students/

Echo360/Technology
Echo360 may only be used for streaming captured lecture videos; the videos may not be downloaded. Taking smartphone or digital pictures or videos of any part of the lecture in class, or at home, is similar to downloading and is not allowed. There are a number of reasons for this, including that students and/or the University may be liable for violations of federal copyright and privacy laws as a result of the use of copied material.

If you experience any technical problems, please report the issue in one of the following ways to generate an IT ticket:

- **Echo360 Related Issues:** Create a ticket on the Ed Media site (http://www.bumc.bu.edu/bumc-emc/instructional-services/echo360/): sign in and provide pertinent information that will enable an effective response. Have a link to the problematic video ready to copy/paste into this form.

- **Educational Technology Related Issues:** For assistance with technology supported by BUMC's Educational Media (e.g. ExamSoft), tickets can be created via their website at: http://www.bumc.bu.edu/bumc-emc/instructional-services/report-an-educational-technology-issue/

- **Other Technology Related Issues:** For assistance with BU-wide technology, such as Blackboard, email an example (e.g. picture or very brief phone video) to ithelp@bu.edu with a descriptive subject line and give as many details as possible on the what, where, how you are using the service and what type of computer, browser, etc. along with type of student (i.e. BUSM III). Always include link(s) to or screen shots of where the issue is occurring.


Tutoring
Peer tutors may be requested via the Office of Academic Enhancement’s Peer Tutoring Program at: http://www.bumc.bu.edu/busm/student-affairs/office-of-academic-enhancement/academic-enhancement/peer-tutoring-program/

Office of Disability Services
Boston University is committed to providing equal and integrated access for individuals with disabilities. The Office of Disability Services provides services and support to ensure that students are able to access and participate in the opportunities available at Boston University.
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Session Learning Objectives and Notes
Clinical Problem Solving Cases, High Priority Reading & other Core Learning
These clinical problem solving cases span cases, workshops and didactics incorporated both into the clinical clerkship, as well as the July 17-24th 2020 Virtual Internal Medicine Clerkship.

**Chest Pain**

**Objectives**

- Estimate the probability that coronary artery disease is the cause of the patient’s presentation with chest pain. To do this, we consider:
  - Degree to which the chest pain “syndrome” is typical for coronary ischemia
  - Probability the “substrate” (i.e., patient) has coronary artery disease. This is based on the patient’s CAD risk factors
- Identify and apply the determinants of myocardial oxygen demand and supply along with the underlying pathophysiology of stable angina and “acute coronary syndromes”, to patient care
- Describe the role of stress testing and cardiac catheterization in patients with suspected coronary heart disease
- Outline and apply the principles of management of exertional CP (angina) and acute coronary syndromes (unstable angina or acute myocardial infarction-MI)

**Syncope**

**Objectives**

- Apply the definition of syncope to distinguish syncope from other causes of loss of consciousness and falls ---“the imposters” (e.g., seizures, ataxia, cataplexy…)
- Use the history and physical exam to identify possible causes of syncope
- Identify patients at high risk for a cardiac cause of syncope
- Appropriately order and interpret diagnostic tests that are most likely to be helpful in patients presenting with syncope
- Distinguish by physical exam among the causes of systolic ejection and regurgitant murmurs
- Distinguish between supraventricular and ventricular tachycardias based on EKG

**Dyspnea**

**Objectives**

- Formulate a differential diagnosis for acute dyspnea
- Identify the symptoms and signs of heart failure (HF)
- Distinguish between heart failure due to systolic vs diastolic dysfunction
- Identify a patient’s cardiac functional status (class) and explain its significance
- Provide a prognosis for a patient with HF and identify data that predicts risk
- Articulate the principles of managing a patient with HF and describe the role of the different medication classes used to treat this disorder
- Identify the complications associated with atrial fibrillation and the principles of how to manage them

**Dyspnea After Surgery**

**Objectives**

- Demonstrate a rational approach to diagnose a patient presenting with acute dyspnea
- Utilize the history, exam and simple testing to assess the probability that a patient has venous thromboembolic (VTE) disease
- Describe the strengths, limitations and use of tests commonly used to diagnose VTE
- Weigh benefits and risks of therapeutic options in a patient with likely VTE and recommend a course of action
- List the options available to prevent VTE and apply them in patients with varying risk for this disorder

**Cough/Weight Loss/Hemoptysis**

**Objectives**
- Identify persons at-risk for tuberculosis
- Describe the principles of TB skin testing and to which patients it should be applied
- Describe specific and non-specific symptoms of pulmonary tuberculosis
- Outline criteria and reasons for respiratory isolation of potentially infectious cases of TB
- Describe principles of TB chemotherapy, including factors that affect adherence to treatment and strategies available to enforce adherence
- List the strengths and weaknesses of newer diagnostic tests for TB
- Identify “missed opportunities for: (a) prevention and (b) spread of infection to others

**Rough Breathing in Exam Room**

**Objectives**
- Define Chronic Obstructive Pulmonary Disease (COPD)
- Distinguish among Emphysema, Chronic Bronchitis and Asthma
- Describe the pathogenesis of airflow obstruction in COPD
- Appropriately order and interpret pulmonary function tests (PFT’s)
- Describe the principles of managing COPD, both during an acute exacerbation and at times of symptomatic but stable disease
- Identify smoking and other causes in patients with COPD
- Develop an approach to address and assist a patient in stopping smoking
- Define dementia and delirium and describe how you will distinguish between them in a patient presenting with “confusion”
- Identify medications and conditions that can adversely affect the geriatric population

**Diabetes: Inpatient and Outpatient DM2**

**Objectives**
- Correctly apply the diagnostic criteria for type 2 diabetes mellitus to a patient
- Describe methods and reasons for controlling blood glucose inpatient vs. outpatient
- Identify the components of a routine evaluation of a diabetic patient
- Describe the natural history of type 2 diabetes
- Identify outpatient and inpatient interventions that may alter it

**Diabetic Hyperglycemic Crisis**

**Objectives**
- Correctly identify the difference between DKA and HHS
- Identify underlying pathophysiologic mechanisms that impact management of each syndrome
- Understand the basic management principals involved in managing hyperglycemic crisis

**Fever/Cough/Dyspnea**

**Objectives**
- Recognize a common presentation of a common illness—pneumonia
- Take a focused, but thorough history and physical of a dyspneic patient
- Explain the findings on chest exam that are seen in patients with lobar and other pneumonias
- Appropriately utilize laboratory and radiologic tools in making a diagnosis
- Describe the factors that influence the decision to admit a patient with pneumonia
- Manage a common infection and anticipate potential complications
- Distinguish between a transudative and exudative pleural effusion
- Formulate a differential diagnosis of a pleural effusion based on the history, exam and pleural fluid findings

**Fever and Confusion with Cirrhosis**

**Objectives**
- Identify and recognize the findings of advanced liver disease
- Recognize complications of chronic liver disease
- Assess the prognosis of a patient with chronic liver disease
- In a patient who presents with a change in mental status, demonstrate a mental status assessment, characterize the problem (e.g. delirium, dementia…), develop a differential diagnosis and outline an approach to evaluation
- For a patient with ascites, describe maneuvers to elicit this finding, develop a differential diagnosis for the ascites, and determine the likely cause, by utilizing findings from the history, exam and paracentesis
- Describe the spectrum of alcohol withdrawal and identify factors that put a patient at high risk for major alcohol withdrawal
- Risk stratify a patient regarding risk for alcohol withdrawal and outline initial management

**HIV infection**

**Objectives**
- Recognize the signs and symptoms of acute HIV seroconversion
- Describe the pathophysiology of HIV infection
- Explain the current concepts concerning who should be treated with antiretroviral drugs, and when to start prophylaxis for opportunistic infection
- Describe the natural history of HIV and the impact that highly aggressive anti-retroviral therapy (HAART) has had

**Vomiting Blood**

**Objectives**
- Localize the site of a gastrointestinal bleed by history
• Accurately assess and stabilize a bleeding patient
• Take a focused, timely, but thorough history on a patient with a GI bleed
• Describe the use, and reliability of laboratory and radiologic data in the assessment of a bleeding patient
• Risk stratify and appropriately treat an upper gastrointestinal bleed
• Describe the key mechanisms that protect against peptic ulcer disease and pathogenic processes and insults that can cause mucosal injury.
• Explain the use of the various diagnostic and therapeutic modalities available for Helicobacter Pylori

**Acute Abdominal Pain**

**Objectives**
• Develop a differential diagnosis appropriate to a patient presenting with acute, severe abdominal pain
• Identify likely causes for this patient’s presentation
• Assess this patient’s risk for a complicated course

**Fatigue and Icterus**

**Objectives**
• Identify the manifestations, causes, and principles of management of chronic liver disease
• For a patient with ascites, describe maneuvers to elicit this finding, develop a differential diagnosis, and determine the likely cause by utilizing findings from the history, exam, and paracentesis
• Identify patients at high risk for hepatitis C, describe its natural history, and, outline the rationale for specific treatment
• Utilize the history to identify patients at high risk for or with problems due to the misuse of alcohol

**Dark Urine and Progressive Fatigue**

**Objectives**
• Identify potential causes of an anemia with a high reticulocyte count
• Describe a diagnostic approach to a patient with anemia and a high reticulocyte count
• Identify the causes of “dark urine” and outline an approach to distinguish among them
• Calculate and interpret the reticulocyte production index

**Renal Physiology**

**Objectives**
• Assess volume status by history, exam and lab testing
• Define the physiologic basis of orthostatic hypotension
• Estimate GFR in chronic renal failure
• Develop an approach to worsening renal function with particular emphasis on distinguishing pre-renal causes from acute tubular necrosis
• Identify causes of hypobicarbonatemia
• Calculate the anion gap
• Develop a differential diagnosis for anion-gap and non-gap metabolic acidosis
• Evaluate and treat hyperkalemia
• Identify and treat hypernatremia
**Acid Base**
Objectives
- Demonstrate a systematic approach to acid base disturbances
- List a differential diagnosis for the common acidoses and alkalosis
- Identify complex disorders (dual or triple disorders)

**Ethics**
Objectives
- Identify the ethical dilemma in situations
- Discuss techniques to resolve ethical dilemmas
- Discuss resources at BMC to assist providers when in ethical situations

**Pain Management and End of Life Issues**
Objectives
- Describe an approach to alleviate pain and suffering for a patient with metastatic cancer
- Demonstrate how to safely and effectively employ commonly –used medications in the treatment of mild, moderate, and severe pain
- Discuss options of care we can offer patients and their families at the end of life
- Define palliative care and hospice, and identify situations in which these approaches to care are appropriate

**Hyponatremia**
Objectives
- Apply the foundational pathophysiology principles underlying hyponatremia
- List and organize a differential diagnosis for hyponatremia
- Describe an approach to evaluate and manage hyponatremia
- Identify risk factors for osmotic demyelination syndrome (ODS)
- Initiate safe initial treatment in a patient with hyponatremia
- Identify situations when you should promptly seek renal consultation

**Handoffs**
Objectives
- Understand the importance of structured communication when handing off patients
- Define the components of the IPASS mnemonic
- Critically construct and observe a verbal IPASS handoff

**Abnormal LFTs**
Objectives
- Develop a differential diagnosis for the following LFTs patterns:
  - Severely elevated transaminases
  - Severely elevated alkaline phosphatase
- Mild-moderately elevated transaminases
- Assess the severity of liver dysfunction using clinical, exam, and laboratory features.

**Glomerulonephritis/Vasculitis**

**Objectives**

- Diagnose a patient with glomerulonephritis (GN) from clinical history, exam, and laboratory findings.
- Generate a differential diagnosis for GN and state the key findings and laboratory tests that are used to make these diagnoses.
- Propose a treatment plan for the most common causes of GN.

**Coagulation Disorders – Bleeding**

**Objectives**

- Develop a differential diagnosis and an approach to a patient with a defect in hemostasis, including key history questions, exam findings, and laboratory tests.
- Assess a patient’s risk of bleeding based on the level and function of platelets, and the presumed mechanism of thrombocytopenia.

**The Art of the Oral Patient Presentation**

**Objectives**

- Identify the key contextual factors that impact on your oral patient presentations
- Describe the key components of an oral patient presentation- SOAPS
- Practice organizing an oral patient presentation

**Learning Diagnostic Reasoning**

**Objectives**

- Apply both intuitive and analytic approaches to making a diagnosis
- Both Trust your intuition and then challenge it
- Describe and employ Illness Scripts, Schema and Problem representations in addressing diagnostic dilemmas

**Student Report**

**Objectives**

- For the clinical problem(s) addressed, obtain a focused history and physical, generate a patient-specific differential diagnosis, develop initial steps to evaluate your differential, explain your reasoning and describe the most important and relevant pathophysiology for the condition(s)
- Identify the most useful diagnostic tests, describe the utility and limitations of these diagnostic tests, and interpret their results
- Recommend initial treatment
- Identify the most important components of the context of care including: patient socio-demographics, language, culture, patient belief system and illness behavior, and the system of care (e.g. access to care, finances, care coordination)
- Describe how these factors impact patient care and clinical outcomes, and how the system might be improved or the problem prevented
CV Exam
Objectives
- Describe a 6-step, systematic approach to evaluate a patient with a possible cardiac condition
- Identify characteristics on physical exam that distinguish between patients who are hemodynamically stable, vasoconstricted, or in pulmonary edema
- Palpate the heart to distinguish PMIs that are normal and 2 prototypical abnormalities: sustained/diffuse, and laterally displaced/dyskinetic
- Describe how to measure the jugular venous pressure
- Describe how to differentiate the carotid upstroke that is normal and one that is weak and (relative to the PMI) slow
- Recognize and mimic heart sounds to assess: Normal S1 and S2, 2 gallops: S4 and S3, 2 key systolic murmurs: AS and MR, and define and interpret the clinical significance (pathophysiology and impact on differential diagnosis) of the findings noted above.

ECG Interpretation Sessions
Objectives
- Apply a systematic approach to interpret the EKG
- Begin to recognize common and “can’t miss” EKG diagnoses

CD-Student Small Group Sessions
Objectives (your small group sessions will cover some of these objectives)
- Demonstrate a focused approach to obtaining a history and performing a physical exam
- Describe the key elements of a strong oral patient presentation of a new patient on Work Rounds
- Deliver a concise, targeted, coherent oral patient presentation that "makes the case" for your assessment and plan
- Provide a well-organized and coherent write-up that ‘makes the case’ for your assessment and plan
- Demonstrate the ability to obtain the key elements of an HPI
- Provide a differential diagnosis and support for your proposed conditions that is appropriate to the patient being presented
- Identify the common and “don’t miss” (diagnostic imperatives) conditions associated with presentations of Chest pain, Dyspnea, Fever, Anemia, Acute Kidney Injury and common Acid-base & Electrolyte disorders
- Describe the illness scripts for common and ‘don’t miss’ conditions that often present with: Chest Pain, Dyspnea, Fever, Anemia, Acute Kidney Injury and common Acid-base & Electrolyte disorders and how they differ
- Demonstrate the method and be able to provide an estimate of the patient's JVP
- Distinguish systolic ejection murmurs from regurgitant murmurs
- Perform a systematic CV exam using proper technique
- Demonstrate a systematic chest/pulmonary exam and detect abnormalities
- Describe the elements from the history, physical exam and foundational studies that will enable you to assess the patient's volume status
• Define and distinguish intravascular volume depletion and reduced effective circulating volume
• Demonstrate the ability to effectively solicit and incorporate feedback from your supervisors and improve your current performance
• Show the actions of a self-directed learner
• Demonstrate through discussion and behavior what it means to be a physician and how to grapple with the uncertainties and ethical dilemmas
• Critically incorporate the relevant evidence (science/medical literature) into your patient assessments
• Demonstrate an approach to assess the rate and rhythm on ECG

**High Priority Conditions you should read about**
In addition to the requirement that you see \( \geq 15 \) patients as the primary student caring for the patient, and seeing patients with each of the “Big 10” active problems, *it is strongly recommended* that you care for real or simulated patients with or read about the conditions described below.

**The Big 10 clinical presentations (above) and diagnoses listed below represent a listing of conditions that you should prioritize in your learning. It is not inclusive of all diagnoses/conditions to learn.**

For each of the conditions listed below, the student should be able to define/describe:

- Illness script (IS)- one way that experts store information (as chunks) about medical conditions in long term memory that enables them to store and readily retrieve that information
  - An Illness Script includes:
    - Who gets the condition? Predisposing factors
    - How does it present? Clinical manifestations- defining,
      - With regard to symptoms, signs, study results
      - Temporal aspects of the presentation- onset, course of the condition
      - Core pathophysiology
    - Differential diagnosis
    - Evaluation/Diagnosis- which tests to order, when to order, how to interpret
    - Initial management
    - Prognosis
    - Prevention

Keep in mind that many conditions may present in several different ways (e.g. pulmonary embolus may present with chest pain, dyspnea, syncope). The listing that follows is designed to help you organize these conditions; the categories are not mutually exclusive.

**High Priority “Diagnoses” and Problems- See as many as possible and read about these problems**

**Chest pain**
- **Diagnostic Imperatives**
  - Acute coronary syndromes
  - Pulmonary embolism
- Aortic dissection
- Effort rupture of the esophagus (Boerhaave syndrome)
- Tension pneumothorax

- **Common causes of isolated chest pain:**
  - Chronic coronary disease/angina
  - GI causes (esp. GERD, esophageal motility/spasm, peptic ulcer disease)
  - Musculoskeletal (e.g., localized, non-rheumatologic syndromes like costochondritis)
  - Psychological causes/triggers (panic disorder, depression)
  - Unexplained chest pain

- **Other**
  - Pericarditis

**Dyspnea**
- COPD
- Heart failure
- Asthma
- Pneumonia
- Interstitial lung disease
- Pleural effusion

**Fever**
- Bacteremia
- Clostridium difficile
- Endocarditis
- HIV- primary infection and opportunistic infections/cancers suggested by CD 4 count
- Malaria
- Meningitis/encephalitis
- Noninfectious cause
- Pneumonia
- qSOFA/SIRS/Sepsis/Severe Sepsis, is this septic shock or not?
- Skin and soft tissue infections/cellulitis
- Spontaneous bacterial peritonitis
- Tuberculosis
- Urinary tract infection

**Anemia**
- Fe deficiency
- Anemia of chronic disease (inflammation)
- B12, folate deficiency
- Acute blood loss
- Glucose-6-Phosphatase deficiency –G6PD
- Thalassemias
- DIC- microangiopathic hemolytic anemias
• Sickle cell trait/disease

Kidney injury
• Acute kidney injury
  o Prerenal
    • Hypovolemia
    • Heart failure
    • Cirrhosis with ascites
  o Intrinsic renal
    • Glomerular disease
    • Acute tubular necrosis
    • Contrast nephropathy
    • Allergic interstitial nephritis
  o Post-renal causes

Acid-base/electrolyte disorders
• Acid-base
  o Metabolic acidosis
    • Increased anion gap conditions
    • Normal anion gap conditions
  o Metabolic alkalosis
    • Contraction
    • Vomiting
    • Renal acid loss
  o Respiratory acidosis
  o Respiratory alkalosis
• Electrolytes
  o Hyponatremia
    • Hypovolemia, osmotic diuresis
    • Diuretic induced
    • SIADH
    • Adrenal insufficiency
    • Edematous states – Heart failure, cirrhosis, nephrotic syndrome
    • Renal: Acute and chronic kidney disease
  o Hypernatremia
    • Unreplaced water loss -involves loss of thirst or ability to access water
    • Decreased total body water and sodium; relatively more TBW loss than sodium: GI loss, skin loss, renal loss (diuretics, osmotic diuresis)
    • Increased sodium with normal total body water: hypertonic saline, NaHCO3 administration, mineralocorticoid excess
  o Hypokalemia
    • Reduced intake
- Increased entry into cells
- Increased GI loss
- Increased urinary loss
  - Diuretic
  - Mineralocorticoid excess
  - Hypomagnesemia

- Hyperkalemia
  - Increased K intake: oral, IV (blood transfusion, IVF, TPN)
  - Increased K release from cells
    - Pseudohypokalemia
    - Increased catabolism- tumor lysis
    - Metabolic acidosis
    - Drugs
    - Insulin deficiency (DM)
  - Reduced urinary K excretion
    - Acute and chronic kidney disease
    - Reduced secretion or response to aldosterone (ACEI/ARBs and other drugs, type 4 RTA)

- Hypocalcemia
  - Hypoparathyroidism
  - Vitamin D deficiency
  - Renal insufficiency
  - Medications
  - Hypomagnesemia

- Hypercalcemia
  - PTH dependent: Hyperparathyroidism
  - PTH independent:
    - Malignancy
    - Granulomatous disease- e.g. sarcoidosis
    - Medications – e.g. thiazides, Vitamin D intoxication, calcium

Other High Priority Conditions that do not fit neatly under one of the Big 10 categories
- Arrhythmia with emphasis on atrial fibrillation, supraventricular tachycardias, ventricular tachycardia, heart block
- Diabetes- with emphasis on basic inpatient management of DM2, diabetic ketoacidosis, hyperosmotic hyperglycemic nonketotic state (HHNK)
- Hypertensive urgency/emergency
- Hypoxia- mechanisms, approach to…, common causes
- Substance abuse/overdose/withdrawal with emphasis on ethanol, opiates, cocaine
- Volume depletion

High priority components of the physical exam include:
Cardiovascular
Chest/Lung
Volume assessment

Types of Patients/”Diagnoses”- The Next Tier
In addition to the requirements above, we encourage you to see and read about patients with as many of the following problems, clinical conditions, socio-demographics or learning opportunities listed below:

- Acute joint pain and swelling with emphasis on crystal-induced and infectious causes
- Abdominal pain- Approach to…
- Altered mental status - e.g. confusion, delirium, dementia
- Amyloidosis
- Cancer (common solid or blood-borne)- e.g. Lung, breast, colorectal, prostate, Chronic lymphocytic leukemia, multiple myeloma
- Cough
- Chronic kidney disease
- Diarrhea- Approach to… common causes
- Gastrointestinal bleed- peptic ulcer disease, portal hypertension
- Infections
  - Due to resistant organisms- e.g., staphylococcus
  - Antibiotic stewardship
  - Immunocompromised states
  - Nosocomial infections- including pneumonia, intravascular catheter infection
  - Liver Disease- emphasizing cirrhosis and its complications
  - Pain management- approach to …
  - Rash- approach to…
  - Sarcoidosis
  - Syncope- approach to… common causes
  - Systemic sclerosis (scleroderma)
  - Urinary tract infection- upper tract, complicated UTI
  - Valvular disease with emphasis on aortic stenosis, mitral regurgitation, tricuspid regurgitation