Yale SCHOOL OF MEDICINE

MD PROGRAM
Competencies, Educational Program Objectives, and Milestones

Overview

The Yale School of Medicine (YSM) competencies frame our goals for the knowledge, skills, and attributes that we aim for YSM MD students to attain prior to graduation. The associated educational program objectives (EPOs) describe the components of each competency and guide our curricular learning objectives.

Below we list our nine competencies. Under each one, we describe the associated EPOs, followed by measurable or observable milestones, which students should demonstrate by the end of each phase of their medical education: pre-clerkship, clerkship, and advanced training period (ATP). At the end of each EPO, we have a critical deficiency heading. If a student exhibits these behaviors, they will require additional support and remediation to help them achieve the milestones for that EPO.

We have developed this guide as a tool for students, longitudinal coaches, academic advisors, and other faculty to help students track their progress as they move through the curriculum, and ensure they graduate with all nine competencies.

NINE COMPETENCIES

- Health Promotion & Disease Prevention

- Clinical Reasoning

- Mechanisms and Treatment of Disease

- Patient Care

- Professional Identity Formation

- Communication

- Responsibility to Society

- Creation and Dissemination of Knowledge
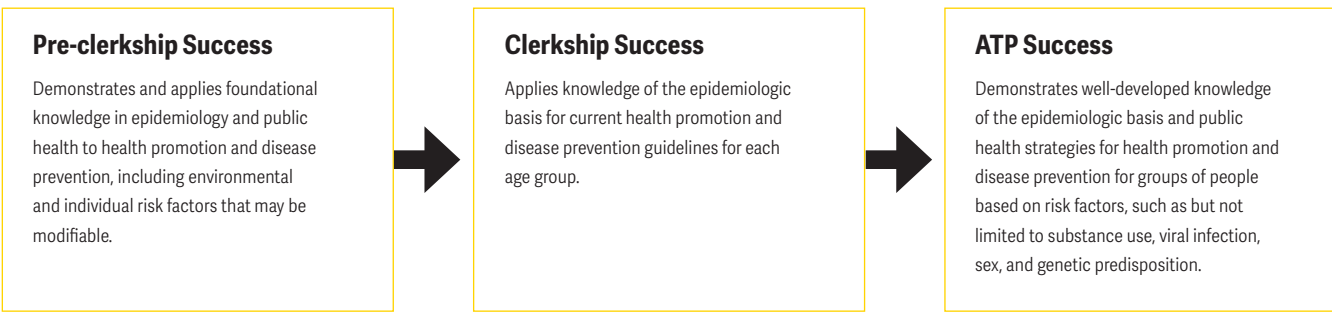
- Physician as Scientist

Yale SCHOOL OF MEDICINE

Health Promotion and Disease Prevention

Students apply scientific knowledge and use clinical skills to promote health and prevent disease in individuals and communities.

HP1.1 Educational Program Objective

Apply principles of epidemiology and social-behavioral sciences to health promotion and disease prevention for patients and communities.

Pre-clerkship Success	Clerkship Success	ATP Success
Demonstrates and applies foundational knowledge in epidemiology and public health to health promotion and disease prevention, including environmental and individual risk factors that may be modifiable.	Applies knowledge of the epidemiologic basis for current health promotion and disease prevention guidelines for each age group.	Demonstrates well-developed knowledge of the epidemiologic basis and public health strategies for health promotion and disease prevention for groups of people based on risk factors, such as but not limited to substance use, viral infection, sex, and genetic predisposition.

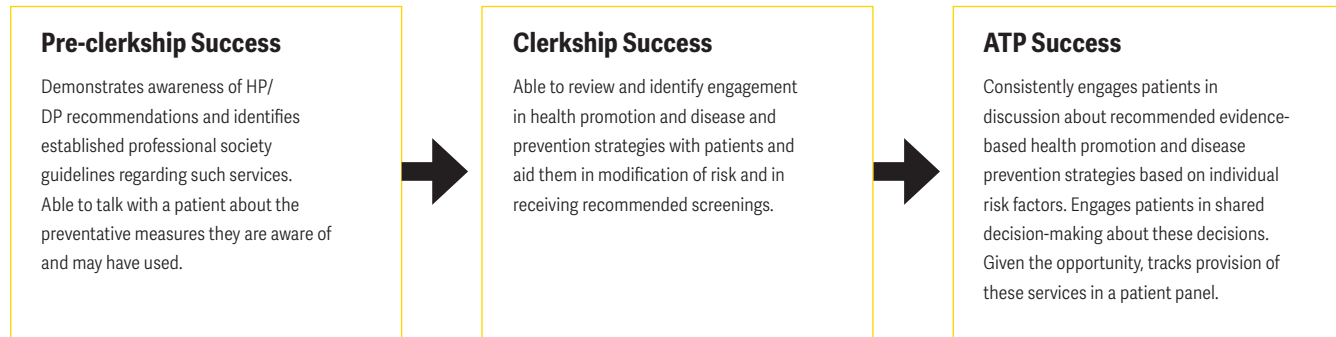**Critical Deficiencies**

Very limited knowledge and unaware of the importance of these population sciences in identifying health promotion and disease prevention (HP/DP). Makes little effort to identify and close gaps.

HP1.2 Educational Program Objective

Provide health care services to patients, families, and communities aimed at preventing health problems or maintaining health, including screening, counseling, immunizations, and chemoprophylaxis.

Pre-clerkship Success

Demonstrates awareness of HP/DP recommendations and identifies established professional society guidelines regarding such services. Able to talk with a patient about the preventative measures they are aware of and may have used.

Clerkship Success

Able to review and identify engagement in health promotion and disease and prevention strategies with patients and aid them in modification of risk and in receiving recommended screenings.

ATP Success

Consistently engages patients in discussion about recommended evidence-based health promotion and disease prevention strategies based on individual risk factors. Engages patients in shared decision-making about these decisions. Given the opportunity, tracks provision of these services in a patient panel.
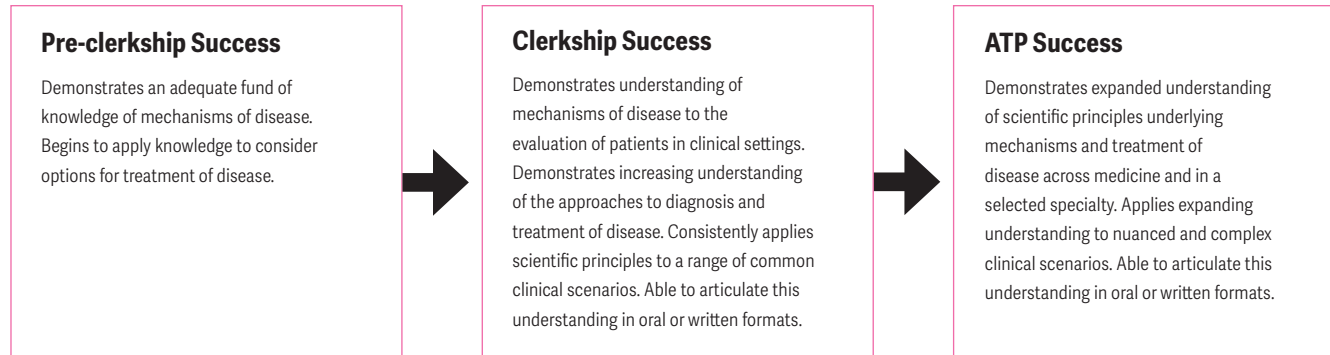
Critical Deficiencies

Unaware of the health promotion / disease prevention (HP/DP) maneuvers recommended for their patients. Does not consult guidelines or other information resources.

COMPETENCY

Mechanisms and Treatment of Disease

Students acquire knowledge at the molecular, cellular, organ-system, whole body, and psychosocial levels, and integrate this knowledge with clinical science and skills to diagnose and treat disease.

MTD2.1 Educational Program Objective

Apply established and emerging bio-physical, clinical, epidemiologic, and psychosocial scientific principles to the provision of health care for patients, including identification of disease, diagnosis, disease frequency, risk factors, prognosis, and treatment strategies.

Pre-clerkship Success

Demonstrates an adequate fund of knowledge of mechanisms of disease. Begins to apply knowledge to consider options for treatment of disease.

Clerkship Success

Demonstrates understanding of mechanisms of disease to the evaluation of patients in clinical settings. Demonstrates increasing understanding of the approaches to diagnosis and treatment of disease. Consistently applies scientific principles to a range of common clinical scenarios. Able to articulate this understanding in oral or written formats.

ATP Success

Demonstrates expanded understanding of scientific principles underlying mechanisms and treatment of disease across medicine and in a selected specialty. Applies expanding understanding to nuanced and complex clinical scenarios. Able to articulate this understanding in oral or written formats.
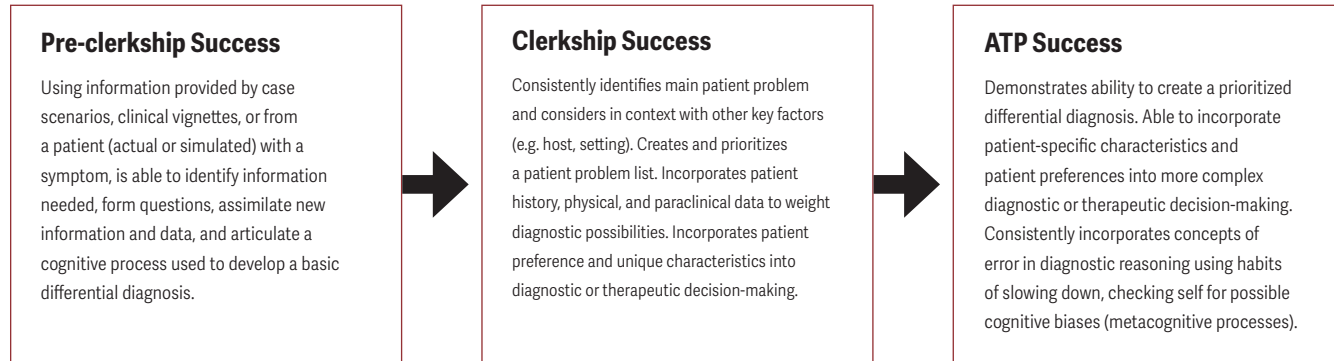
Critical Deficiencies

Unable to demonstrate sufficient knowledge in medical sciences. May lack awareness of these gaps. Does not apply knowledge to care for patients.

COMPETENCY

Clinical Reasoning

Students apply established and emerging principles of clinical sciences to diagnostic and therapeutic decision-making and clinical problem-solving based on a thorough understanding of the patient's history, physical exam, and diagnostic studies.

CR3.1 Educational Program Objective

Apply established and emerging principles of clinical sciences to diagnostic and therapeutic decision-making and clinical problem-solving, based on patient information and preferences and up-to-date scientific evidence while minimizing the impact of cognitive errors. Recognize that uncertainty is part of clinical health care and respond by utilizing appropriate resources.

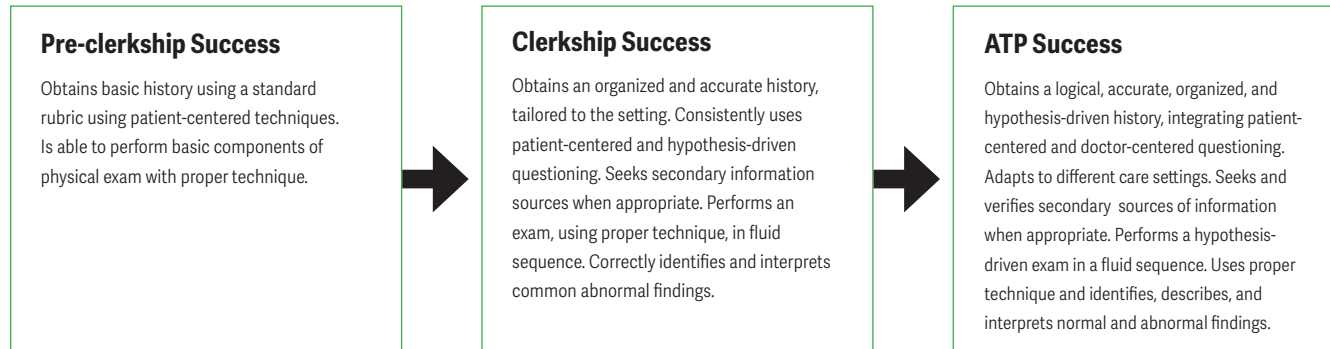| Pre-clerkship Success	Clerkship Success	ATP Success
Using information provided by case scenarios, clinical vignettes, or from a patient (actual or simulated) with a symptom, is able to identify information needed, form questions, assimilate new information and data, and articulate a cognitive process used to develop a basic differential diagnosis.	Consistently identifies main patient problem and considers in context with other key factors (e.g. host, setting). Creates and prioritizes a patient problem list. Incorporates patient history, physical, and paraclinical data to weight diagnostic possibilities. Incorporates patient preference and unique characteristics into diagnostic or therapeutic decision-making.	Demonstrates ability to create a prioritized differential diagnosis. Able to incorporate patient-specific characteristics and patient preferences into more complex diagnostic or therapeutic decision-making. Consistently incorporates concepts of error in diagnostic reasoning using habits of slowing down, checking self for possible cognitive biases (metacognitive processes).

Critical Deficiencies

Disregards patient preferences. Cannot gather or synthesize data to inform an acceptable diagnosis. Lacks basic medical knowledge to reason effectively. Develops and acts on a management plan before receiving team's endorsement. Cannot explain or document clinical reasoning.

COMPETENCY

Patient Care

Students achieve competency in the care of patients at a level required to excel in residency.

PC4.1 Educational Program Objective

Gather and interpret essential and accurate information about patients and their conditions through history-taking, physical examination, and paraclinical data (lab studies, imaging, and other tests).

Pre-clerkship Success	Clerkship Success	ATP Success
Obtains basic history using a standard rubric using patient-centered techniques. Is able to perform basic components of physical exam with proper technique.	Obtains an organized and accurate history, tailored to the setting. Consistently uses patient-centered and hypothesis-driven questioning. Seeks secondary information sources when appropriate. Performs an exam, using proper technique, in fluid sequence. Correctly identifies and interprets common abnormal findings.	Obtains a logical, accurate, organized, and hypothesis-driven history, integrating patient-centered and doctor-centered questioning. Adapts to different care settings. Seeks and verifies secondary sources of information when appropriate. Performs a hypothesis-driven exam in a fluid sequence. Uses proper technique and identifies, describes, and interprets normal and abnormal findings.

Critical Deficiencies

Collects inaccurate or incomplete historical data. May rely exclusively on secondary sources or documentation of others. Disregards patient privacy, comfort, and autonomy. Fails to perform or incorrectly performs basic physical exam maneuvers.

PC4.2 Educational Program Objective

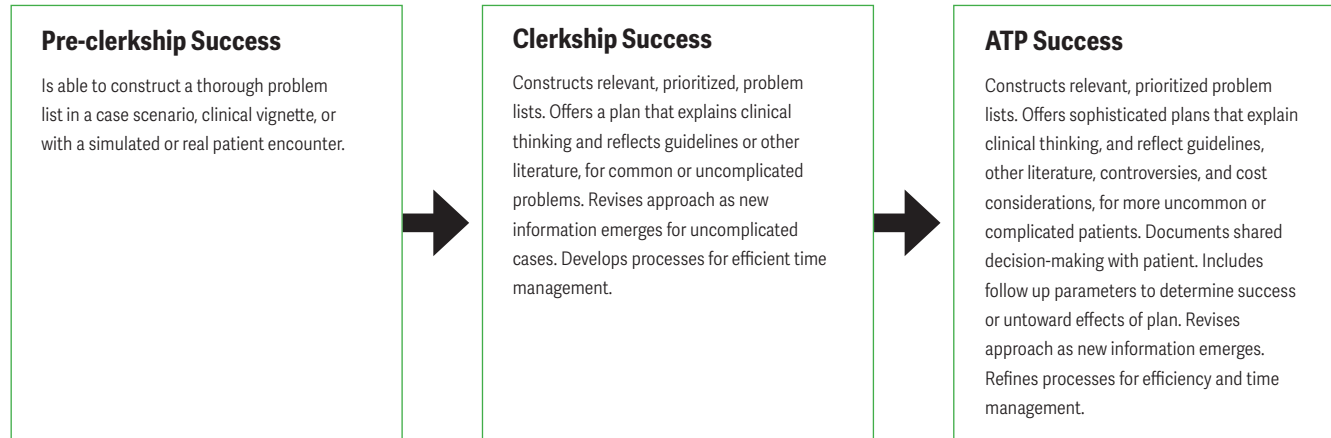Communicate patient information in an organized and concise manner in both oral and written forms.

Pre-clerkship Success

Able to present a patient's history of present illness, past medical history, family, and social history, medication list, allergies, and physical exam, and provide brief summary with a rudimentary differential diagnosis. Uses accepted template for written note including the components above.

Clerkship Success

Delivers a presentation organized around the chief concern. Works to adjust presentation in length and complexity to match situation and receiver of information. Documents an assessment and plan that includes differential diagnosis, problem list, and relevant clinical reasoning.

ATP Success

Filters, synthesizes, and prioritizes information into a concise and organized presentation. Integrates pertinent positives and negatives to support hypothesis. Tailors presentation to situation and receiver. Conveys appropriate self-assurance to put patient at ease. Provides a verifiable, cogent, accurate, timely written narrative that includes institutionally required elements. Includes input from other providers.

Critical Deficiencies

Provides inaccurate information in oral presentation. Fabricates information when unable to respond to questions. Presents in a disorganized and incoherent fashion. Presents at bedside in a manner that upsets patient or family. Written notes include major omissions and/or inaccurate information, may include inappropriate language, and may not be timely. Copies information without verification or attribution.

PC4.3 Educational Program Objective

Develop and carry out patient management plans in an organized and prioritized manner to promote patient care that is safe, effective, and efficient. Follow up on patient progress.

Pre-clerkship Success

Is able to construct a thorough problem list in a case scenario, clinical vignette, or with a simulated or real patient encounter.

Clerkship Success

Constructs relevant, prioritized, problem lists. Offers a plan that explains clinical thinking and reflects guidelines or other literature, for common or uncomplicated problems. Revises approach as new information emerges for uncomplicated cases. Develops processes for efficient time management.

ATP Success

Constructs relevant, prioritized problem lists. Offers sophisticated plans that explain clinical thinking, and reflect guidelines, other literature, controversies, and cost considerations, for more uncommon or complicated patients. Documents shared decision-making with patient. Includes follow up parameters to determine success or untoward effects of plan. Revises approach as new information emerges. Refines processes for efficiency and time management.

Critical Deficiencies

Does not construct a coherent problem list or plan. Disregards team input regarding patient management.

PC4.4 Educational Program Objective

Coordinate care with physicians, other health professionals, and health agencies to support the health maintenance and treatment of disease in patients. Make timely, appropriate, and informative referrals or handoffs, ensuring continuity of care through transitions between providers or settings.

Pre-clerkship Success

Appreciates importance of care coordination within or across the health care system and the roles of other health professionals in the care of patients. Is able to suggest the types of services and expertise that may benefit patients.

Clerkship Success

Contributes to coordination of care for patients within or across the health care system or community. Under close supervision, may take a lead role. Understands the elements of effective handoffs and may hand off patients under immediate supervision.

ATP Success

Coordinates care within and across health care systems or community. Makes appropriate referrals, providing consultants with specific questions and pertinent information. Handoffs include accurate assessment of patient status, anticipatory guidance, contingencies, and question solicitation. Follows through to ensure safe transitions.

Critical Deficiencies

Disregards need to coordinate care and does not follow through on transition planning.

PC4.5 Educational Program Objective

Perform all medical, diagnostic, and surgical procedures considered essential to enter residency in the area of chosen practice.

Pre-clerkship Success

Understands the anatomic considerations for common procedures; is able to perform basic life support maneuvers.

Clerkship Success

Understands indications, risks, and benefits for common procedures. Understands elements of informed consent and takes part in these discussions. Under direct supervision, performs common, simple, procedures using proper technique.

ATP Success

Understands the indications, risks, and benefits for wider range of procedures. Under direct supervision, conducts informed consent discussion with patients and families and performs procedures related to selected specialty. Follows up to monitor for complications.
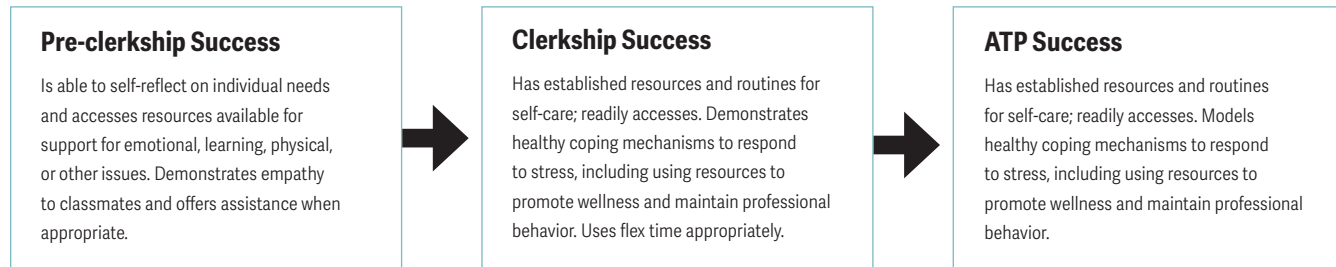
Critical Deficiencies

Does not know the indications, risks, benefits, or techniques for procedures. Unable to discuss informed consent with patients or families.

COMPETENCY

Professional Identity Formation

Students conduct themselves in accordance with professional standards in interactions with patients, families, peers, and colleagues. They learn to prioritize patients' needs and interests, avoid conflicts of interest, keep current with evolving science and practice standards, defer to ethical principles in difficult decision-making, and engage in self-awareness and self-care.

PR5.1 Educational Program Objective

Engage in practices that benefit mental and physical wellness. Cultivate self-awareness to guide appropriate self-care. Recognize stressful situations and explore coping mechanisms best suited for them. Aware of range of support services and reach out for help when needed. Recognize distress in others and offer assistance.

Pre-clerkship Success	**Clerkship Success**	**ATP Success**
Is able to self-reflect on individual needs and accesses resources available for support for emotional, learning, physical, or other issues. Demonstrates empathy to classmates and offers assistance when appropriate.	Has established resources and routines for self-care; readily accesses. Demonstrates healthy coping mechanisms to respond to stress, including using resources to promote wellness and maintain professional behavior. Uses flex time appropriately.	Has established resources and routines for self-care; readily accesses. Models healthy coping mechanisms to respond to stress, including using resources to promote wellness and maintain professional behavior.

Critical Deficiencies

Unable to self-reflect; uses unhealthy coping mechanisms to respond to stress.

PR5.2 Educational Program Objective

Maintain commitment to lifelong learning. Identify and perform learning activities that address strengths, deficiencies, and limits in knowledge and expertise. Set learning and improvement goals and incorporate feedback into daily practice.

Pre-clerkship Success

Self-assesses and reflects on feedback with coaches/advisors to monitor progress and develop strategies to reach milestones and attain competency.

Clerkship Success

Takes individual responsibility for learning. Routinely asks for and incorporates feedback. Routinely self-assesses in competency domains and collaborates to set goals based on self-assessment and feedback by supervisors.

ATP Success

Takes individual responsibility for learning. Routinely asks for and incorporates feedback, able to effectively provide constructive feedback to others. Routinely self-assesses in competency domains and collaborates to set goals based on self-assessment and feedback by supervisors.
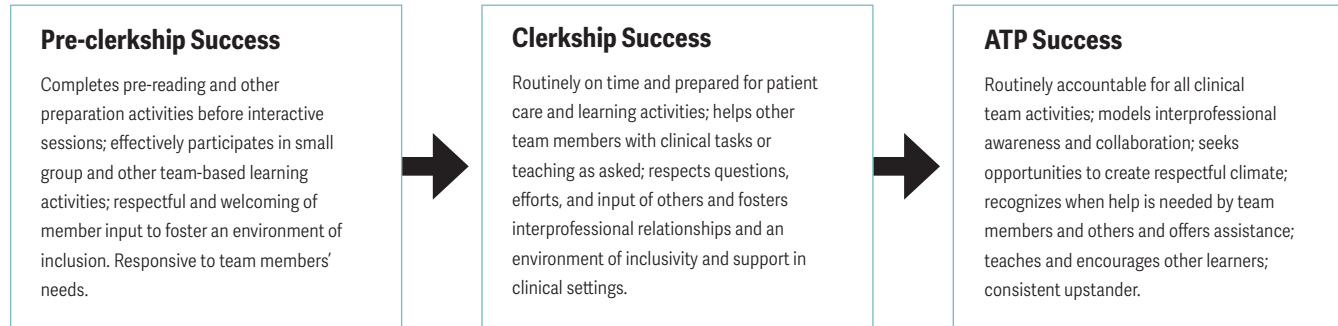
Critical Deficiencies

Unable to accept constructive feedback; refuses to accept that students have blind spots. Does not meet with mentors or coaches to develop strategies. Does not value the benefit of recognizing personal values and/or implicit or explicit biases.

PR5.3 Educational Program Objective

Work effectively as an accountable team member to enhance team functioning, the learning environment, and/or the health care setting. Contribute to a culture of psychological safety rooted in mutual respect and trust.

Pre-clerkship Success

Completes pre-reading and other preparation activities before interactive sessions; effectively participates in small group and other team-based learning activities; respectful and welcoming of member input to foster an environment of inclusion. Responsive to team members' needs.

Clerkship Success

Routinely on time and prepared for patient care and learning activities; helps other team members with clinical tasks or teaching as asked; respects questions, efforts, and input of others and fosters interprofessional relationships and an environment of inclusivity and support in clinical settings.

ATP Success

Routinely accountable for all clinical team activities; models interprofessional awareness and collaboration; seeks opportunities to create respectful climate; recognizes when help is needed by team members and others and offers assistance; teaches and encourages other learners; consistent upstander.
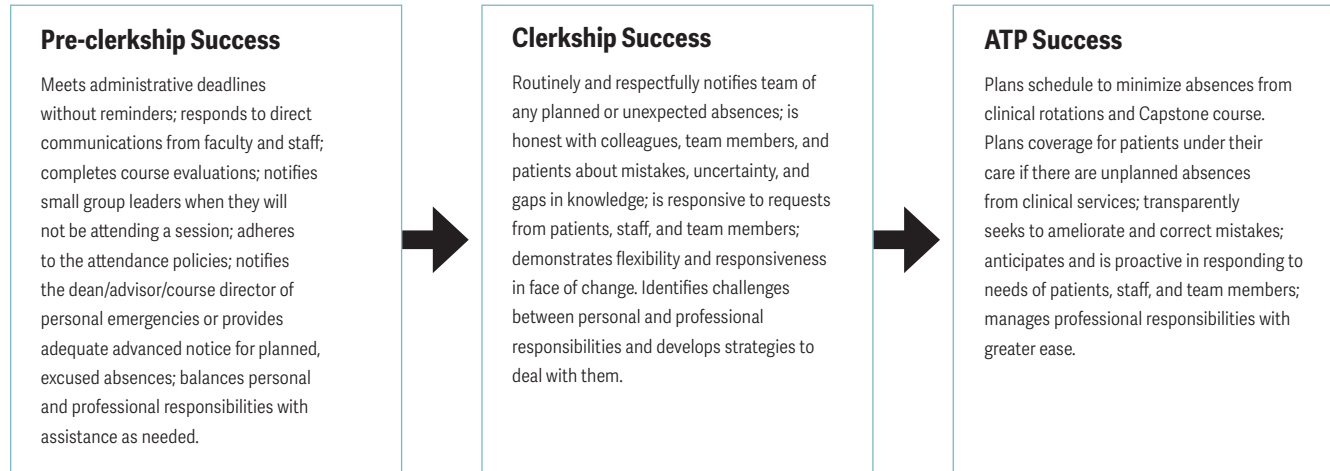
Critical Deficiencies

Does not attend and/or participate in activities that depend on team members; is frequently late or unprepared for small group sessions, team rounds, or prep activities in clinical settings; may engage in behaviors that belittle or demean others.

PR5.4 Educational Program Objective

Demonstrate honesty, responsiveness, integrity, and respect to patients, society, and the profession. Manage conflict between personal and professional responsibilities. Practice flexibility and maturity in adjusting to change with the capacity to alter one's behavior.

Pre-clerkship Success

Meets administrative deadlines without reminders; responds to direct communications from faculty and staff; completes course evaluations; notifies small group leaders when they will not be attending a session; adheres to the attendance policies; notifies the dean/advisor/course director of personal emergencies or provides adequate advanced notice for planned, excused absences; balances personal and professional responsibilities with assistance as needed.

Clerkship Success

Routinely and respectfully notifies team of any planned or unexpected absences; is honest with colleagues, team members, and patients about mistakes, uncertainty, and gaps in knowledge; is responsive to requests from patients, staff, and team members; demonstrates flexibility and responsiveness in face of change. Identifies challenges between personal and professional responsibilities and develops strategies to deal with them.

ATP Success

Plans schedule to minimize absences from clinical rotations and Capstone course. Plans coverage for patients under their care if there are unplanned absences from clinical services; transparently seeks to ameliorate and correct mistakes; anticipates and is proactive in responding to needs of patients, staff, and team members; manages professional responsibilities with greater ease.
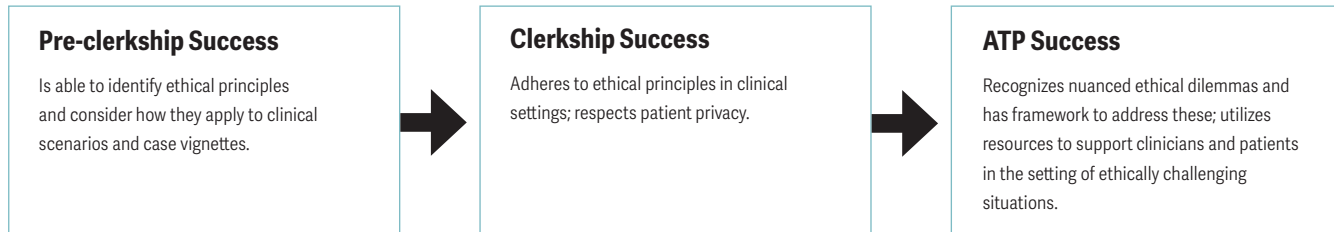
Critical Deficiencies

Does not attend to professional responsibilities, including administrative and clinical. Makes poor decisions regarding personal and professional conflicts.

PR5.5 Educational Program Objective

Demonstrate a commitment to ethical principles pertaining to provision or withholding of care, confidentiality, informed consent, and business practices, including committing to uphold relevant laws, policies, and regulations which promote patient privacy and autonomy.

Pre-clerkship Success

Is able to identify ethical principles and consider how they apply to clinical scenarios and case vignettes.

Clerkship Success

Adheres to ethical principles in clinical settings; respects patient privacy.

ATP Success

Recognizes nuanced ethical dilemmas and has framework to address these; utilizes resources to support clinicians and patients in the setting of ethically challenging situations.

Critical Deficiencies

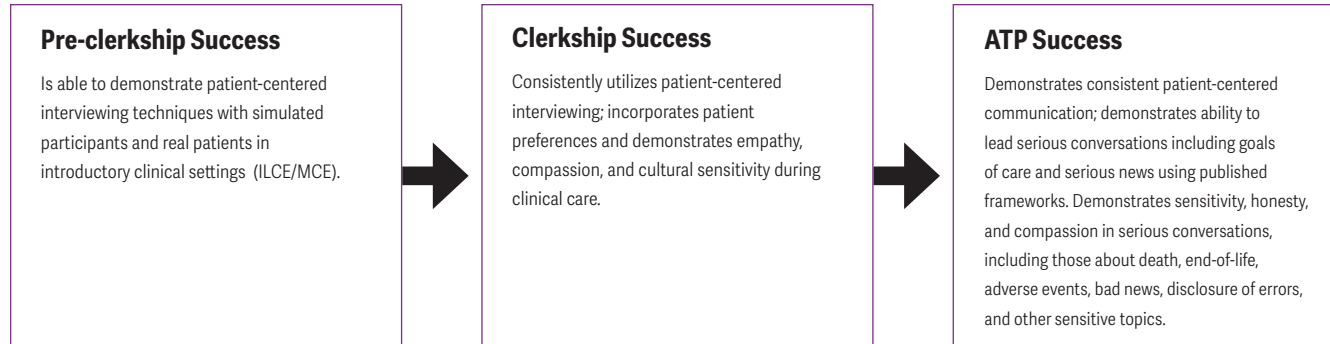Demonstrates unethical behavior such as breeching confidentiality, cheating on examinations; commits HIPAA violation.

COMPETENCY

Communication

Students communicate effectively, respectfully, and compassionately in all of their professional interactions.
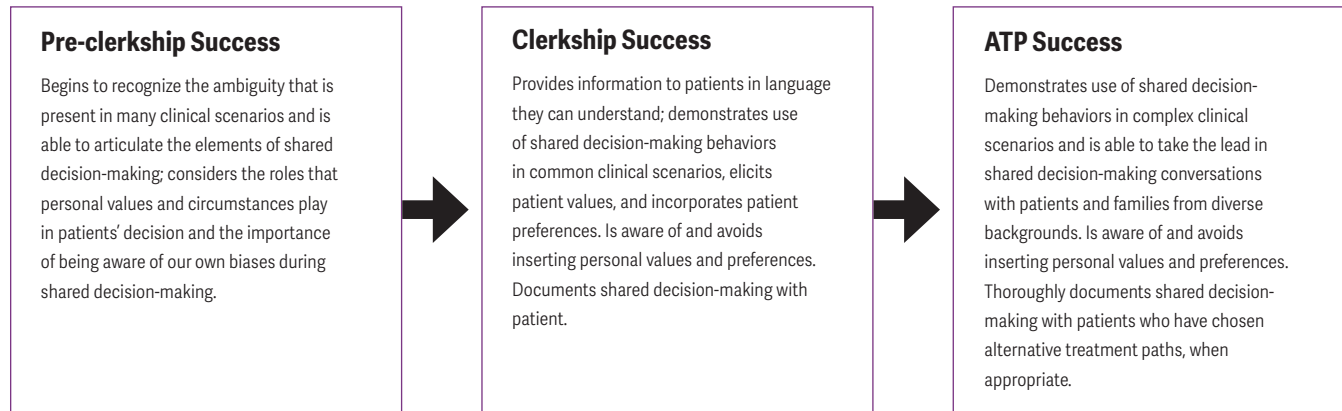
CM6.1 Educational Program Objective

Communicate effectively using patient-centered techniques, with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds. Demonstrate sensitivity, honesty, and compassion in serious conversations, including those about death, end-of-life, adverse events, bad news, disclosure of errors, and other sensitive topics.

Pre-clerkship Success	Clerkship Success	ATP Success
Is able to demonstrate patient-centered interviewing techniques with simulated participants and real patients in introductory clinical settings (ILCE/MCE).	Consistently utilizes patient-centered interviewing; incorporates patient preferences and demonstrates empathy, compassion, and cultural sensitivity during clinical care.	Demonstrates consistent patient-centered communication; demonstrates ability to lead serious conversations including goals of care and serious news using published frameworks. Demonstrates sensitivity, honesty, and compassion in serious conversations, including those about death, end-of-life, adverse events, bad news, disclosure of errors, and other sensitive topics.

Critical Deficiencies

Does not utilize patient-centered language; insensitive to cultural backgrounds; insensitive during crucial conversations; does not solicit patient participation.

CM6.2 Educational Program Objective

Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.

Pre-clerkship Success

Begins to recognize the ambiguity that is present in many clinical scenarios and is able to articulate the elements of shared decision-making; considers the roles that personal values and circumstances play in patients' decision and the importance of being aware of our own biases during shared decision-making.

Clerkship Success

Provides information to patients in language they can understand; demonstrates use of shared decision-making behaviors in common clinical scenarios, elicits patient values, and incorporates patient preferences. Is aware of and avoids inserting personal values and preferences. Documents shared decision-making with patient.

ATP Success

Demonstrates use of shared decision-making behaviors in complex clinical scenarios and is able to take the lead in shared decision-making conversations with patients and families from diverse backgrounds. Is aware of and avoids inserting personal values and preferences. Thoroughly documents shared decision-making with patients who have chosen alternative treatment paths, when appropriate.
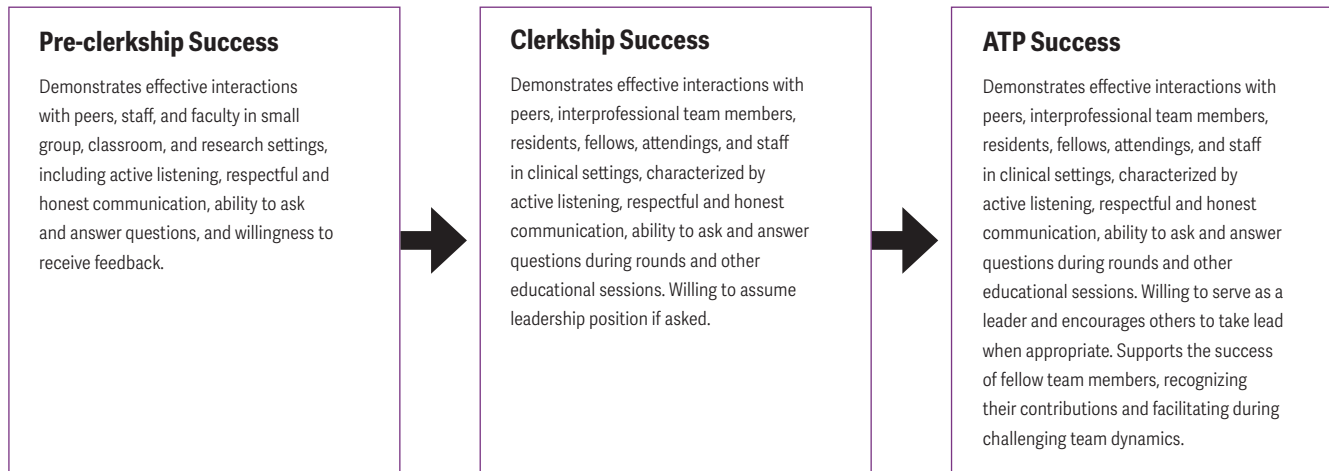
Critical Deficiencies

Unable to counsel or educate patient; dismisses utility of shared decision-making.

CM6.3 Educational Program Objective

Communicate effectively and respectfully with peers, staff, interprofessional colleagues, and faculty in classroom, clinical, and administrative domains.

Pre-clerkship Success

Demonstrates effective interactions with peers, staff, and faculty in small group, classroom, and research settings, including active listening, respectful and honest communication, ability to ask and answer questions, and willingness to receive feedback.

Clerkship Success

Demonstrates effective interactions with peers, interprofessional team members, residents, fellows, attendings, and staff in clinical settings, characterized by active listening, respectful and honest communication, ability to ask and answer questions during rounds and other educational sessions. Willing to assume leadership position if asked.

ATP Success

Demonstrates effective interactions with peers, interprofessional team members, residents, fellows, attendings, and staff in clinical settings, characterized by active listening, respectful and honest communication, ability to ask and answer questions during rounds and other educational sessions. Willing to serve as a leader and encourages others to take lead when appropriate. Supports the success of fellow team members, recognizing their contributions and facilitating during challenging team dynamics.

Critical Deficiencies

Does not exhibit respectful or effective communication with peers, staff, and faculty (e.g. frequently interrupts others; communications misrepresent or distort information; participates minimally in small group discussion or seems limited in ability to articulate questions or responses in a discussion); communication is perceived by others as condescending, demeaning, or disdainful.
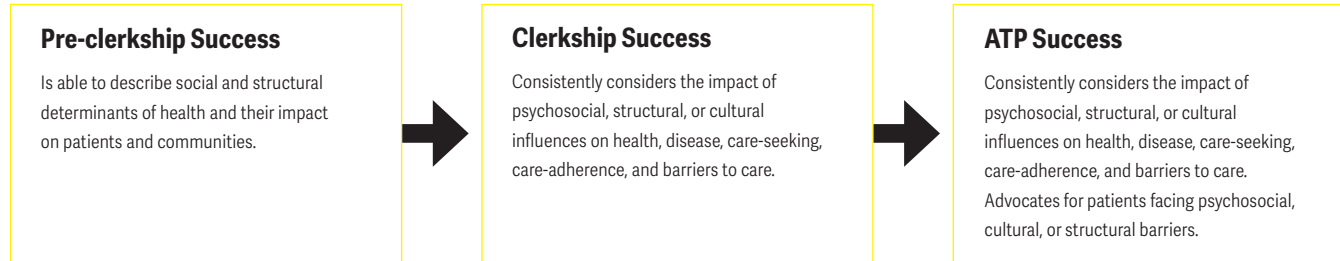
Responsibility to Society

Students recognize barriers to achieving health equity and envision ways to reduce barriers with a commitment to improving the quality of care and health of all people.

RS7.1 Educational Program Objective

Identify the social and structural determinants of health that impact patients and communities and utilize these in improving care, including assessment of the impact of psychosocial, structural, or cultural influences on health, disease, care-seeking, care adherence, and barriers to and attitudes toward care.

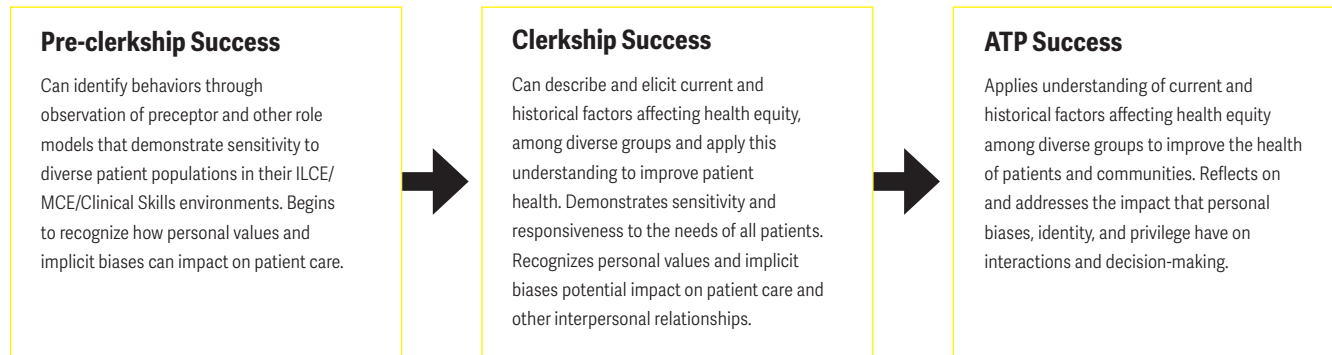| **Pre-clerkship Success**	**Clerkship Success**	**ATP Success**
Is able to describe social and structural determinants of health and their impact on patients and communities.	Consistently considers the impact of psychosocial, structural, or cultural influences on health, disease, care-seeking, care-adherence, and barriers to care.	Consistently considers the impact of psychosocial, structural, or cultural influences on health, disease, care-seeking, care-adherence, and barriers to care. Advocates for patients facing psychosocial, cultural, or structural barriers.

Critical Deficiencies

Underdeveloped knowledge base and very limited understanding of the psychosocial, structural, and cultural influences on heath. Does not apply social-behavior sciences to health care for patients and populations.

RS7.2 Educational Program Objective

Demonstrate sensitivity and responsiveness to diverse patient populations, including but not limited to gender, age, culture, race, religion, disabilities, and sexual orientation and leverage their role and the roles of other health professionals to appropriately assess and address the health care needs of the patients and populations served.
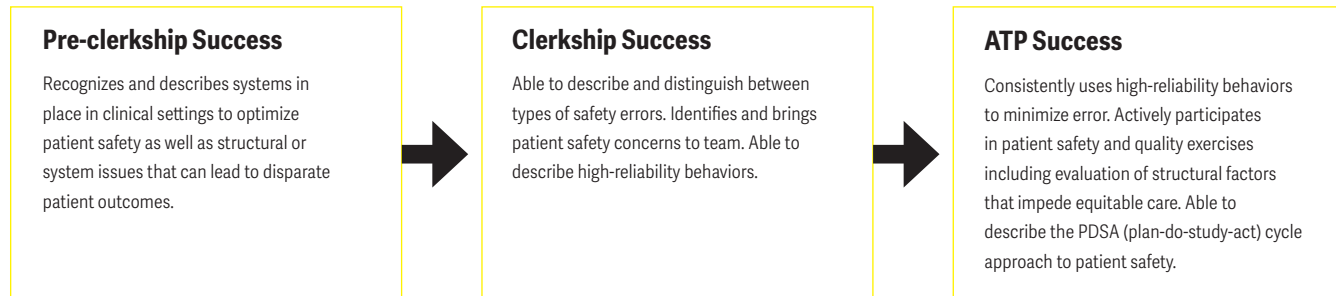
Pre-clerkship Success

Can identify behaviors through observation of preceptor and other role models that demonstrate sensitivity to diverse patient populations in their ILCE/MCE/Clinical Skills environments. Begins to recognize how personal values and implicit biases can impact on patient care.

Clerkship Success

Can describe and elicit current and historical factors affecting health equity, among diverse groups and apply this understanding to improve patient health. Demonstrates sensitivity and responsiveness to the needs of all patients. Recognizes personal values and implicit biases potential impact on patient care and other interpersonal relationships.

ATP Success

Applies understanding of current and historical factors affecting health equity among diverse groups to improve the health of patients and communities. Reflects on and addresses the impact that personal biases, identity, and privilege have on interactions and decision-making.

Critical Deficiencies

Demonstrates insensitivity or intolerant of views or backgrounds that do not match own view.

RS7.3 Educational Program Objective

Appreciate the factors that contribute to patient safety and the methods used to approach quality improvement. Participate in identifying system errors and implementing potential solutions. Advocate for quality and equity in patient care and optimal patient care systems.
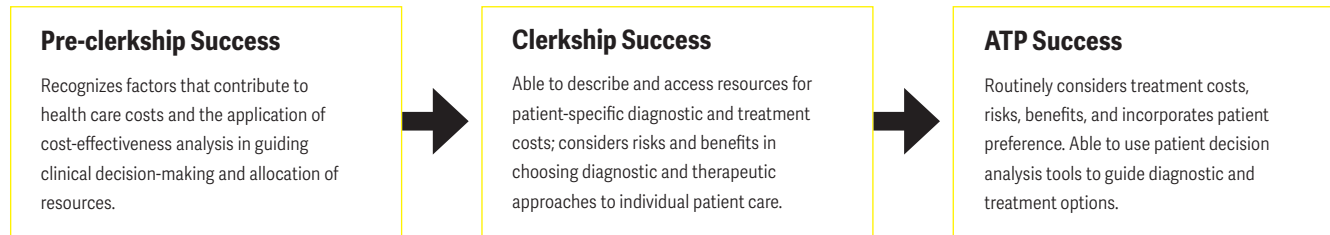
Pre-clerkship Success

Recognizes and describes systems in place in clinical settings to optimize patient safety as well as structural or system issues that can lead to disparate patient outcomes.

Clerkship Success

Able to describe and distinguish between types of safety errors. Identifies and brings patient safety concerns to team. Able to describe high-reliability behaviors.

ATP Success

Consistently uses high-reliability behaviors to minimize error. Actively participates in patient safety and quality exercises including evaluation of structural factors that impede equitable care. Able to describe the PDSA (plan-do-study-act) cycle approach to patient safety.

Critical Deficiencies

Disregards safety mechanisms in clinical environment. Actively undermines patient safety efforts.

RS7.4 Educational Program Objective

Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care.

Pre-clerkship Success

Recognizes factors that contribute to health care costs and the application of cost-effectiveness analysis in guiding clinical decision-making and allocation of resources.

Clerkship Success

Able to describe and access resources for patient-specific diagnostic and treatment costs; considers risks and benefits in choosing diagnostic and therapeutic approaches to individual patient care.

ATP Success

Routinely considers treatment costs, risks, benefits, and incorporates patient preference. Able to use patient decision analysis tools to guide diagnostic and treatment options.

Critical Deficiencies
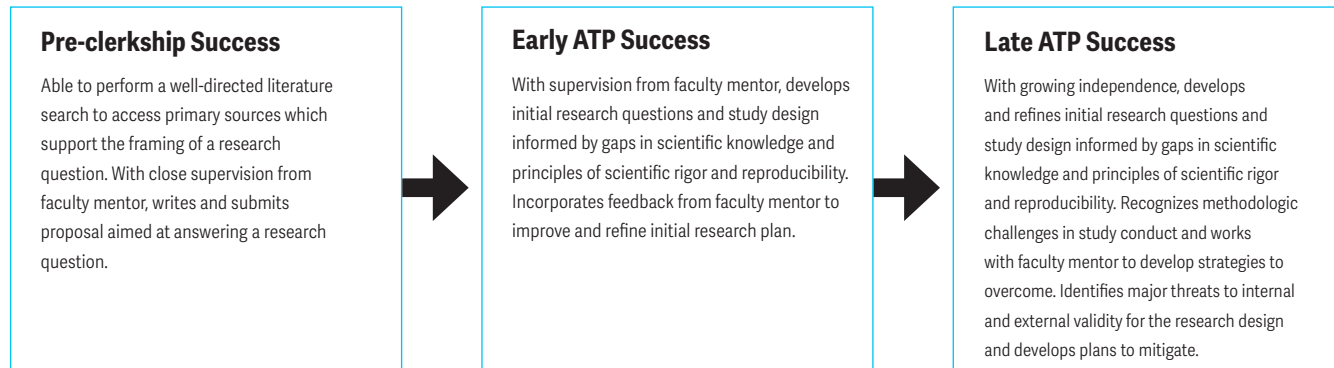
Does not understand concept of risk benefit analysis; disregards importance of cost and risk in the management of patients and/or populations.

Creation and Dissemination of Knowledge

Students appreciate that unexplained clinical observations can inspire research that advances the practice of medicine. They perform mentored scholarly research culminating in a formal thesis. This project promotes critical thinking, understanding of the scientific method, and contributes to new medical knowledge and practices.

CDK8.1 Educational Program Objective

Critically evaluate and use literature, databases, and primary sources to develop a strong scientific premise for a research question. Apply the scientific method to ensure robust, reproducible, and unbiased study design.

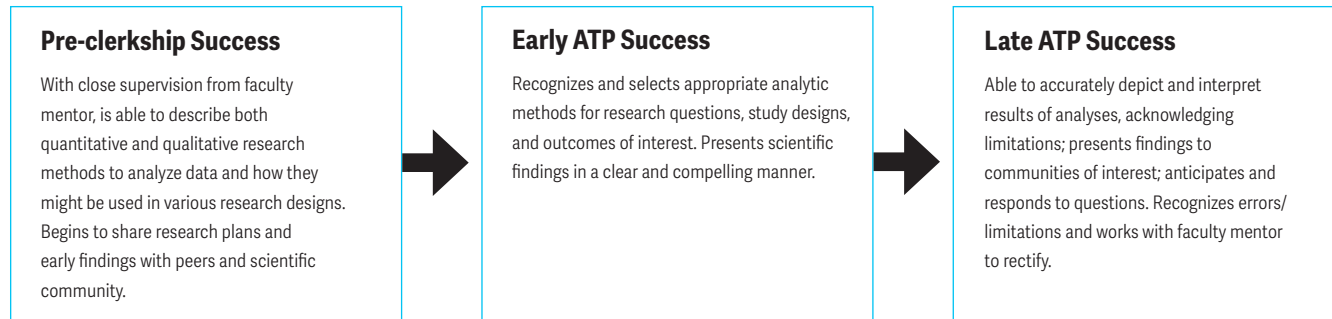| Pre-clerkship Success	Early ATP Success	Late ATP Success
Able to perform a well-directed literature search to access primary sources which support the framing of a research question. With close supervision from faculty mentor, writes and submits proposal aimed at answering a research question.	With supervision from faculty mentor, develops initial research questions and study design informed by gaps in scientific knowledge and principles of scientific rigor and reproducibility. Incorporates feedback from faculty mentor to improve and refine initial research plan.	With growing independence, develops and refines initial research questions and study design informed by gaps in scientific knowledge and principles of scientific rigor and reproducibility. Recognizes methodologic challenges in study conduct and works with faculty mentor to develop strategies to overcome. Identifies major threats to internal and external validity for the research design and develops plans to mitigate.

Critical Deficiencies

Cannot evaluate the literature to develop a premise for a concise and specific research question. Cannot develop robust, reproducible, and unbiased study designs.

CDK8.2 Educational Program Objective

Rigorously analyze and interpret data using appropriate scientific and statistical methods. Convey research findings in a clear and organized manner and disseminate to communities of interest.
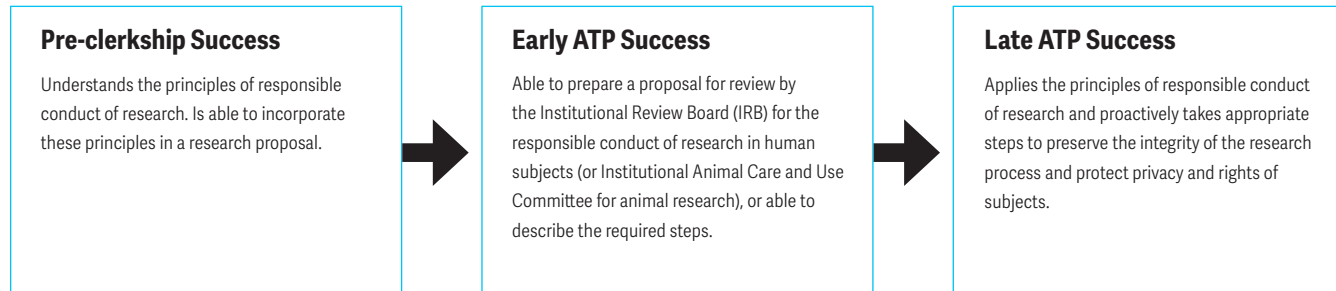
Pre-clerkship Success

With close supervision from faculty mentor, is able to describe both quantitative and qualitative research methods to analyze data and how they might be used in various research designs. Begins to share research plans and early findings with peers and scientific community.

Early ATP Success

Recognizes and selects appropriate analytic methods for research questions, study designs, and outcomes of interest. Presents scientific findings in a clear and compelling manner.

Late ATP Success

Able to accurately depict and interpret results of analyses, acknowledging limitations; presents findings to communities of interest; anticipates and responds to questions. Recognizes errors/limitations and works with faculty mentor to rectify.

Critical Deficiencies

Cannot choose appropriate statistical test nor interpret results. Presents scientific findings in confusing manner and is unprepared for questions.

CDK8.3 Educational Program Objective

Apply principles of responsible conduct of research to preserve the integrity of the research process and to protect the privacy and rights of research subjects.

Pre-clerkship Success

Understands the principles of responsible conduct of research. Is able to incorporate these principles in a research proposal.

Early ATP Success

Able to prepare a proposal for review by the Institutional Review Board (IRB) for the responsible conduct of research in human subjects (or Institutional Animal Care and Use Committee for animal research), or able to describe the required steps.

Late ATP Success

Applies the principles of responsible conduct of research and proactively takes appropriate steps to preserve the integrity of the research process and protect privacy and rights of subjects.

Critical Deficiencies

Does not adhere to principles of responsible conduct of research, preserve the integrity of the research process, and/or protect the privacy and rights of research subjects.
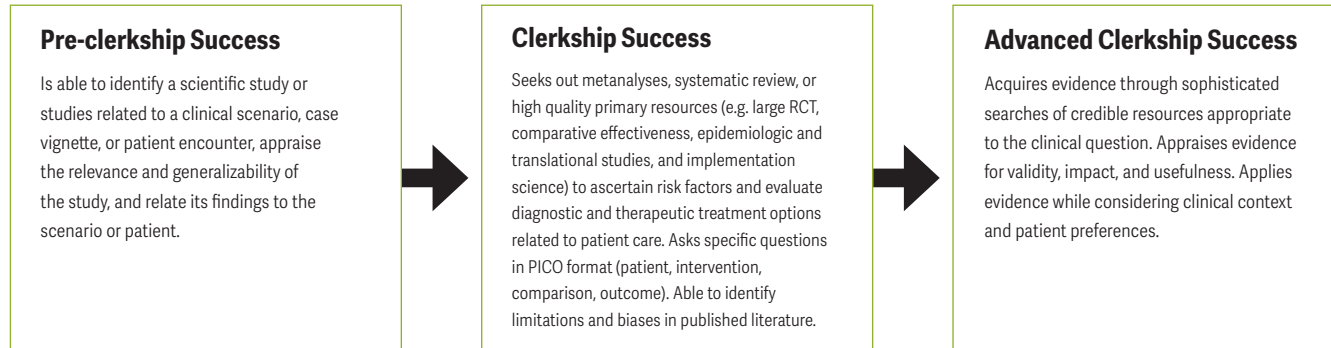
COMPETENCY

Physician as Scientist

Students apply existing and evolving scientific literature to inform their care of patients and promote the health of individuals and populations.
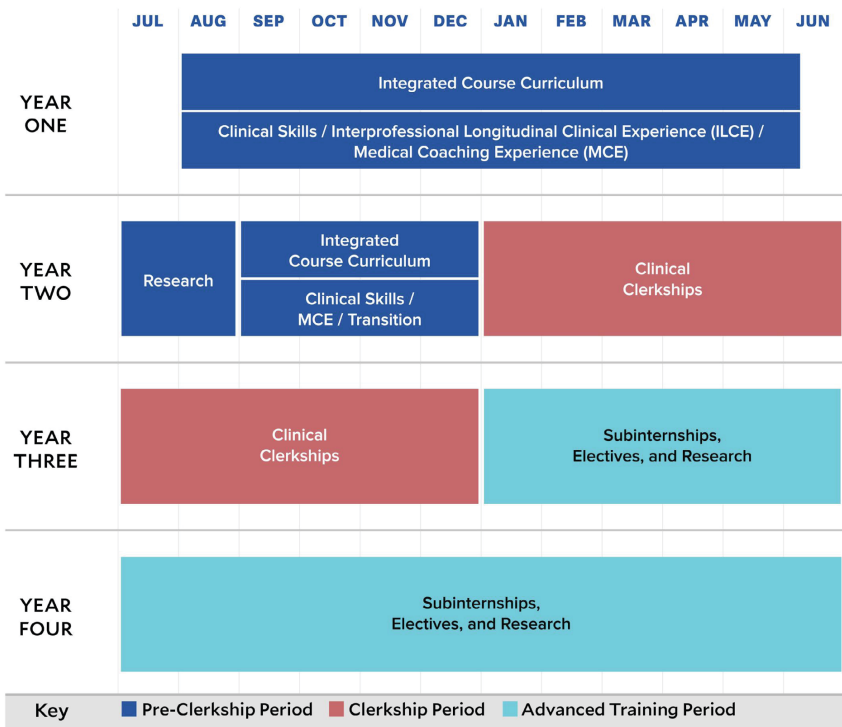
PS9.1 Educational Program Objective

Acquire, appraise, assimilate, and apply evidence from scientific studies related to patients' health problems. Demonstrate an investigatory and analytic approach to clinical situations. Evaluate the credibility and usability of the spectrum of medical information resources.

Pre-clerkship Success

Is able to identify a scientific study or studies related to a clinical scenario, case vignette, or patient encounter, appraise the relevance and generalizability of the study, and relate its findings to the scenario or patient.

Clerkship Success

Seeks out metanalyses, systematic review, or high quality primary resources (e.g. large RCT, comparative effectiveness, epidemiologic and translational studies, and implementation science) to ascertain risk factors and evaluate diagnostic and therapeutic treatment options related to patient care. Asks specific questions in PICO format (patient, intervention, comparison, outcome). Able to identify limitations and biases in published literature.

Advanced Clerkship Success

Acquires evidence through sophisticated searches of credible resources appropriate to the clinical question. Appraises evidence for validity, impact, and usefulness. Applies evidence while considering clinical context and patient preferences.

Critical Deficiencies

Does not identify, track, or pursue clinical questions arising in patient care or teaching. When prompted, cannot form specific clinical questions, search information resources based on questions, critically appraise evidence, nor apply evidence.

Curriculum Timeline

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
YEAR ONE		Integrated Course Curriculum										
		Clinical Skills / Interprofessional Longitudinal Clinical Experience (ILCE) / Medical Coaching Experience (MCE)										
YEAR TWO	Research	Integrated Course Curriculum			Clinical Clerkships							
		Clinical Skills / MCE / Transition										
YEAR THREE	Clinical Clerkships					Subinternships, Electives, and Research						
YEAR FOUR	Subinternships, Electives, and Research											

Key   ■ Pre-Clerkship Period   ■ Clerkship Period   ■ Advanced Training Period

Graduation Requirements

1. Satisfactorily meet all nine YSM Competencies.

2. Students must have taken and passed USMLE (United States Medical Licensing Exam) Step 1 and Step 2 CK.

3. Satisfactory completion of a sub-internship. Students may take a given sub-internship up to two times to fulfill the graduation requirement.

4. Satisfactory completion of the Capstone course and any required assessments.

5. Satisfactory completion of forty weeks of study in the final year, including one required sub-internship and the Capstone course. The remaining weeks may be devoted to electives, additional sub-internships, approved dual degree coursework, and supervised research.

6. Satisfactory completion of the Medical Student Thesis Requirement.

7. Continued satisfactory fulfillment of the YSM Professionalism Standards.

8. Continuing to meet YSM Technical, Non-Academic Standards.

9. No unresolved concerns regarding academic performance.