

Curricular Thread Content Report: Pain Management

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Introduction: Pain continues to be one of the primary reasons patients choose to seek the counsel of a physician. Throughout history, pain treatments were elusive and ranged from simply turning a blind eye, to more recently, being treated as a vital sign with aggressive pharmacologic attempts towards its elimination. Modern physicians should appreciate the challenges faced by previous generations of providers and understand the scarcity of available treatment options they faced. Pain treatment revolving around multidisciplinary physician lead treatment teams should incorporate previous generations' efforts to set realistic expectations while maintaining empathy and attempting to lower the patient's suffering to a manageable level, all while avoiding the problems and complications previously encountered with hardline single modality pharmacologic escalation or holding fast to the expectation that pain to extreme degrees is an expected part of the human existence. The suggested curriculum will hopefully lead to the training of such a physician, equipped with a multimodal vision for the treatment of debilitating pain.

Reviewed Documents and Content Standards: *USMLE Content Outline* (see details at end of report), COM Curriculum Database, *Presentation on Pain Management to Doctoring II Course*, *Pain Management Outline*, *State of Tennessee Governor's Office Release on Substance Use Disorders / Pain Management Core Competencies*, *AAMC National Workshop to Advance Medical Education to Combat Opioid Misuse: Working Together Across the Continuum*; *Opioids in Appalachia*, *Society of Critical Care Medicine*; *Critical Care Update: Using AI to Manage Opioid Use in Hospitals ICUs*, misc. studies, reports, papers.

Report Background Information: The first step in preparation of this report was to begin looking at the outline of Pain Management content developed by Dr. David Dahl for the Doctoring II course as well as review the State of Tennessee Governor's Office Pain Management Core Competencies. From there a search of USMLE content terms, the New Innovations' Curriculum database, prior delivered content reports, and speaking directly with course and clerkship directors was completed. As additional resources were identified the content report was expanded to include short and long term recommendations.

Thread Goal(s): All physicians involved in clinical patient care will encounter patients requiring pain management, either at first encounter or after procedure(s).

Physicians need to have a standard set of competencies/objectives that will allow them to identify and treat pain based on their patients' needs. Medical students should be able to achieve the following objectives related to pain management as part of their medical school curriculum (Years 1-4) and continue to refine them through residency.

Thread Objective(s): The following goals are based on the State of Tennessee Governor’s Office Release on Substance Use Disorders / Pain Management Core Competencies and have been mapped to corresponding **Institutional Educational Objectives (IEOs)** identified in parentheses. The full list of IEOs can be reviewed at: <https://www.etsu.edu/com/msec/institutionaleducationalobjectives.php>
*Pain Management Objectives correlation with Substance Use Disorder Objectives are identified with an *. This same correlation is made in the Substance Use Disorder (SUD) Thread report tying back to this PM Thread report.*

Pain Evaluation

1. Demonstrate an ability to identify the contributing physiologic, anatomic, functional and/or psychosocial sources of pain. **(IEO 2.2, 2.4)**
2. Identify the patient-specific cause(s) of pain using a targeted history, physical exam, and appropriately interpreted diagnostic test results. **(IEO 1.2, 1.4)**
3. Develop targeted treatment plans focused on attaining patient’s functional goals and quality of life. **(IEO 1.6, 1.7)**
4. Create a multimodal treatment approach directed at the identified sources / causes of the patient’s presenting pain complaint including but not limited to targeted medications, interventions, physical therapy, psychological therapy and behavioral therapy. **(IEO 1.1, 1.5, 1.8, 1.9, 2.2, 2.3)**

Treatment of Pain

1. Lay a foundation for the understanding of management of pain to include in the setting of addiction. **(IEO 2.3, 2.4, 2.5, 3.3, 3.9)**
2. Compare potential pharmacologic (e.g. over-the-counter and prescription medications) and non-pharmacologic treatment options for acute and chronic pain based on the identified or targeted pain state or mechanism. **(IEO 1.5, 2.2, 2.3)**
3. Assess indications for non-pharmacologic therapy including, but not limited to, physical therapy, chiropractic care, interventional pain management, and psychotherapy. **(IEO 1.5, 2.2, 2.3, 4.2, 4.3, 7.1, 7.2)**

Prescribing Controlled Substances

1. Demonstrate an ability to correctly construct a prescription in accordance with state and federal guidelines. Describe federal and state requirements regarding prescribing medications for pain management and substance use disorders, including the use of prescription drug monitoring programs. **(IEO 6.1, 6.2, 6.6, 1.6)**
2. Articulate the communication requirements between the prescriber and dispenser and their roles in ensuring the appropriateness of prescription. **(IEO 2.5, 7.1, 7.2 7.3 4.2, 4.5)**
3. Evaluate the various risks associated with controlled substances used to manage / treat chronic pain including: Identifying aberrant behaviors relevant to risk of substance misuse and abuse, appropriate interpretation of risk assessment tools, compliance monitoring tools (e.g., urine drug toxicology), review of prescription drug monitoring programs, and other screening tools. **(IEO 1.2, 1.4, 3.8, 3.9)**

Conflict Prevention and Resolution

1. Demonstrate empathetic and respectful communication during the clinical interaction to uncover the root issue of the conflict and work together to come to a productive resolution. **(IEO 4.1, 4.3, 4.7, 5.1)***
2. Describe confrontation de-escalation techniques and practical options to achieve a resolution consistent with safe and effective pain management (and/or treatment of substance use disorder) **(IEO 4.6, 4.7, 5.1, 5.2, 5.4)***

Acute Pain Care for Chronic Pain Patients

1. Describe the impact of opioid tolerance, including that of long acting opioids and medication assisted treatment, on acute pain treatment options. **(IEO 1.2, 1.3, 1.4, 1.5, 2.1, 2.2)*****
2. Describe the unique challenges of treating acute pain in patients receiving medication-assisted therapy (MAT) for substance use disorder. **(IEO 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2)****

Interoffice and Interprofessional Focus

1. Discuss interprofessional roles regarding the patient's transition of care. **(IEO 4.2, 4.3, 6.2, 7.1, 7.3)**

Practical Aspects of Prescribing Controlled Substances: Professional & Legal Standards

1. Evaluate specific patient needs in relation to College of Medicine (COM) identified societal issues that may affect prescribing of controlled substances: (nutrition /physical activity; education /health literacy /poverty; substance use disorder /pain management, family and interpersonal violence; health disparities /discrimination /cultural competency access to care and prescribe accordingly. **(IEO 1.2, 1.5, 1.6, 1.7, 1.9, 2.5, 3.6, 3.9, 4.6, 5.2, 5.4, 5.6, 6.2)******
2. Describe how societal biases and stigmatization regarding opioid and other substance use disorders impact the management of individuals and populations. **(IEO 2.5)******
3. Recognize one's own biases in caring for patients and clients with substance use disorders.**(IEO 3.3, 4.1, 5.5, 8.1)******

Short Term Recommendation(s):

See course and clerkship specific short-term recommendations in addition to the following short-term and long-term recommendations:

1. Review the COM identified Societal Issues and update to include Pain Management.
2. Consider requiring modules by *Providers' Clinical Support System for Opioid Therapies (PCSS-O – Management of Chronic Pain Patients* to be specified, addressed and emphasized in the preclinical years curricula.

Long Term Recommendation(s):

1. Consider including Pain Management where applicable in the short and long-term recommendations identified in the *Substance Use Disorder Thread* report. *
2. Clerkship Directors to consider development of a template for addressing Pain Management when conducting clinical rounds with patients.

Course or Clerkship Current Content and Recommended Short and Long-Term Changes are identified below in an effort to ensure there is sufficient coverage of the Pain Management content in the COM curriculum. The Short-Term recommendations are assuming the course and/or clerkship curriculum topics have been identified and are in place for the 2019-2020 academic calendar, **therefore consider including if possible**. The Long-Term recommendations assume there could be **consideration for incorporating** Pain Management content into the course and/or clerkship curriculum, beginning with 2020-2021.

The recommendations are based on a search of the Curriculum Database content, contact with course and clerkship administration, review of prior curriculum content reports, and a review of nationally recommended coverage.

Course	Current Content	Short Term Recommendations	Long Term Recommendations
M1			
Human Gross Anatomy & Embryology	Anatomy back and thorax case didactics which covers treatment of back issues ranging from not using ice to using methods to focus on fascial connections; limiting pain medication to keep patients from re-injury due to masking of pain.	Continue with didactic case discussions involving Pain Management methods.	Continue with didactic case discussions involving Pain Management methods.
Doctoring I (Generalist and Rural Track)	No pain management identified	Consider review and incorporation of a basic Pain Management discussion in Introduction to Physical Exam	Consider broadening Pain Management in Patient Communications Component, utilizing Standardized Patient encounters. Consider including Pain Management discussion in Introduction to Physical Exam
Cellular & Molecular Medicine	No pain management identified	None	None

Cell & Tissue Biology	No pain management identified	None	None
Clinical Epidemiology & Biostatistics	No pain management identified	None	None
Genetics	No pain management identified	None	None
Lifespan Development	No pain management identified	None	None
Medical Physiology	No pain management identified	None	None

Rural Health Research & Practice	No pain management identified	Consider review in the spring of Pain Management knowledge/assistance offered to students within the community followed with project in M2 year.	Consider review in the spring of Pain Management knowledge/assistance offered to students within the community followed with project in M2 year.
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M2

Course	Current Content	Short Term Recommendations	Long Term Recommendations
Doctoring II (Generalist and Rural Track)	On-line modules (3). Pain Management didactic.	Consider review of current spring delivery of Pain Management didactic to include on-line slide presentations in Doctoring II with consideration for development of Pain Management I and II sessions in Doctoring II.	Continue delivery of the Pain Management didactic sessions, breaking into Pain Management I and Pain Management II. Consider adding Pain Management cases/encounters/communication utilizing Standardized Patients
Medical Microbiology/ Immunology	No pain management identified	None	None

Clinical Neuroscience	Two hour lecture with evaluation on the neuroanatomy and physiology underlying pain mechanisms – no management <i>per se</i> but this is foundational information.	Continue with foundational information – mechanisms of pain. Continue to link common pain terminology to clinical examples.	Continue with foundational information – mechanisms of pain. Continue to link common pain terminology to clinical examples.
Pathology	No pain management identified	None	None
Intro to Clinical Psychiatry	Presentation on Behavioral Medicine discusses management of pain.	Continue to deliver pain management didactic content as part of core didactic material.	Continue with didactic content coverage of counseling patients in pain management when patient risk factors and warning signs of prescription drug disorder are present.
Medical Pharmacology	Foundational topics concerning the agents themselves: mechanisms, indications, adverse effects, contraindications, drug interactions, and metabolism. Classes of drugs covered: NSAIDS / acetaminophen Opioids / tramadol Tricyclic antidepressants Local anesthetics for neuropathic pain: Gabapentin, Pregabalin, Duloxetine	Continue to deliver foundational topics concerning the agents themselves.	Continue to deliver foundational topics concerning the agents themselves.
Rural Community Projects	No pain management identified	None	Consider Pain Management research done in the Spring (if adopted) to develop Pain Management related community project.

M3			
Course	Current Content	Short Term Recommendations	Long Term Recommendations
Transition to Clinical Clerkships	<p>Safe Prescribing workshop.</p> <p>Trauma Patient exam and resuscitation.</p> <p>Trauma Shock case.</p>	<p>Consider transitioning the Safe Prescribing workshop to one that applies fundamentals of safe prescription writing to a clinical case requiring an opioid prescription.</p> <p>Continue to cover Pain Management in the Trauma Patient exam and resuscitation and Trauma Shock case.</p>	<p>Continue with the Safe Prescribing workshop that applies fundamentals of safe prescription writing to a clinical case requiring an opioid prescription. Consider transitioning to a hands-on session as students will have had intro to Pain Management in M1 & M2 years.</p> <p>Continue to cover Pain Management in the Trauma Patient exam and resuscitation and Trauma Shock case.</p>
Community Medicine Clerkship	No pain management identified	Consider discussion of pain management during clinical rounds to include history and physical template.	Consider discussion of pain management during clinical rounds to include history and physical template.
Family Medicine Clerkship	No pain management identified	Consider discussion of pain management during clinical rounds to include history and physical template.	<p>Consider discussion of pain management during clinical rounds to include history and physical template.</p> <p>Consider delivery for all students on the role of Pharmacy staff in dispensing of Pain Medication.</p>
OB/GYN Clerkship	Nearly all students are given instruction regarding pain management in their assigned subrotations with surgical patients, but this is not assessed in any formal process (not all students are assigned to surgical rotations).	Consider development of a didactic session on Pain Management as it relates to pregnancy and include in student assessments.	Continue didactic session on Pain Management as it relates to pregnancy and continue to assess student awareness and understanding of content.

Psychiatry Clerkship	No pain management identified	None	Consider incorporating a didactic discussion into the curriculum on the role Pain Management decisions have on a patient's ability to manage other decisions. Consider adding didactic content coverage of counseling patients in pain management.
Pediatric Clerkship	No pain management identified. Adolescent Specialist retired.	Consider replacement of an Adolescent Specialist who could focus on Pain Management content coverage, i.e., Adolescent Medicine Introduction, Pediatrics Jeopardy. Consider incorporating discussion of Pain Management in the patient management plan during simulation lab experiences.	Consider replacement of an Adolescent Specialist who could focus on Pain Management content coverage, i.e., Adolescent Medicine Introduction, Pediatrics Jeopardy. Consider incorporating discussion of Pain Management in the patient management plan during simulation lab experiences.
Internal Medicine Clerkship	No didactic regarding pain management, but w/clinic rounds students encounter patients w/ chronic pain meds needing to be managed. Discussion on Pain management in clinical rounds. IM Clerkship History and Physical template.	Continue discussion of pain management during clinical rounds to include history and physical template.	Continue discussion of pain management during clinical rounds to include history and physical template.
Rural Programs Clerkship	No pain management identified	Consider development of a history and physical template that includes coverage of Pain Management.	Consider development of a history and physical template that includes coverage of Pain Management.

Surgery Clerkship	WISE MD modules. Acute Abdominal pain management didactic	Continue Post-operative rounding – discussion with patients regarding Pain Management and Transition of Care.	Continue Post-operative rounding-discussion with patients regarding Pain Management and Transition of Care.
Doctoring III	No pain management identified	None	Consider including Pain Management as a content area for small group discussion w/possible patient case presentation.
M4			
Course	Current Content	Short Term Recommendations	Long Term Recommendations
Doctoring IV/Keystone	Understanding Opiate Addiction Patient Safety, Quality Improvement & High Value Care Palliative Care Physical & Rehab Medicine; What it is, What to Treat & When to Refer	Review the details of state and federal prescribing guidelines for controlled substances with the idea being that this will be more relevant to a student’s impending residency needs. Consider asking content experts to add where applicable the discussion of Pain Management in current delivered content topics. Consider a review of Pain Management content delivered in Years 1-3.	Continue to review federal prescribing guidelines for controlled substances. Consider asking content experts to add where applicable the discussion of Pain Management in current delivered content topics. Consider a review of Pain Management content delivered in Years 1-3.
M4 Sub Internship Selectives	No specific pain management identified.	Consider being proactive about including discussion of Pain Management in Transition of Care discussions with patients.	Consider being proactive about including discussion of Pain Management in Transition of Care discussions with patients.

Background Information: a search of the USMLE content outline search identified there are more references to use disorder than to management of pain.

General Principles of Foundational Science - GP

Biology of tissue response to disease

Acute inflammatory responses (patterns of response)

acute inflammation and mediator systems (e.g., histamine, prostaglandins, bradykinins, eosinophilic basic protein, nitric oxide) vascular response to injury, including mediators

principles of cell adherence and migration (e.g., ECAMs, selectins, leukocytic diapedesis, and rolling)

microbicidal mechanisms and tissue injury (e.g., defensins)

clinical manifestations (e.g., pain, fever, leukocytosis, leukemoid reaction, chills) – **GP D1e**

Chronic inflammatory responses (e.g., tumor necrosis factor)

Reparative processes

wound healing, repair: thrombosis, granulation tissue, angiogenesis, fibrosis, scar/keloid formation

regenerative process

Multisystem Processes & Disorders - MP

Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis Signs, symptoms, and ill-defined disorders: arthralgias; abdominal pain; chest pain; cough; **MP B3b, MPB 3c**

dizziness, light-headedness, syncope, including breath-holding spells with syncope; dyspnea, shortness of breath; edema, anasarca; fatigue; fever of unknown origin; Gulf War syndrome; hemoptysis; pain management (in a nonaddiction, nonpalliative-care **MP B31** setting); joint pain; lymphedema; palpitations; pruritus; unexpected weight gain/weight loss

Musculoskeletal System - MS

Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis

Traumatic and mechanical disorders: amputation and care of amputees; backache, including low back pain; blast injuries; compartment syndrome; contractures, hospital-acquired; **MS B4b**

contusions; dislocations; fractures; sprains, strains; kyphoscoliosis, scoliosis; rotator cuff syndrome; slipped capital femoral epiphysis; dislocation of hip

Inflammatory disorders: adhesive capsulitis of shoulder (frozen shoulder syndrome); ankylosis/spondylopathy (inflammatory); bursitis; fasciitis; osteochondritis, osteochondritis dissecans; tendinitis, supraspinatus syndrome, enthesopathy of spine, elbow, ankle; temporomandibular joint disorders; fibrositis, myofascial pain **MS B1c8** syndrome; synovitis; tenosynovitis; myositis

Social Sciences - SS

Communication and interpersonal skills, including health literacy and numeracy, cultural competence Death and dying and palliative care

life support

advance directive, health care proxy, advance care planning
euthanasia and physician-assisted suicide
brain death/diagnosing brain death/diagnosing death
pronouncing death
organ donation
hospice
pain management, including ethical issues related to death and dying **SS B6h**
information sharing, counseling families
psychosocial and spiritual counseling, fear and loneliness

Nervous System & Special Senses

Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis

Neurologic pain syndromes: complex regional pain syndrome (reflex sympathetic **NS B6a**

dystrophy, causalgia); fibromyalgia; postherpetic neuralgia; phantom limb pain/syndrome; thalamic pain syndrome; trigeminal neuralgia **NS B6d, NS B6e**

Paroxysmal disorders: headache, including migraine, mixed, tension, ice-pick, cluster, medication withdrawal, caffeine withdrawal; seizure disorders, including generalized tonic-clonic, partial, absence, febrile **NS B12a**

Behavioral Health - BH

Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis

Somatoform disorders: body dysmorphic disorder; conversion disorder, including psychogenic seizures; dissociative disorders; illness anxiety disorder (hypochondriasis); malingering; pain disorder; somatic symptom disorder **BH B4f**

Substance use disorders: inhalant use disorder/intoxication/dependence/withdrawal; opioid, heroin, including prescription drug **BH B11, B11e, B11f**

Female Reproductive System & Breast - FM

Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis

Menstrual and endocrine disorders: abnormal uterine bleeding, including perimenopausal; absence of menstruation (primary amenorrhea, secondary amenorrhea including undiagnosed pregnancy); anovulation; dysmenorrhea; endometriosis; hirsutism, virilization; mittelschmerz; pelvic pain; polycystic ovarian **FM B6h**

syndrome; postcoital bleeding; premenstrual syndrome

Traumatic and mechanical disorders: Asherman syndrome; chronic inversion of uterus; chronic pelvic pain syndrome; cystocele; imperforate hymen; injuries, wounds, and burns **FM B8c**

affecting the female reproductive system and injuries, wounds, burns, and blast injuries; ovarian torsion; pelvic relaxation; prolapse, vaginal walls, uterine, uterovaginal; rectocele; urethrocele

A content and USMLE Content Outline search of the 2018-2019 COM Curriculum Database was done with the following findings:

Content Text Search:

- **Pain = IM Clerkship History and Physical template**
- Pain Management; none
- Pain Syndrome; none

USMLE Content Outline Search:

- BH B4f; none
- **BH B11 e,f;** Substance use disorders: inhalant use disorder/intoxication/dependence/withdrawal; opioid, heroin, including prescription drug = **Pediatrics Clerkship Adolescent Medicine Introduction, Pediatrics Jeopardy**
- FM B6h; none
- FM B8c; none
- FM B8c; none
- GP D1E; none
- **MP;** Multisystem Processes & Disorders = **Transition to Clinical Clerkships Trauma Patient exam, resuscitation, Trauma Shockcase;**
- MP B3b; none
- MPB3c; none
- MP B3p; none
- MP B3l; none
- **MS;** Multisystem Processes & Disorders = **Transition to Clinical Clerkships Radiology file review**
- **MS B4b;** Traumatic and mechanical disorders: amputation and care of amputees; backache, including low back pain; blast injuries; compartment syndrome; contractures, hospital-acquired; = **Anatomy back and thorax case presentations**
- MS B1c8; none
- SS; none
- **SS B6h;** pain management, including ethical issues related to death and dying = **Transition to Clinical Clerkships Safe Prescribing workshop**
- NS B6 a,d,e; none
- NS B12a; none