Marshall University Joan C. Edwards School of MedicineCore Competencies with Milestones

Medical Knowledge (MK)				
Students must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g., epidemiological and social-behavioral) science and the application of this knowledge in patient care.				
Enabling Competency	**Milestones students should achieve**			
	Year 1	**Year 2**	**Year 3**	**Year 4**
A. Describe the normal structure and function of the human body andof each of its major organ systems, across the life span.	**MK1A1.** Describe the normal structure and function of the human body at the sub-cellular, cellular, tissue, organ, and body level. **MK1A2.** Discuss the normal process of pregnancy.	**MK2A1.** Describe the normal structure and function of all major organ systems as systems, outlining how anatomy, cell biology, and physiology work together.	**MK3A2**. Discuss the normal process of growth in childhood, and maturation through adulthood to the end-of-life.	**MK4A1.** Integrate knowledge of the expected changes in organ function as well as normal physiologic changes across the lifespan into the care of critically ill and emergent patients and patients at the end-of-life.
B. Explain various causes (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, behavioral, and traumatic) of major diseases and conditions and the ways in which they operate on the body (pathogenesis).	**MK1B1**. Recognize variations of normal development and function of organs and systems due to various causes.	**MK2B1**. Describe the various causes of disease and how these are manifest in organ system dysfunction.	**MK3B1**. Explain the pathophysiologic factors underlying the clinical manifestations of common diseases.	**MK4B1**. Discuss the pathogenesis of major conditions related to area(s) of specialty/disciplinary interest.
C. Describe how the altered structure and function (pathology and pathophysiology) of the body and its major organ systems are manifest through major diseases and conditions.	**MK1C1**. Demonstrate the ability to recognize abnormal anatomic and physiologic function of the human body.	**MK2C1.** Describe the pathology and pathophysiology underlying the clinical manifestations of common conditions.	**MK3C1**. Use knowledge of pathology and pathophysiology to develop diagnostic and therapeutic plans for patients with common conditions.	**MK4C1.** Describe the altered structure and function of organ systems producing disease across the lifespan and incorporate this knowledge into the care of individual patients.
D. Describe the scientific principles underlying laboratory and radiologic diagnostic methodologies.	**MK1D1.** Describe the anatomical, histological and physiological principles that underlie physical, laboratory, and radiological testing.	**MK2D1.** Apply the concepts of sensitivity, specificity, positive and negative predictive values, and likelihood ratios to decisions regarding patient testing.	**MK3D1.** Discuss the cost and morbidity implications of diagnostic test imprecision and incidental findings associated with diagnostic evaluations.	**MK4D1.** Incorporate knowledge of the scientific principles underlying laboratory and radiologic diagnostic methodologies into the care of critically ill

			MK3D2. Incorporate knowledge of the scientific principles underlying laboratory and radiologic diagnostic methodologies into the care of patients with core medical problems. **MK3D3.** Describe how common clinical laboratory tests are used in diagnosis and treatment monitoring.	and emergent patients. **MK4D2**. Describe the scientific basis for the diagnostic tests used in area(s) of specialty/disciplinary interest. **MK4D3**. Discuss the basic scientific principles of radiologic diagnostic tests, and be able to give examples of how these tests should be used appropriately in patient care.
E. Identify the proximate and ultimate factors that contribute to the development of disease and illness, and, that contribute to health status within and across populations regionally, nationally, and globally.	**MK1E1.** Recognize the genetic basis of disease and complex interaction with social conditions and life experiences. **MK1E2**. Discuss the effects of socioeconomic status, diet, exercise, gender, and age on health and disease.	**MK2E1.** Describe the determinants of health and disease, and provide specific examples of how these determinants influence health outcomes in common/major diseases. **MK2E2.** Discuss social conditions and behaviors that predispose patients to disease and decreased function (e.g. alcohol addiction, obesity). **MK2E3.** List major contributors to health and disease in populations including mechanisms of action. **MK2E4.** Discuss how the determinants of health and disease relate to the host immune system, its development, function, and possible dysregulation.	**MK3E1.** Describe the determinants of disease and health for major clinical situations prevalent in W.V. (including regional variation), nationally, and globally **MK3E2**. Recognize the influence of common health determinates and illness on patients. **MK3E3**. Integrate knowledge of social conditions and behaviors that predispose patients to disease and decreased function into the managements plan for individual patients.	**MK4E1.** Implement interventions to reduce the impact of disease determinants (or improve the likelihood of health improvements) within patient care.
F. Demonstrate knowledge of the basic principles of human	**MK1F1**. Discuss the basic principles of normal human	**MK2F1**. Outline the taxonomy of abnormal	**MK3F1**. Recognize the behavioral milestones of	**MK4F1**. Practice advanced behavioral modification

behavior throughout the life cycle, including development during infancy, childhood, adolescence, adulthood, and end of life.	development form fetus to elder. MK1F2. Discuss variations in family and individual life cycle in view of the heterogeneity of the U.S. population.	human behavior and development.	normal child development and adult maturation, and use these milestones in patient care. MK3F2. Identify common behavioral pathology that contributes to health and illness in common disease/injury states. **MK3F3.** Describe human developmental milestones and characteristic behavioral changes expected throughout the life cycle.	strategies to help patients achieve lifestyle changes.
G. Recognize the medical consequences of common societal problems.	**MK1G1.** Describe the impact on health of life experiences, poverty, education, race, gender, culture, crime, and the health care system.	**MK2G1.** Recognize the contribution of social conditions and problems to the health and disease outcomes of patients.	**MK3G1.**Create discharge/management plans that address the impact of social conditions and problems on patients.	**MK4G1**.Describe strategies to ameliorate the impact of social conditions and problems on the health and disease outcomes of patients.
H. Apply the principles of pharmacology, therapeutics, and therapeutic decision-making to the care of an individual patient.		**MK2H1.** List mechanism of action, therapeutic indications] and common side effects for major drug classes. **MK2H2**. Discuss the mechanism of action, common adverse effects, effectiveness, risks, and costs of pharmacological therapeutics used to treat core medical conditions. Include discussion of brand versus generic medication. **MK2H3**. Discuss the use of alternative medications.	**MK3H1.** Select appropriate medications to treat core conditions in inpatient and outpatient settings. **MK3H2.** Discuss the rationale for selection of these medications including indications, side effects, cost, and effectiveness. **MK3H3.** Perform medication reconciliation for patients at time of discharge.	**MK4H1.** Differentiate between alternative medications for common conditions based on therapeutic effectiveness and cost considerations. **MK4H2.** Identify cost-related barriers to patient medication use with consideration to cost, gender, ethnicity sexual identity, socioeconomic status, rural setting, religious and cultural beliefs