STANDARD 7: CURRICULAR CONTENT

The faculty of a medical school ensure that the medical curriculum provides content of sufficient breadth and depth to prepare medical students for entry into any residency program and for the subsequent contemporary practice of medicine.

SUPPORTING DATA

Table 7.0-1 | General Medical Education - Preparation for Residency

Provide school and national benchmark data from the AAMC Graduation Questionnaire (GQ) on the percentage of respondents who *agree/strongly agree* (aggregated) that they are prepared in the following ways to begin a residency program.

	GQ 2016		GQ 2017		GQ 2018	
	School %	National %	School %	National %	School %	National %
Acquired an understanding of common conditions and their management.	95.0	93.2	96.8	93.3	96.6	93.7
Acquired basic skills in clinical decision-making and application of evidence-based information.	92.5	94.0	98.4	94.0	95.0	94.4

7.1 BIOMEDICAL, BEHAVIORAL, SOCIAL SCIENCES

The faculty of a medical school ensure that the medical curriculum includes content from the biomedical, behavioral, and socioeconomic sciences to support medical students' mastery of contemporary scientific knowledge and concepts and the methods fundamental to applying them to the health of individuals and populations.

SUPPORTING DATA

Table 7.1-1 | Curricular Content

For each topic area, place an "X" in the appropriate column to indicate whether the topic is taught separately as an independent required course and/or as part of a required integrated course. Place an "X" under each column to indicate the year(s) in which the learning objectives related to each topic are taught and assessed.

Topic Areas	Course Type		Years Topic Areas Are Taught and Assessed		
	Independent course	Integrated course(s)	Year 1	Year 2	Year 3 and/or 4
Biochemistry		X	X		X
Biostatistics and epidemiology		X	X	X	X
Genetics		X	X	X	X
Gross Anatomy		X	X		X
Immunology		X		X	X
Microbiology		X		X	X
Pathology		X		X	X
Pharmacology		X		X	X
Physiology		X	X	X	X
Behavioral science		X	X	X	X
Pathophysiology		X		X	X

Table 7.1-2 | Basic Science Education

Provide school and national benchmark data from the AAMC Graduation Questionnaire (GQ) on the percentage of respondents who rated preparation for clinical clerkships and electives as *excellent or good* (aggregated) in the following sciences basic to medicine.

	GQ 2016		GQ 2017		GQ 2018	
	School %	National %	School %	National %	School %	National %
Biochemistry	31.8	62.4	65.7	62.9	69.0	62.3
Biostatistics and epidemiology	52.4	69.4	65.2	69.6	40.7	68.6
Genetics	52.4	71.6	77.3	72.3	72.4	71.4
Gross anatomy	92.9	87.7	98.5	86.6	96.7	86.2
Immunology	78.0	80.6	98.4	82.0	45.8	81.1
Microbiology	69.1	82.9	86.2	83.9	86.2	83.7
Pathology	88.1	86.8	95.4	85.6	88.0	85.0
Pharmacology	92.9	77.7	90.6	76.9	93.1	75.7
Physiology	87.1	90.9	90.7	90.8	89.9	89.8
Behavioral Science	78.6	85.5	86.0	86.3	77.6	86.2
Pathophysiology	90.2	93.9	97.0	93.5	93.2	93.4

Table 7.1-3 | Curricular Content

For each topic area, place an "X" in the appropriate column to indicate whether the topic is taught separately as an independent required course and/or as part of a required integrated course. Place an "X" under each column to indicate the year(s) in which the learning objectives related to each topic are taught and assessed.

	Course Type		Years/Phases Topic Areas are Taught and Assessed		
	Independent course	Integrated course(s)	Year 1	Year 2	Year 3 and/or 4
Biomedical informatics		X	X	X	
Complementary/alternative health care		X		X	
Evidence-based medicine		X			X
Global health issues		X	X	X	X
Health care financing		X			X
Human development/life cycle		X	X		X
Human sexuality		X	X		X
Law and medicine		X	X	X	X
Medication management/compliance		X			X
Medical socioeconomics		X	X	X	X
Nutrition		X	X		X
Pain management		X	X	X	X
Palliative care		X			X
Patient safety		X	X	X	X
Population-based medicine		X			X

Table 7.1-4 | General Medical Education - Preparation for Residency

Provide school and national benchmark data from the AAMC Graduation Questionnaire (GQ) on the percentage of respondents who *agree/strongly agree* (aggregated) that they are prepared in the following area to begin a residency program: *Fundamental understanding of the issues in social sciences of medicine (e.g., ethics, humanism, professionalism, organization, and structure of the health care system).*

GQ 2016		GQ 2017		GQ 2018	
School %	National %	School %	National %	School %	National %
92.5	93.3	96.8	93.6	91.6	93.6

Table 7.1-5 Satisfaction with the Quality of the First and Second Years of the Curriculum

As available, provide data from the independent student analysis, by curriculum year, on the percentage of respondents who were *satisfied/very satisfied* (aggregated) with the quality of the first two years of the curriculum. Add rows for each additional question area on the student survey.

	Year 1	Year 2	Year 3	Year 4
Quality of the first-year/first academic period	87.5	91.7	79.7	81.4
Quality of the second year/second academic period	20.1	67.4	89.1	90.6

7.1 NARRATIVE RESPONSE

a. Summarize any recent changes (e.g., in the last two academic years) in the extent or curricular placement of any of the content areas included in the tables above.

1. Pathophysiology of disease: The Curriculum Committee (CC) and its subcommittees review and coordinate the curricular content and address gaps and unplanned redundancies. These committees are supported by the OME, specifically the Associate and Vice Dean of Medical Education. The CC has recently identified a need to improve integration and refocus on the pathophysiology of disease in the cardio-renal-respiratory blocks.

Student feedback, USMLE STEP1 performance indicators, and comparative analysis of block-assessments with STEP 1 scores pointed to the potential of improvement in this content-area. Subsequently, pathophysiology of cardiovascular, renal, and pulmonary diseases has been addressed to improve content integration and student comprehension. To this end, sessions targeting pathophysiology of common cardiovascular, renal and pulmonary conditions are added to this block (MDC753), in addition to 4 team-based learning exercises targeting these conditions:

1. TBL 1 covers the application of principals of autonomic physiology and pharmacology, especially as it pertains to the cardiovascular system.
2. TBL 2 covers the pathophysiological basis of hypertension, ischemic heart disease and heart failure.
3. TBL 3 covers pathophysiology and management of chronic kidney disease
4. TBL 4 covers pathophysiology and differential of acute and chronic hypoxia

2. Law in Medicine: The CC has identified the need to improve coverage of this content area. This is being addressed by incorporating talks/workshops by Dr. Mohammed Ranavaya (MD, JD) in the clinical skills courses (ICS and ACS) in the first two years of the MD curriculum.

7.2 ORGAN SYSTEMS/LIFE CYCLE/PRIMARY CARE/PREVENTION/WELLNESS/ SYMPTOMS/SIGNS/DIFFERENTIAL DIAGNOSIS, TREATMENT PLANNING, IMPACT OF BEHAVIORAL AND SOCIAL FACTORS

The faculty of a medical school ensure that the medical curriculum includes content and clinical experiences related to each organ system; each phase of the human life cycle; continuity of care; and preventive, acute, chronic, rehabilitative, end-of-life, and primary care in order to prepare students to:

- Recognize wellness, determinants of health, and opportunities for health promotion and disease prevention
- Recognize and interpret symptoms and signs of disease
- Develop differential diagnoses and treatment plans
- Recognize the potential health-related impact on patients of behavioral and socioeconomic factors
- Assist patients in addressing health-related issues involving all organ systems

Organization of the curriculum: the curriculum is designed to first introduce students to basic principles of normal human structure and function and to become familiar with general skills (such as history taking and physical examination skills) throughout the first-year curriculum. The second-year curriculum is designed to promote understanding of the pathophysiology of human disease and to develop detailed methods for assessing and treating these conditions. The third-year curriculum is designed to provide students with relevant clinical experiences in the main six clerkships, but more importantly to enable them to achieve higher level learning in the multiple competencies explicitly covered and assessed in each clerkship. Finally, the Year 4 curriculum is designed to provide students with a flexible schedule to complete their attainment of the program objectives (as defined by the Clinical Clerkship Committee and by the CC)

Recognize wellness, determinants of health, and opportunities for health promotion and disease prevention: MS1 of our MD-program is primarily focused on the structure and function of each organ system. Clinical correlates of the provided information are tied into the curriculum through clinical, case-discussions and presentations. Information presented within the blocks is complemented in the Introduction of Clinical Skills (ICS) course in the first year where students learn how to interpret physical examination results using standardized patients. This course also includes training in effective means of communication and data gathering used to advise patients about methods for maintaining good health. Several sessions in the ICS course cover non-biological determinants of health, including the impact of cultural, social, economic, and environmental factors on patient wellness. These topics form the longitudinal themes continued into the MS2 and clinical years of our MD-curriculum. For e.g., several of our clerkships include learning objectives addressing the topic of substance abuse in our community and its effect on the general health of the population. Our students are expected to develop skills in the counseling and education of patients and families about acute illness, chronic illness, harmful personal behaviors/habits, and health maintenance strategies. Additionally, learning objectives in the Family Medicine clerkship also address population health, including the expectation that students can “Describe community-based interventions to modify or eliminate identified risks for disease or injury.” Additional activities in clerkships cover topics such as health screening, identification of health risk factors across the human lifespan and accounting for the impact of psycho-social factors in patient wellness. The Pediatrics clerkship includes learning objectives on preventive care, including timelines for wellness checks in newborns, screening for disease risk, immunizations and vaccinations and avoidance of accidents. The Obstetrics and Gynecology clerkship provides detailed coverage of wellness issues related to childbirth, including pre-natal care and screening for disease risk. Finally, the impact of nutrition on maintaining health is a specific learning objective within the Family Medicine, Internal Medicine, Pediatrics, and Surgery clerkships.

Recognize and interpret symptoms and signs of disease: pedagogy targeting signs and symptoms of disease is initiated in the organ-system block of MS1, during sessions on clinical correlates. This activity is the focus of almost all pedagogies in the second-year curriculum, starting with the Principles of Disease (POD) block. Case-studies, small and large group discussions, take-home assignments, application exercises of TBLs, traditional lectures and workshops are used to train students in recognizing symptoms and signs of common disorders. These skills are further exercised and developed in the longitudinal course, Advanced Clinical Skills (ACS). Sessions within these MS2 blocks also emphasize the differences between acute and chronic presentations in each of the organ systems and provide instruction on mechanisms for recognizing differences in presentations of acute and chronic disorders, and for designing treatments for these conditions. The effects of aging on normal physiological processes and on the burden of chronic disorders is also addressed in each of systems-blocks in the second year (DTI-DTIV). Each of the required clerkships provides advanced instruction in acute and chronic care by designing presentations/patient-interactions to include an appropriate balance between inpatient and

outpatient settings and including disorders that present as acute or chronic conditions in the required clinical experiences lists. End of rotation CCEs include examples of acute and chronic conditions to assess student acquisition of these concepts.

Develop differential diagnoses and treatment plans: the organ-system based blocks in the second year of the MD-curriculum specifically cover differential diagnosis and treatment plans for common disorders. For e.g. in the DTIII block, students are taught about differential diagnosis of acute chest pain along with management strategies of each of the top differentials. Through case-based discussions students are given an opportunity to participate in the process of creating a differential and are given verbal feedback by the faculty/clinician moderating the session. Pharmaco-genetic, surgical, interventional and palliative therapeutic options for relevant disorders are integrated into each block and are employed by students in case-discussions, application exercises and group discussions. In addition, standardized patient encounters, formative and summative, assess students' ability to accurately diagnose patients in clinical scenarios and to develop appropriate treatment plans. Practices of rehabilitative care are introduced in the first two years, including interprofessional (IPE) activities that involve students from allied health professions emphasizing rehabilitative care. These skills are honed in the clinical years of our MD-curriculum as students observe and participate in patient care, including rehabilitation and end-of-life care.

Recognize the potential health-related impact on patients of behavioral and socioeconomic factors: significant parts of our preclinical curriculum are involved in covering these aspects of patient care. For e.g. in the ICS and ACS courses students explore how social and cultural issues impact patient outcomes, covering topics such as poverty, educational status, access to healthcare, cultural competence, public health, ethical decision-making, and implicit bias. These topics are routinely revisited in the clinical years as students participate in clinical decision making and patient care.

Assist patients in addressing health-related issues involving all organ systems: patient interviewing and education skills are covered and assessed in the ICS course in Year 1 where students receive instruction on motivational interviewing techniques and practice these techniques on standardized patients. These skills are developed further throughout the remainder of the Clinical Skills courses in both years and are enhanced during clinical years of the MD-curriculum.

SUPPORTING DATA

Table 7.2-1 | General Medical Education				
Provide data from the independent student analysis on the percentage of students in each class who were satisfied with the adequacy of their education in the following content areas.				
	Year 1	Year 2	Year 3	Year 4
Education to diagnose disease	32.5	35.8	93.8	98.7
Education to manage disease	32.5	34.6	93.8	96.0
Education in disease prevention	35.1	36.9	92.2	98.7
Education in health maintenance	37.6	35.7	90.7	98.7

NARRATIVE RESPONSE

a. Describe the location(s) in the pre-clerkship and clinical curriculum in which objectives related to the subjects listed below are taught and assessed. Refer to the Supporting Data and Documentation for Standard 6 in the responses.

1. Normal human development
2. Adolescent medicine
3. Geriatrics
4. Continuity of care
5. End-of-life care

1. Normal Human Development

Pre-Clerkship Years – The normal development of the human body is taught in each of the Structure and Function blocks. An introduction to early embryo development through formation of the neural tube is given in Structure and Function I. Subsequent Structure and Function blocks present information about each organ system related to the specific block. Development of the nervous system and head and neck structure are covered in Structure and Function II. Development of the heart and lungs are covered in Structure and Function III. Development of the gastrointestinal, urinary, and reproductive systems are covered in Structure and Function IV. The stages of cognitive and behavioral development from childhood through adolescence to adulthood are covered in Structure and Function I and II. These presentations include discussion of aging and end of life issues relating to power of attorney and medical decision making. Disorders pertaining to the human development, behavioral, anatomical and physiological are addressed in the complementary Disease and Therapeutics Blocks of the MS2 curriculum. For e.g. pathophysiology of sexual developmental disorders are covered in the DTIV block of the second-year curriculum. In all cases assessment of objectives takes place via block and/or customized NBME examinations.

Clerkship Years – In the clinical clerkships, objectives regarding human development and life cycle are specifically addressed. The OB/GYN clerkship further explores issues related to embryology and gestation. The Pediatric clerkship focuses on physical, physiologic, and psychosocial development from birth through adolescence. Likewise, the Family Medicine clerkship objectives articulate the expectation that students be able to care for the patient across the continuum of the life cycle, identifying appropriate health maintenance recommendations by age and gender. In all cases, assessment of objectives takes place via clinical observation and shelf examinations.

2. Adolescent Medicine

Pre-Clerkship Years – Adolescent medicine is introduced in the Neurosciences block (SFII) during the first year in the context of human development and the life cycle. These are further addressed in topics related to diagnosis and management of psychiatric and behavioral disorders in adolescents during the second-year block, DTII. In all cases assessment of objectives takes place via block and/or customized NBME examinations.

Clerkship Years – Adolescent medicine is addressed during the Psychiatry, Neurology, Obstetrics and Gynecology, Family Medicine, and the Pediatric clerkships. During the Psychiatry rotations students are expected to demonstrate the ability to communicate with adolescent patients and diagnose personality disorders common in adolescents. During the Obstetrics and Gynecology rotation students are expected to be able to discuss puberty and apply recommended prevention strategies to women throughout the lifespan. During the Pediatric rotation students are expected to adequately assess adolescent behavior, conduct physical examinations, demonstrate familiarity with issues related to puberty, and communicate effectively with adolescents. There is also a lecture on adolescent medicine in the Pediatrics clerkship covering this key aspect of human development. In all cases, assessment of objectives takes place via clinical observation, OSCEs, and shelf examinations. Fourth year electives are available in Adolescent Medicine through Pediatrics, and in Assessing Children and Adolescents through Psychiatry. Family Medicine also addresses some aspects of adolescent medicine, especially sports injuries in adolescents.

3. Geriatrics

Pre-Clerkship Years – The Clinical Skills courses (ICS and ACS) provide teaching and practice in skills involving communicating with elderly patients. This also includes addressing ethical issues and introduces the students to systems based practice when treating the elderly population. A case based presentation focuses on challenges with the geriatric population and advance directives. The clinical case includes elements of communication, patient care, health care systems, and law. The Neurosciences blocks, SF and DTII, address normal and abnormal changes common to the elderly patient, including age-related changes in the structure and function of the nervous system, dementia, and stroke and neurodegenerative disorders. In the spring semester of MS2, students attend a required session on Geriatric Medicine addressing how to discriminate between physiologic aging and disease, how diseases can present atypically in the elderly, and communication

barriers with the elderly. Similarly, all first and second year courses cover the normal physiological and associated pathophysiological changes expected as a result of aging. This includes age-related infectious diseases, neoplasia, nutritional disorders, and pharmacology in the elderly. In all cases, assessment of objectives takes place via block and/or customized NBME examinations.

Clerkship Years – Family Medicine, Internal Medicine, Obstetrics and Gynecology, and Psychiatry clerkships each include content related to the care of the older adults or conditions common in the elderly. For example, Ob/Gyn objectives address menopause and other changes common in older women. In each clerkship assessment of objectives takes place via clinical observation, OSCEs, and shelf examinations. Year 4 students can also choose to complete an elective in Rural Geriatrics, which addresses the unique health-needs of the elderly in rural areas. Topics covered include the pathophysiology of aging, commonly used geriatric evaluation scales, and evaluation of function in the aged. Students are expected to demonstrate respect for the heterogeneity among older people by promoting and advocating patients' and caregivers' welfare while adhering to ethical principles of medicine, demonstrating understanding of normal and pathological aspects of aging, applying primary, secondary, and tertiary prevention interventions, and recognizing, evaluating, and initiating appropriate management of geriatric conditions within primary care settings. Assessment of objectives takes place via faculty observation.

4. Continuity of care

Family and Internal Medicine clerkship objectives include the expectation that students be able to care for the patient across the continuum of the life cycle. Included in this series of objectives are topics related to continuity of care, education about disease prevention and health maintenance, dealing with chronic illness, and promoting wellness across the continuum of the life cycle. Additional objectives focus on managing chronic disease over time. Similarly, in pediatrics, clerkship objectives address continuity issues important to children, including well-child care, immunizations, health promotion, nutrition, and preventive health. The Obstetrics and Gynecology clerkships require students to participate in care of patients at various stages of pregnancy where they participate in the continuity of care necessary for a successful outcome to each pregnancy. In all cases assessment of objectives takes place via clinical observation, OSCE, and shelf examinations.

5. End-of-life care

Discussions addressing the end-of-life care begin in the clinical skills courses of the Pre-Clerkship curriculum. Topics addressed include, aging, palliative care, death, and bereavement. The clinical skills course addresses end of life care and how ethical principles are applied. We discuss different issues that may arise at the end of life including physician assisted suicide and patient autonomy. We encourage group discussion in which students can share their own experiences or attitudes towards these controversial issues. End of life is also addressed in our advanced directives lecture where we discuss do not resuscitate orders and common decisions necessary such as life-support and parenteral feeding. These objectives are continued in the clerkships, especially in the Family and Internal Medicine clerkships. Learning settings within the rotations include long-term care, home visits, hospice, and palliative care sites. Independent learning on end-of-life care is also included in the required reading lists.

7.3 SCIENTIFIC METHOD/CLINICAL AND TRANSLATIONAL RESEARCH

The faculty of a medical school ensure that the medical curriculum includes instruction in the scientific method (including hands-on or simulated exercises in which medical students collect or use data to test and/or verify hypotheses or address questions about biomedical phenomena) and in the basic scientific and ethical principles of clinical and translational research (including the ways in which such research is conducted, evaluated, explained to patients, and applied to patient care).

NARRATIVE RESPONSE

a. List the hands-on or simulated exercises in which medical students collect or use data to test and/or verify hypotheses or to experimentally study biomedical phenomena. Do NOT include laboratory sessions where the main purpose is observation or description (such as gross anatomy or histology). For each listed experience, include the course in which it occurs and describe the format used for the exercise (e.g., hands-on laboratory sessions, simulations).

Academic Year	Course	Learning Event	Format/Assessment
MS1	MDC710	Coagulopathy	Small Group Team Based Learning/ Group Quiz
MS1	MDC710	Team Learning: Disorders of Amino Acid Metabolism	Gallery Walk/ Ranking
MS2	MDC752	Adrenergic Lab	Independent Learning/Quiz
MS2	MDC752	Cholinergic Lab	Independent Learning/Quiz
MS2	MDC750	Team Learning: Clinical Pharmacokinetics	Peer Teaching/Quiz
MS2	MDC750	Team Learning: Transplant Rejection	Small Group Discussion/ Group Quiz
MS2	MDC750	Team Learning: Immunodeficiency	Small Group Discussion/ Group Quiz
MS2	MDC750	Team Learning: Analysis and Discussion of Modern Cancer Therapies	Small Group Discussions/report
MS2	MDC750	Team Learning: Viral Immunology Case Study	Small Group Discussions/Group Quiz
MS2	MDC750	Team Learning: Opportunistic Infections in Immunocompromised Host	Small Group Discussion/Group Quiz
MS2	MDC750	Klebsiella Outbreak at NIH Clinical Center	Small Group Discussion/Group Quiz
MS2	MDC755	Heart Sounds Exercise	Hands on Simulation
MS2	MDC753	Team Learning-Differential of Chest Pain	Small Group Team Based Learning/Group Quiz
MS2	MDC753	Team Learning-Management of CKD	Small Group Team Based Learning/Group Quiz
MS2	MDC753	Team Learning-Differential of Hypoxia	Small Group Team Based Learning/Group Quiz
MS2	MDC753	Team Learning: Differential and Management of Hypertension	Small Group Discussion
MS2	MDC753	Team Learning: Thoracic Radiology	Small Group Discussion
MS2	MDC753	Team Learning: Glomerular Diseases	Small Group Discussion
MS2	MDC755	Measures of Disease	Independent Learning

MS2	MDC754	Team Learning: Men's & Women's GU health	Small Group Team Based Learning/Group Quiz
MS2	MDC754	Team Learning: Management and Complications of Diabetes	Small Group Team Based Learning/Group Quiz
MS2	MDC754	Team Learning: Management and Complications Hepatitis C	Small Group Team Based Learning/Group Quiz
MS2	MDC754	Team Learning: Population Genetics and Risk Assessment	Small Group Hands of Problem Solving

b. Describe the opportunities in the curriculum for medical students to learn and be assessed on the basic scientific and/or ethical principles of clinical and translational research and the methods for conducting such research. Note the required courses/clerkships in which medical students learn how such research is conducted, evaluated, explained to patients and applied to patient care, and how students' acquisition of this knowledge is assessed.

Since the summer of 2013, students have had the opportunity to participate in the MS1 Summer Research Stipend Program. These projects have been supported by both the clinical and basic science departments. The MS1 Summer Research Stipend Program is available to all MS1 students who have successfully completed the MS1 year and is offered during the summer between the MS1 and MS2 years. The program provides students with the opportunity to work directly with faculty mentors on clinical translational research. The research projects are collected from faculty via electronic survey during the first half of the MS1 spring semester and then provided to the MS1 students for review. The MS1 students then select their top three choices of projects via electronic survey and are matched to a project at a meeting with the students. Once matched, students are asked to meet with their respective mentor to begin the project. Students are provided a $2000.00 stipend over a six-week period to support their work. The participation in this Summer Research Program topped 85% in the academic year 2017-2018.

Students are expected to be involved in all aspects of the research, including background literature review, internal review board application, research design, investigative experiment (if applicable), data collection and analysis, result review and interpretation, presentation of the results at a local, regional, or national meeting, and manuscript development and publication.

Participation in the program has been strong since inception in 2013 with the majority of the MS1 classes participating in the program.

Year	Number of Students Participating	Class Size	Percent Participating
2013	45	71	63
2014	52	78	67
2015	48	75	64
2016	50	69	72
2017	71	82	87

Since 2012, working in collaboration with the Higher Education Policy Commission and through our Rural Health Initiative grant, 38 medical students have received 27 rural research grants for a total of $440,518.84. This initiative on rural health research places medical students in rural communities. Conducting research on rural topics gives students opportunities to learn about study design and methodology while becoming immersed in a rural community or health issue. Students, with faculty mentors, apply for rural research grants to support projects which could enhance rural health care, lead to more effective health promotion and disease prevention programs, and address barriers to care. The student is the Project Investigator on the grant. This includes completing the proposal, compiling a budget, literature review and research design. The student is also required to present their results at a local, regional or national conference (http://crh.marshall.edu/research.asp)

Required Courses and Clerkships in which medical students learn how such research is conducted, evaluated, explained to patients and applied to patient care, and how students' acquisition of this knowledge is assessed:

Course	Year	Learning Activity	Format	Assessment
IDM715	MS1	Sample size, Power, and Probability	Didactic	Quiz
IDM715	MS1	Distribution and Descriptive Statistics	Journal Club	Participation
IDM715	MS1	Measures of Disease	Journal Club	Participation
IDM715	MS1	Biostatistics and Epidemiology	Journal Club	Participation
IDM715	MS1	Measures of Test Performance	Journal Club	Participation
IDM715	MS1	Case Control Studies, Chi Square, Student's T Test	Journal Club	Participation
IDM715	MS1	Cohort Studies, ANOVA, Correlation and Regression	Journal Club	Participation
IDM715	MS1	Randomized Clinical Trials	Journal Club	Participation
IDM715	MS2	Observational Studies vs. Clinical Trials	Journal Club	Participation
IDM755	MS2	Clinical Translational Research Exercise	Team Learning	Project Completion
IDM755	MS2	Biostats Board Review	Group Discussion	
Pediatric Clerkship	MS3	Manuscript Review	Journal Club	Participation
Pediatric Clerkship	MS3	Grand Rounds	Group Discussion	Participation
Ob/Gyn Clerkship	MS3	Manuscript Review	Journal Club	Participation
Ob/Gyn Clerkship	MS3	Grand Rounds	Group Discussion	Participation
Neuro/Psych.	MS3	Grand Rounds	Presentation	Participation

7.4 CRITICAL JUDGMENT/PROBLEM-SOLVING SKILLS

The faculty of a medical school ensure that the medical curriculum incorporates the fundamental principles of medicine, provides opportunities for medical students to acquire skills of critical judgment based on evidence and experience, and develops medical students' ability to use those principles and skills effectively in solving problems of health and disease.

SUPPORTING DATA

Table 7.4-1 | Critical Judgment and Problem Solving

For each topic area, place an "X" in the appropriate column to indicate whether the topic is taught separately as an independent required course and/or as part of a required integrated course. Place an "X" under each column to indicate the year(s) in which the learning objectives related to each topic are taught and assessed.

Topic Areas	Course Type		Location in the curriculum where the listed skill is taught/assessed			
	Independent course	Integrated course(s)	Year 1	Year 2	Year 3	Year 4
Skills of critical judgment based on evidence		X	X	X	X	X
Skills of medical problem solving		X	X	X	X	X

NARRATIVE RESPONSE

a. Provide two detailed examples from the pre-clerkship phase of the curriculum of where students learn, demonstrate, and are assessed on each of the following skills. In each description, include the courses/clerkships where this instruction and assessment occurs and provide the relevant learning objectives.

1. Skills of critical judgment based on evidence and experience
2. Skills of medical problem solving

1. Skills of critical judgment based on evidence and experience

In the Pre-Clerkship courses on Clinical Skills (ICS and ACS), the students are provided with the fundamentals in the skills for critical judgment based on evidence. For e.g. during year 2, students participate in three workshops in the Advanced Clinical Skills course. These workshops present the students with a clinical case and standardized patient. The students are expected to first determine a differential diagnosis. They are then presented with additional history and physical findings and are expected to refine their diagnosis based on the additional evidence from the history and physical and to determine what the next steps would be for the patient. Students work in groups of 4 with a MS4 facilitator and are assessed by the facilitator on their ability to process information and ask for additional studies. Three workshops are given each year: cardiology, pulmonary, and neurology.

2. Skills of medical problem solving

In MDC 711 Structure and Function 1, first year students are exposed to problem solving through three sessions relating to ion channel, muscle and nerve function. Students work in small groups to solve problems related to the topic. They submit a group answer to the instructor and are assessed on whether they have identified the correct answer as well as the sources they use to arrive at the answer.

Session objectives are:

1. Be able to apply knowledge of ion channel function to describe causes of abnormal function in channelopathies.
2. Be able to apply knowledge of ion channel and muscle function to describe muscle disorders.
3. Be able to apply knowledge of axon and nerve function to describe peripheral nerve disorders.

7.5 SOCIETAL PROBLEMS

The faculty of a medical school ensure that the medical curriculum includes instruction in the diagnosis, prevention, appropriate reporting, and treatment of the medical consequences of common societal problems.

NARRATIVE RESPONSE

a. Describe five common societal problems that are taught and assessed in the curriculum. For each of the five:

1. Describe the process used by faculty to select the problem.
2. Describe where and how content related to the societal problem is taught in the curriculum.
3. Provide the relevant course and clerkship objectives that address the diagnosis, prevention, appropriate reporting (if relevant), and treatment of the medical consequences of this societal problem.

1. Describe the process used by faculty to select the problem.

Faculty representatives to the MS1, MS2, MS3 and MS4 subcommittees discussed social issues that were having an impact on the community served by JCESOM. The selection process focused on a number of key variables, including incidence and prevalence of the problem in our society, the seriousness of the problem, chances that our student will encounter a population affected directly or indirectly by the problem on a regular basis, community awareness and involvement in the problem, faculty training and expertise in addressing curricular content relating to the problem. After discussing a number of options, the members agreed on the following five societal problems:

1) Opioid and substance abuse
2) Obesity
3) Domestic violence
4) Tobacco use and smoking cessation
5) Poverty and health care access

2. Describe when and how content related to the societal problem is taught in the curriculum.

1) Opioid abuse: abuse of opiates is gripping our nation and the world. The states of West Virginia, Ohio, and Kentucky are among the most affected in the nation. WV has one of the highest opioid-related mortality rates and Huntington is the epicenter of this national health crisis. Accordingly, substance abuse disorders are addressed in our curriculum at multiple points using a variety of pedagogies and assessments:

Course	Year	Course/Session Learning Objective	Pedagogy	Assessment
IDM 710	MS1	Discuss depression, alcoholism, and other addictive disorders in the context of a medical professional	Lecture	
MDC 715	MS1	1. Recognize the role of stigma as a barrier to treatment in Substance Use Disorders (SUD). 2. Identify appropriate non-stigmatizing language in SUD. 3. Define SBIRT and its role in substance treatment. 4. Recognize the role of behavioral health issues in SUDs	Lecture	Quiz
MDC 752	MS2	1. Discuss the problem of drug abuse during pregnancy and the effect on the neonate	Lecture	Quiz

		2. Identify the major drugs abused during pregnancy 3. Review the appropriate treatment options for pregnant drug abusers		
MDC 752		1. Recognize the magnitude of drug abuse as a local, national and international problem and the role of Physicians in this global epidemic 2. Discuss the neurological basis of drug abuse 3. Distinguish between the major drugs of abuse and their effects on the patient 4. Describe the appropriate treatment options for emergent and non-emergent drug abuse	Lecture	Quiz
MDC 752		Substance Use Disorders in Children and Adolescents	Lecture	Quiz
MDC 752		Substance Use Disorders in Adults	Lecture	Quiz
MDC 752		1. Review the neurophysiological concepts of pain 2. Describe the mechanism of action for the classes of analgesics. 3. Know the side effects, drug-drug interactions, contraindications and cautions for each drug discussed. 4. Discuss the appropriate and ethical choice of analgesic	Lecture	Quiz
MDC 711	MS1	Common Issues of Adolescence	Lecture	Quiz

Substance Use Disorders are addressed throughout the MS3 clerkships with explicit coverage in the psychiatry, pediatrics, OB/Gyn., and family medicine clerkships. For e.g. Family Medicine lecture on chronic pain and opioid management and opioid addiction: diagnosis and management. Students commonly encounter patients, including drug-seeking behavior, alcohol or opiate dependence, maternal substance abuse disorder, fetal alcohol syndrome, and patients recovering from substance abuse disorders.

2. Obesity: obesity as an epidemic is covered across several integrated preclinical courses and is addressed throughout the clerkship curriculum.
    1. Students are introduced to the concepts of obesity and obesity-related disorders in their first course in first year (MS1, MDC710). This is large group discussion, which includes pre-readings and discussion guides. The session objectives are to identify links between obesity and chronic disease and to develop mechanisms to explain to a patient how obesity contributes to chronic disease. Students' active participation in the ensuing discussion is expected and required. This session is followed by Clinical Correlates in Obesity, a large group discussion surrounding etiology and epidemiology of adult and childhood obesity. This session also includes pitfalls of the Western diet and recent dietary recommendations. This course covers foundational concepts in metabolism and links to obesity are tied into a number of other sessions. Students are frequently reminded of the socioeconomic costs of obesity and obesity-related disorders.
    2. Apart from obesity, this course also covers nutrition with a series of sessions dedicated to adult nutrition. The objectives for these sessions include, understand fundamental principles of nutrition, explain how energy requirements can be measured and estimated, and discuss how protein requirements are determined. In addition, students are required to complete a nutrition project and present to their peers.
    3. Obesity and associated nutritional imbalance are addressed in the MS2 curriculum (MDC 754) in the independent exercise "Nutrition Vitamin Deficiency and Excess". The session objectives include, discuss the pathology associated with vitamin and other nutrient deficiency, and discuss the pathology associated with vitamin and other nutrient excess.

4. In MS2, in the ACS course, During the MS2 year students are asked to use motivational interviewing techniques to discuss specific lifestyle intervention in an obese patient with newly diagnosed hypertension.
5. Finally, management of the obesity is discussed in the session "Obesity Treatments: Dietary, Medical and Surgical' in the MDC 754 course of the MS2 curriculum. Additional teaching activities focus on patient education about healthy eating and fast food choices.
6. Additional teaching activities related to obesity and associated disorders is addressed in sessions targeting diabetes mellitus, hypertension, ischemic heart disease, dyslipidemias, and obstructive sleep apnea. These sessions are integrated across the two years of the preclinical curriculum.
7. Obesity as a societal problem is further addressed during the MS3 Family Medicine and pediatric clerkships when didactic and small group discussions address the causes and consequences of obesity and strategies for communicating with patients and families about how to encourage physical activity and healthy eating.

2) Domestic violence: domestic abuse is first addressed in the Introduction to Clinical Skills course. A community panel of social workers, policemen, victims of domestic abuse, lawyers and doctors introduces students to the problem of domestic violence. Panelists share their experiences with the students and teach them how to suspect domestic violence. Discussion also revolves around role of societal and environmental factors in domestic violence and how to approach a victim of domestic violence. Domestic violence as a learning objective is readdressed in the Family Medicine Clerkship, which includes patient encounters and curricular content addressing this societal problem. This is reinforced during the final CCEs where one of the patients is a victim of domestic violence and students are graded on and given feedback on their approach to a patient with domestic violence.

3) Tobacco use and smoking cessation: Tobacco use disorders as a societal problem is first addressed in the MS1 Major Organ Systems block as part of the block coverage of cardiovascular physiology. This is reemphasized during the MS2 year in the Neurosciences block, which further addresses the epidemiology of nicotine use, nicotine withdrawal, and treatment for nicotine dependence. Tobacco addiction and its contributions to cardiovascular and pulmonary disease is covered in the MS2 Cardio-Renal-Pulmonary block; including its role in atherosclerosis, ischemic heart disease, hypertension, heart failure, restrictive and obstructive lung diseases, lung carcinoma, and end stage renal disease. In the ICS course, students are instructed and assessed on obtaining a tobacco use history. They are required to assess for tobacco use during each clinical encounter. Students must learn the five stages of quitting as well as medical options for cessation and community resources. They will be able to discuss the success rates of different cessation strategies and make a recommendation for their standardized patient. Students identify smoking as a risk- factor for multiple diseases within each system as applicable. During the MS2 Advanced Clinical Skills course (MED 755), student's exposure to patients with tobacco use disorder is continued in the form of workshops and clinical skills examinations. During the latter they are assessed on their ability to provide cessation counseling. Smoking cessation is frequently discussed in the clerkships and students are taught counseling methods for cessation of smoking during Family and Internal Medicine Clerkships. Students are tested on their ability to communicate with patients regarding the impact of smoking on health during their annual CCEs, and receive feedback from the faculty on the same.

4. Poverty and health care access: West Virginia is one of the poorest states in the country with limited access to health care. The mission of our school is to improve health and health care access for our community by training excellent physicians to serve the 'unique health care needs of West Virginia and central Appalachia". Almost every course and clerkship touches on the impact of health care access on the health and disease of their patients. Specifically: during the MS2 Advanced Clinical Skills course (MED 755), students are given a scenario of a patient without health insurance and asked to choose OTC medications to treat symptoms based on the patient's budget. During the activity, students' partner with MS4's and travel to pharmacies within the community to choose their treatment plan before returning to have a large group discussion on the medications chosen; additionally during the MS2 year, there is a panel discussion held on ethical implications a relationship with the pharmaceutical industry may

have on patient care. During this discussion, considerations are made for patients with limited access to care and how prescribing habits made be altered based on a personal relationship with the pharmaceutical industry; the final CCE for introduction to clinical skills addresses homelessness and access to care. A homeless alcoholic patient develops acute pancreatitis. His lack of resources and health care literacy leads to delay in care and thus a more severe presentation of symptoms. Students must obtain his history and assess his medical conditions and social situation. They must also demonstrate ethical and professional behavior throughout the encounter; as a part of training in access to health care student often work, during their clerkships, with social and caseworkers to find resources for families. In addition, students participate in a required session on "Managed Care and Patient Advocacy" during ACS. This talk introduces students to, among other things, basic insurance concepts, managed care, and moral hazard.

3. Provide the relevant course and clerkship objectives that address the diagnosis, prevention, appropriate reporting (if relevant), and treatment of the medical consequences of this societal problems.

See table in answer 2 above

7.6 CULTURAL COMPETENCE AND HEALTH CARE DISPARITIES

The faculty of a medical school ensure that the medical curriculum provides opportunities for medical students to learn to recognize and appropriately address gender and cultural biases in themselves, in others, and in the health care delivery process. The medical curriculum includes instruction regarding the following:

- The manner in which people of diverse cultures and belief systems perceive health and illness and respond to various symptoms, diseases, and treatments
- The basic principles of culturally competent health care
- The recognition and development of solutions for health care disparities
- The importance of meeting the health care needs of medically underserved populations
- The development of core professional attributes (e.g., altruism, accountability) needed to provide effective care in a multidimensional and diverse society

SUPPORTING DATA

Table 7.6-1 | Cultural Competence

Provide the names of courses and clerkships that include objectives related to cultural competence in health care. For each, list the specific topic areas covered. Schools using the AAMC Tool for Assessing Cultural Competence Training (TACCT) may use the "Domains" table as a source for these data.

Course/Clerkship	Topic area(s) covered
Introduction to Clinical Skills (MS1) Advanced Clinical Skills (MS2)	Cultural Awareness Community Panels LGBTQ Community Communication Barriers: Vision and hearing impairment Substance Use Disorders (EMS, Police, Patients in Recovery, Parents of Addicts) Medical Humanities Assignments

Table 7.6-2 | Health Disparities, Demographic Influences, and Medically Underserved Populations

Provide the names of courses and clerkships that include explicit learning objectives related to the listed topics areas.

Course/Clerkship	Topic Area(s) Covered		
	Identifying and providing solutions for health disparities	Identifying demographic influences on health care quality and effectiveness	Meeting the health care needs of medically underserved populations
FCH 742 Family Medicine MS3 Clerkship	Y	Y	Y
PSY 742 Psychiatry MS3 Clerkship	Y	Y	Y

Table 7.6-3 | General Medical Education - Preparation for Residency

Provide school and national benchmark data from the AAMC Graduation Questionnaire (GQ) on the percentage of respondents who *agree/strongly agree* (aggregated) that they are prepared in the following area to begin a residency program: *Prepared to care for patients from different backgrounds.*

GQ 2016		GQ 2017		GQ 2018	
School %	National %	School %	National %	School %	National %
90.0	95.5	93.7	95.4	93.3	95.9

Table 7.6-4 Adequacy of Education			
Provide the percent of respondents to the ISA who were satisfied with *the adequacy of education in caring for patients from different backgrounds*.			
Year 1	Year 2	Year 3	Year 4
42.5	53.5	92.3	94.6

NARRATIVE RESPONSE

a. Describe and provide two examples of how the curriculum prepares medical students to be aware of their own gender and cultural biases and those of their peers and teachers.

1. Gender and Cultural Bias Reflection – Students from the MS1 (ICS – IDM 715) and MS2 (ACS – IDM 755) courses perform a written reflection (anonymized) on their own gender and cultural biases relating to their peers, educators, and future patients. Students are asked to discuss ways in which they have begun to address them or plan to do so in the future. Students must cite any sources utilized in the exercise. Reflections are compiled and themes identified. A large group discussion is then held during which the biases of the class as a whole are shared along with those of their instructors, a session moderated by a trained psychologist who is not involved in student assessment and evaluations. Students are given feedback on sources utilized and resources for further knowledge in the future. During their fourth year, students will reflect again on their original assignment and consider changes in their attitudes and how these might change further going forward. Academic year 2018-2019 is the first time the exercise was completed.
2. Introduction and Advanced Clinical Skills (MS1 and MS2): the impact of gender and cultural biases on medical outcomes for patients, and the community, is primarily addressed in these longitudinal courses. ICS and ACS provide students with opportunities to explore and engage in discussions regarding the impact of cultural parameters on patient and population health. These include cultural awareness community panels:

    a. LGBTQ
    b. Communication Barriers. Vision and Hearing Impaired
    c. Domestic violence
    d. Substance Use Disorders (EMS, Police, Patients in Recovery, Parents of Addicts)

7.7 MEDICAL ETHICS

The faculty of a medical school ensure that the medical curriculum includes instruction for medical students in medical ethics and human values both prior to and during their participation in patient care activities and requires its medical students to behave ethically in caring for patients and in relating to patients' families and others involved in patient care.

SUPPORTING DATA

Table 7.7-1 | Medical Ethics

For each topic area listed below, indicate whether the topic is taught separately as an independent required course and/or as part of a required integrated course and when in the curriculum these topics are included by placing an "X" in the appropriate columns.

	Course type		Years the topic areas are taught/assessed			
	Independent course	Integrated course(s)	Year 1	Year 2	Year 3	Year 4
Biomedical ethics		X	X	X	X	X
Ethical decision-making		X	X	X	X	X
Professionalism		X	X	X	X	X

Table 7.7-2 | General Medical Education - Preparation for Residency

Provide school and national benchmark data from the AAMC Graduation Questionnaire (GQ) on the percentage of respondents who *agree/strongly agree* (aggregated) that they are prepared in the following area to begin a residency program: *I understand the ethical and professional values that are expected of the profession.*

GQ 2016		GQ 2017		GQ 2018	
School %	National %	School %	National %	School %	National %
100.0	98.0	98.4	98.0	100.0	98.2

NARRATIVE RESPONSE

a. Describe the methods used to assess medical students' ethical behavior in the care of patients and to identify and remediate medical students' breaches of ethics in patient care.

Students are first introduced to medical ethics in the Introduction to Clinical Skills Course during MS1. This large group discussion centers around the primary bioethics principles of autonomy, beneficence, non-maleficence, and justice; application of foundational principles of medical ethics to common clinical ethical dilemmas; and, identifying the current status of debate and consensus about ethical issues relevant to medical practice.

In ICS, students are required to complete a case-based exercise on "Applications of Medical Ethics in Everyday Practice". They are given feedback on their responses by the course director.

In ICS, students are taught and patriciate in a large group discussion on "Ethical Dilemmas". Session objectives include; define the terms "fundamental presupposition", "ethical theory" and "practical decision" as used to describe the "anatomy" of an ethical decision; list the commonly held principles governing the ethical decisions in medicine; discuss two different fundamental presuppositions re: the value of individual human life: "instrumental" vs. "intrinsic"; and, Define the terms "decision-making capacity", "appropriate surrogate decision-maker", "medical futility" and "double effect" as they apply to the ethics of medical decision making.

In ICS, students also explore euthanasia and physician assisted suicide in a large group discussion moderated by one of the Family Medicine faculty.

First year students are assessed on their ethical treatment of patients during their CCEs. Within Introduction to Clinical Skills (ICS) course students are introduced to ethical principles and behavior through didactic sessions and case based discussion. Students are required to apply these principles and behavior to each clinical scenarios. During ICS the students complete eight clinical competency exams. The students are assessed on professional domains during each encounter, including ethical standards such as autonomy and non-maleficence. Students receive feedback on these encounters from the faculty and the standardized patients. Students with a concerning performance are reviewed and meet with the course director to identify and clarify the concern and develop a plan for improvement.

During the MS2 Advanced Clinical Skills course (MDC-755), students continue with didactic education in medical ethics and are assessed formally with written examinations and during clinical competency examinations. Students who have been identified on clinical competency examinations to show patterns of concern will meet with the course directors for an individualized remediation plan.

Finally, students are evaluated on their commitment to ethical principals in patient-care for each clerkship and receive feedback from Clerkship Directors during midpoint and final evaluations.

SUPPORTING DOCUMENTATION

1. Instruments used in the formative and/or summative assessment of medical students' ethical behavior during the pre-clerkship and clinical clerkship phases of the curriculum.

   See Appendix 7.7-1 MS1-MS2 Professionalism Eval Form
   7.7-2 MS3-MS4 Clerkship Student Eval Form

7.8 COMMUNICATION SKILLS

The faculty of a medical school ensure that the medical curriculum includes specific instruction in communication skills as they relate to communication with patients and their families, colleagues, and other health professionals.

SUPPORTING DATA

Table 7.8-1 | Communication Skills			
Under each heading, provide the names of courses and clerkships that include explicit learning objectives related to the listed topics areas.			
Course	Topic Areas		
	Communicating with patients and patients' families	Communicating with physicians (e.g., as part of the medical team)	Communicating with non-physician health professionals (e.g., as part of the health care team)
IDM 715 – Introduction to Clinical Skills	Y	Y	Y
MED 755 – Advanced Clinical Skills	Y	Y	Y

Table 7.8-2 | General Medical Education - Preparation for Residency					
Provide school and national benchmark data from the AAMC Graduation Questionnaire (GQ) on the percentage of respondents who *agree/strongly agree* (aggregated) that they are prepared in the following area to begin a residency program: *Communication skills necessary to interact with patients and health professionals.*					
GQ 2016		GQ 2017		GQ 2018	
School %	National %	School %	National %	School %	National %
100.0	98.2	98.4	98.1	98.3	96.4

NARRATIVE RESPONSE

a. Describe one specific educational activity, including student assessment, and the relevant learning objectives included in the curriculum for each of the following topic areas:

1. Communicating with patients and patients' families
2. Communicating with physicians (e.g., as part of the medical team)
3. Communicating with non-physician health professionals as members of the health care team

1. Communicating with patients and patients' families

Sessions and assessments focused on communication with patients and their families are found in the two clinical skills courses: Introduction to Clinical Skills for MSI students and Advanced Clinical Skills for MSII students.

In year 1, students complete a medical humanities assignment as a large group discussion covering various scenarios in which a physician is approached by a patient on social media or in social settings.

All first and second year students are assessed on their interactions with standardized patients during each CCE. The CCEs are evaluated by faculty and peer graders and the standardized patients.

During the MS2 Advanced Clinical Skills course (MDC-755), students are taught how to break unwelcome news to patients using well described techniques. During a follow up to a clinical skills examination, students are given

the opportunity to practice these skills by breaking unwelcome news to a standardized patient with his/her spouse or friend in the room.

Learning objective: Demonstrate effective oral communication skills with patients in clinical setting. (Standardized patient)

2. Communicating with physicians (e.g., as part of the medical team)

Year 2 students complete 5 case presentations in which they present a patient to a physician. They are assessed on the inclusion of relevant history and physical findings, the manner in which the presentation is made, and their diagnostic plan.

Learning objective: Effectively present the findings of a history and physical examination, diagnostic test results, and management plan.

3. Communicating with non-physician health professionals as members of the health care team

Students in year 2 participate in a 2-part session of IPE. During this session, students from the schools of medicine, pharmacy, and health professions, including dietetics, social work, communication disorders, and physical therapy, take pre- and post-session surveys exploring their attitudes toward interprofessional teams in health care. Students are given a case with profession-specific objectives and develop a treatment plan specific for their discipline. During the second part of the experience, teams compromised of students representing each discipline discuss the treatment plan for the standardized patient. Students are evaluated by the standardized patient and a faculty facilitator.

Learning objective: Apply team work skills in collaboration with other members of the health care team to provide appropriate health care to patients.

7.9 INTERPROFESSIONAL COLLABORATIVE SKILLS

The faculty of a medical school ensure that the core curriculum of the medical education program prepares medical students to function collaboratively on health care teams that include health professionals from other disciplines as they provide coordinated services to patients. These curricular experiences include practitioners and/or students from the other health professions.

SUPPORTING DATA

Table 7.9-1 | Collaborative Practice Skills in Learning and Program Objectives

Illustrate the linkage between course and clerkship learning objectives related to collaborative practice skills and the medical education program objectives.

Course/Clerkship learning objective(s) related to collaborative practice skills	Medical education program objective(s)
DTIII—present team findings during application exercise of at least one TBL Internal Medicine Clerkship—Students must demonstrate the ability to communicate effectively with patients, support personnel and consulting physicians OB/GYN Clerkship—Communicate effectively verbally and via written documentation with other members of the health care team including faculty, residents, nursing, supporting staff as well as the patient and her family ACS— Demonstrate effective oral communication skills with colleagues and other health professionals in clinical care settings (IPE).	**IC3A2** Demonstrate effective oral communication skills with colleagues and other health professionals in clinical care settings
MS1 S&F III – work with other students as a team to solve clinical case-based problems involving the cardiovascular system, the respiratory system, and the kidney. MS1 S&F IV – Work with other students as a team to solve clinical case-based problems involving the gastrointestinal, endocrine, and reproductive systems. MS2 DTIII-- work with other students as a team to solve clinical case-based problems involving the cardiovascular system, the respiratory system, and the kidney. MS2 DTIV—work with other students as a team to solve clinical case-based problems involving the gastrointestinal or the endocrine system. MS2 ACS— Work collaboratively as a member of a team to solve clinical problems (IPE). All Required Clerkship— work collaboratively as a member of a team to provide effective patient care	**IC2B1** Work collaboratively as a member of a team to solve clinical problems
All Required Clerkship—Students must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.	**IC3B1** Apply team work skills in collaboration with other members of the health care team to provide appropriate health care to patients

ACS— Actively request and respond to feedback from other members of the health care team (IPE).	**PR3K2** Actively request and respond to feedback from other members of the health care team
All Required Clerkship—physicians model appropriate feedback behavior during rounds and discharge planning involving all members of the health care team	**PR4K2** Provide appropriate feedback to other members of the health care team
Psychiatry Clerkship—Discuss the roles of non-physician healthcare disciplines (e.g., case managers, LPCs, social workers, psychologists, recreation therapists, etc.) Psychiatry Clerkship—Discuss the importance of working successfully with patient's families and other support systems (schools, DHHR, legal team, etc.) ICS/ACS—Discuss the role and responsibilities of health care team members in care of patients, including but not limited to physicians, EMTs, social workers, patient advocates, interpreters.	**SB1E1** Discuss the role and responsibilities of health care team members in the care of patients
OB/GYN Clerkship—Demonstrate awareness of the importance of culture, ethnicity, language and socioeconomic background in the interaction with patients and their families	**SB2E1** Recognize barriers to effective health care team function and how to overcome these barriers to provide optimal patient care
Family Medicine—Discuss leading a multidisciplinary team in effective patient care	**SB2E2** Describe how health care team members are effectively integrated to optimize patient care in the hospital and clinic setting
All Required Clerkship—develop patient care plans integrating the roles of appropriate medical and allied health professionals	**SB3E1** Develop patient care plans integrating the roles of health care team members in the hospital and clinic setting
Family Medicine—Discuss leading a multidisciplinary team in effective patient care	**SB3E2** Describe how health care team members are effectively integrated to optimize patient care across different levels of care

NARRATIVE RESPONSE

a. Provide three examples of required experiences where medical students are brought together with students or practitioners from other health professions to learn to function collaboratively on health care teams with the goal of providing coordinated services to patients. For each example, describe the following:

1. The name and curriculum year of the course or clerkship in which the experience occurs
2. The learning objective and desired outcome(s) of the experience related to students' development of collaborative practice skills/how the experience contributes to the desired outcome
3. The duration of the experience (e.g., single session, course)
4. The setting where the experience occurs (e.g., clinic, simulation center)
5. The other health profession(s) students or practitioners involved
6. The way(s) that the medical students' attainment of the objectives of the experience is assessed

Interprofessional experiences take place in conjunction with Introduction to Clinical Skills (MS1) and Advanced Clinical Skills (MS2) and during the MS3 Internal Medicine rotation.

Example 1—MS2—Advanced Clinical Skills (MDC 715) – Appendix 7.9-1

Learning Objectives:

1. Work with individuals of other professions to maintain a climate of mutual respect.
2. Use the knowledge of one's own role and those of other professions to appropriately assess and address the health care needs of patients and populations served.

3. Communicate with patients, families, communities, and other health care professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and the treatment of disease.
4. Apply relationship-building values and principles of team dynamics to perform effectively in different team roles to plan and deliver patient/population-centered care that is safe, timely, effective, and equitable.

Duration: One experience is conducted over two sessions.

Setting: Conference center or classroom

Professional schools involved:

1. College of Health Professions: Nursing, Dietetics, Social Work, Communication Disorders, Physical Therapy
2. School of Medicine
3. School of Pharmacy
4. Department of Psychology

Assessment: Students complete a care plan based on their discipline that includes information they need to complete the plan from the other disciplines participating in the exercise.

Example 2—MS1—Introduction to Clinical Skills (MDC-755)

Learning Objectives:

1. Introduce students to the role of various health care and allied health professionals in the effective care and management of patients.
2. Work with individuals of other professions to maintain a climate of mutual respect.
3. Use the knowledge of one's own role and those of other professions to appropriately assess and address the health care needs of patients and populations served.

Duration: One, panel discussion

Setting: Conference center or classroom

Professional schools involved:

1. College of Health Professions: Nursing, Dietetics, Social Work, Communications Disorders, Physical Therapy
2. School of Medicine
3. School of Pharmacy
4. Department of Psychology

Assessment: students complete a reflection-assignment after the activity

Example 3 – MS3 IPE Event (7.9 appendix)

Learning Objectives:

1. Define Transitions of Care
2. Define issues associated with failed transitions
3. Describe the 3 most common errors in transitions of care that lead to failed transitions, especially at the time of hospital discharge.
4. Identify ways to improve transitions of care in the hospital discharge process.

Duration: Students attend 2 to 4 sessions. Sessions are 1.5-2 hours.

Setting: Classroom designed for small group work.

Professional schools involved:

1. School of Medicine
2. School of Pharmacy

Assessment: Students answers are discussed in a large group setting at the end of the session.

SUPPORTING DOCUMENTATION

1. Examples of forms used in the assessment of medical students' collaborative practice skills. For each example, list the course or clerkship in which the form is used.

   See Appendix *7.9-1 Collaborative Skills Assessment Forms.docx*