

IAIME Core Competencies Study Curriculum



PART ONE: Core Competencies

The following is a list of the Core Competencies (I-IX) relevant to the CMLE test offered by IAIME. The list is meant to be comprehensive in terms of topics and references are provided for more in-depth discussion of these topics. Some of the topics may require you to do your own research.

I. Biostatistics and research competencies

Key learning:

- Identify and apply strategies for differentiating high quality from low-quality research
- Identify and apply strategies for applying evidence-based research findings to opinions on medicolegal issues, causation, and disability
- Define evidence-based medicine and describe its role in the field of disability

Summary and rationale:

Evidence-based medicine can be defined as “a set of principles and methods intended to ensure that to the greatest extent possible, medical decisions, guidelines, and other types of guidance are based on and consistent with good evidence of effectiveness and benefit. (Pg. 69, AMA Guides to the evaluation of Work Ability and Return to Work 2nd Ed.)

The application of evidence-based medicine requires critical evaluation of relevant studies, point estimates, relative risk, odds ratios, confidence intervals, bias, and confounding. This section on biostatistics is essential to ensure accurate assessment of research for practice in the return-to-work arena, and when opining on causation, medico-legal issues, and disability/return to work issues. (Pg. 69, AMA Guides to the Evaluation of Work Ability and Return to Work, 2nd Ed.). Understanding the relevant

IAIME Core Competencies Study Curriculum



statistics allows us to look at data and facts, rather than relying on opinions and persuasion.

Resources:

- Chapter 5 in the AMA Guides to the Evaluation of Work Ability and Return to Work, 2nd Ed. book, Chapter 2 in the AMA Guides to the Evaluation of Disease and Injury Causation, 2nd Ed. book

Study guide:

- **Data sources and study designs:** understand literature pyramid and the relative value of study types (RCT, double-blinding, retrospective, prospective, etc.)
- **Epidemiology:** basic terminology, nature of the study, target population, type of study (e.g., retrospective vs. prospective)
- **Bias:** definition, three main categories – (selection, information and publication -Ch 5), methods for controlling
- **Descriptive statistics:** statistics for concisely summarizing data; mean (average), median, mode, standard deviation, range, sample size.
- **Inferential statistics:** statistics applied to a random sample of data from a specific population, in order to make inferences about the population; normal distribution, correlation, t-distributions, chi-square, confidence intervals, regression analysis/linear regression, factor analysis
- **P-value:** the extent to which a particular result is (and is not) likely due to random variation (chance); definition, p values, thresholds for significance
- **Validity, reliability, precision, accuracy:** definitions, relationships between them, measurement
- **Sensitivity, specificity, base rate, positive predictive value, negative predictive value:** related to classification and diagnostic

IAIME Core Competencies Study Curriculum



accuracy; definitions, relationships, applications to understanding measures used in the diagnosis

- **Relative risk/Risk Ratio (RR) and odds ratio (OR):** definitions, distinctions, threshold values for relevance

II. Clinical competencies (History and Physical Examination; General and Musculoskeletal Anatomy and Diseases; Occupational vs. Non-occupational Risk Factors)

Key learning:

- Describe the key components of a clinical examination for independent medical opinion and other work-relevant clinical purposes
- Describe the importance of the interview and the significance of medical history as documented in the medical records
- Understand the contribution of non-occupational risk factors to a condition

Summary and rationale:

Competence in disability medicine involves the appropriate application of clinical competence across a variety of evaluations and assessment of treatment in the context of workplace absence and return to work.

Causality examinations, examinations undertaken for impairment ratings, and other services delivered in medico-legal circumstances differ from a traditional clinical evaluation and treatment. Examination findings must be interpreted in terms of relevance to daily activities, including those required to perform job-related functions. A more detailed history and review of records are necessary. Clinical examination will frequently include adjacent joints, contralateral side and specific measurements/ clinical tests. For example: in a case of an injured Right shoulder, the examination of the Left shoulder is necessary to establish normal - and examination should include the cervical spine.

IAIME Core Competencies Study Curriculum



Resources:

- General medical resources re: physical examination findings and imaging
- *AMA Guides to the Evaluation of Disease and Injury Causation*, 2nd Ed.
- The State of Washington Department of Labor & Industries Medical Examiners' Handbook (<https://www.lni.wa.gov/forms-publications/F252-001-000.pdf>)

Study guide:

- **History and physical:** including but not limited to:
 - Cultural awareness, detailed documentation, handedness
 - Extremity evaluation: document bilateral findings; uninjured contralateral side may serve as a baseline for defining normal for impaired extremity
 - Validity indicators: Waddell's signs, behavioral observations, formal assessment, documentation
 - History of previous injuries, illnesses, surgeries
 - Relevant psychosocial history
 - Consistency: between self-report and medical records, between providers, across time, between symptoms and signs, between stated capacity and behavioral observations
 - Two-point discrimination, sensation, sensibility
 - When are clinical tests such as SLR and Spurling's considered positive - what do they test?
 - Circumferential measurements
 - Joints matched with provocative maneuvers
 - Nerve Roots matched to DTR, Myotomes, and Dermatome
- **Other data analysis:**
 - Imaging and labs: review of available imaging/ labs; obtain necessary imaging for personal review
 - Differential diagnosis: hip pain vs. sciatica, neck vs. shoulder pathology, decision trees, rule-outs

IAIME Core Competencies Study Curriculum



- Motor evaluation: Grip strength, dexterity, motor speed; normal distribution, dominant vs. non-dominant expectation, variability over trials
- Functional correlations: ADLs, IADLs, work tasks
- **Common musculoskeletal/ neurologic disorders and relevant occupational vs. non-occupational risk factors:** neck pain, low back pain, shoulder (RCT); dislocations of large joints; radiculopathy, peripheral nerve entrapment, dupuytren's, carpal tunnel syndrome, ganglions, avascular necrosis (AVN), CRPS
- **Common medical conditions and relevant risk factors:** inflammatory arthritides (i.e. Gout), lung conditions (i.e. Asthma, Asbestosis), vestibular dysfunction, hearing loss, visual system, diseases matched with anatomical findings
- **Common psychiatric condition and relevant risk factors:** PTSD, adjustment disorder, depressive disorders, anxiety disorders, personality disorders, somatic symptom disorders

III. Work-ability and return to work – principles

Key learning:

- Describe the key components considered in a return to work assessment
- Describe the differences between risk, capacity, and tolerance
- Describe the risk factors for failure to return to work
- Describe the role of non-occupational risk factors and psychosocial factors in returning an injured worker to work

Summary and rationale:

The AMA Guides to the Evaluation of Work Ability and Return to Work, 2nd Ed., outlines the importance of staying at work or returning to work and how

IAIME Core Competencies Study Curriculum



to think about work ability and restrictions. The distinction between risk, capacity, and tolerance and limitations is important, and often overlooked. For the physician, objectivity is important with respect to identifying objective medical conditions that preclude specific activities vs. the individual's reported tolerance for activities and self-limiting behavior.

Resources:

- AMA Guides to the Evaluation of Work Ability and Return to Work

Study guide:

- Why staying at work or returning to work is in the patient's best interest (Ch 1)
- **Negative prognostic factors** associated with delayed return to work, delayed recovery
 - Individual risk
 - Job risk
 - Psychosocial risk
- **Positive prognostic factors** associated with timely return to work, recovery
 - Resilience
 - Employer support
 - Psychosocial support
- **Definitions:** disability, activity, participation, activity limitation, participation restriction
- **Risk, capacity, tolerance**
- **Job strain**
- **Functional Capacity Evaluation:** definition, methods, value, validity
- **Dictionary of Occupational Titles:** sedentary, light, medium, heavy, very heavy
- **Work demands:** occasional, frequent, constant

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IV. Cognitive and psychological demands: assessment, impact Causation Analysis – principles

Key learning:

- Describe the key components of a causation analysis
- Describe the importance of a reproducible methodology for determining causation
- Describe the differences between medical and legal causation

Summary and rationale:

Medical causation differs from legal causation and this distinction is important. The determination of medical causation is based on a scientific analysis using a standard methodology, discussed at length in the AMA Guides to the Evaluation of Disease and Injury Causation, 2nd Ed.

Legal causation refers to the threshold standards of the jurisdiction i.e. reasonable or simple medical probability (>50%), probable versus possible, more probable than not, or an iota of contribution. In some states, the incident need only be a contributing cause.

As an expert, the criteria used to reach an opinion regarding causation and work-relatedness must be clear.

Resources:

- AMA Guides to the Evaluation of Disease and Injury Causation, 2nd Ed.
- ACOEM Guidelines, Work Relatedness, William W. Greaves, MD, MSPH, Rajiv Das, MD, MPH, MS, Judith Green McKenzie, MD, MPH, Donald C. Sinclair II, JD, and Kurt T. Hegmann, MD, MPH

Study guide:

- **Causality:** types of causation, definitions, applications to IME

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- A causal event took place
 - Individual experiences a condition (exposure)
 - The event can cause the condition (epidemiological analysis)
 - The event caused or materially contributed to the condition within medical probability (causation analysis)
- **Hill criteria**
 - **Medical causation vs. legal causation:** definitions, distinctions, language, jurisdiction-specific standards
 - **Pre-existing conditions**
 - **Aggravation vs. Exacerbation**
 - **Methodology for Determining Work-Relatedness/ Causation**
(AMA Guides to the Evaluation of Disease and Injury Causation, 2nd Ed.)
 - Diagnosis: evidence of disease
 - Epidemiology
 - Evidence of exposure
 - Other factors
 - Validity of testimony
 - Conclusion
 - **Occupational vs. Non-Occupational Risk Factors for Common Conditions (e.g., carpal tunnel, low back pain, CRPS, TBI)**
 - **Apportionment:** allocation of causation among multiple factors

V. Report Writing

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Key learning:

- Describe the core elements of a thorough report for medico legal purposes, and features of the variations based on specific settings (e.g., workers compensation, public disability, private disability, accident/personal injury, etc.)
- Describe the features of language, presentation style, and tone that are important to promote the integrity of the report and maximize the credibility of findings

Summary and rationale:

Independent medical evaluations and record reviews are intended to present an unbiased assessment of the individual's complaints and physical examination findings. History, physical examination findings, past medical history and the other standard parts of an evaluation should be documented clearly. Opinions related to diagnosis, causation analysis, return to work, etc. should be clear and concise, and may contain references to support those opinions.

Resources:

- IAIME materials
- The State of Washington Department of Labor & Industries Medical Examiners' Handbook (<https://www.lni.wa.gov/forms-publications/F252-001-000.pdf>)

Study guide:

- **Language:** choice of words that reflect bias, all-or-none language, modifiers (inflators and minimizers), perjorative terms
- **Identifying inconsistencies:** symptom report, history, medical records, examination findings, expected course of recovery, behavioral observations, daily activities
- **Jurisdictional language:** reasonable degree of medical probability, reasonable degree of medical certainty, more probable than not

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- **The rationale for using references (or not):** “authoritative text,” citations, guidelines, AMA texts (pro/con)

VI. Opioids and Pharmacology

Key learning:

- Describe the key pharmacology (& psychopharmacology) of opioids and other analgesic medications, with appropriate uses, misuses, and potential abuse
- Identify and describe the key features of relevant guidelines for the use of opioid and other analgesic medications
- Describe the current state of knowledge about, and uses of marijuana and derivatives (including cannabinoid/CBD and psychoactive/THC components)

Summary & rationale:

Pain is a common part of medicolegal claims and evaluations, and because of that claimants are often taking analgesics, including opioids. Medicolegal evaluators need to be aware of the basic pharmacology of these medications, current guidelines for appropriate use, and how to address the impact of these medications on examination findings. Knowledge of alternative analgesics (e.g., NSAIDs, acetaminophen), with indications and contraindications is also necessary, as is an understanding of medications used for neuropathic pain. Finally, with the growing use of medical marijuana, recreational marijuana, and cannabinoids, medicolegal evaluators should be aware of the current state of research on the use of these drugs.

Resources:

- CDC Guideline for Prescribing Opioids for Chronic Pain – United States, 2016. Recommendations and reports/ March 18,2016 / 65(1); 1-49

Study guide:

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- **Long-term use of opioids for non-malignant pain**
 - Hyperalgesia
 - Opioid use disorder (definition)
 - Physical dependence, tolerance, addiction (definition)
- **Indications for appropriate use of opioids**
- **Indications and pharmacology for NSAIDS**
- **Indications and pharmacology for anticonvulsant medications in treating pain**
- **Guidelines for analgesic medications**
- **Current state of knowledge for cannabis-related drugs**

VII. Impairment ratings:

Key learning:

- Identify definitions and common features of impairment ratings, their applications, and potential misuses
- Describe and be able to apply the key edition-independent methods for evaluating and rating impairment

Summary and rationale:

Impairment ratings are designed to assess objective findings associated with a condition, rather than subjective complaints, although the ability to perform ADLs may be taken into consideration, depending on the version of *the Guides* being used. In some jurisdictions, chronic pain may be rated, in other jurisdictions, it is excluded, as are functional limitations. Some features are edition-specific, and others are general principles that apply across editions and systems. Medicolegal evaluators should also have a working knowledge of alternative methods for determining impairment, including jurisdiction-specific methodology and the WHO approach to identifying and describing impairment and disability.

Resources:

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- *AMA Guides to the Evaluation of Permanent Impairment*

Study guide:

- Maximum medical improvement (MMI): definition, evaluation, and applications
- ADLs and IADLs vs. other activities, including driving as a special case
- Range of motion measurements
- Extension lag versus flexion contraction
- Digit/thumb % of hand, and % of UE, etc.
- Adding joints versus combining
- Pulmonary function tests and impairment
- Hearing impairment
- Visual impairment
- Principles for calculating impairment ratings, and general differences between editions of the *AMA Guides*
- General knowledge of jurisdiction-specific impairment ratings, including for federal employees
- Including a demonstration of how an impairment rating was determined, for including in a medicolegal report

VIII. Ethics and Medicolegal

Key learning:

- Describe the nature of an ethical dilemma, and the principles for resolving them
- Identify the key ethical concerns that can arise in medicolegal evaluations

Summary and rationale:

A medicolegal evaluator is obligated to make clear to the examinee that he or she is not providing care at the time of the evaluation. Although a physician-patient relationship is not established - and a disclaimer stating

IAIME Core Competencies Study Curriculum



that should be part of the IME report - some jurisdictions have found that there is still an obligation to the examinee, with respect to medical conditions that might be unrelated. There is an inherent potential ethical conflict in being both an evaluator and treating provider, but despite this, compensation systems often require a level of overlap that poses challenges to health providers. Beyond these issues that are specific to medicolegal evaluations, other professional ethical principles continue to apply, and a competent evaluator should be aware of potential ethical concerns, as well as strategies for managing them.

Resources:

- IAIME materials
- Ebrahim S, Sava H, Kunz R, Busse JW. *Ethics and legalities associated with independent medical evaluations*. *CMAJ*. 2014;186(4):248–249. doi:10.1503/cmaj.131509. (free on PubMed)
- <https://www.ama-assn.org/delivering-care/ethics/work-related-independent-medical-examinations>
- https://ama.com.au/sites/default/files/documents/Ethical_Guidelines_for_Conducting_Independent_Medical_Assessments.pdf

Study guide:

- Ethical behavior for engaging with patient/examinee
- Conflict of interest between treating and examiner roles
- Duty of care and identifying medical conditions other than IME-related diagnosis
- Methods for identifying and resolving ethical conflicts
- Define and apply the concepts of an ethical dilemma

IX. Psychology and Behavioral Health

Key learning:

IAIME Core Competencies Study Curriculum



- Identify the differences between psychiatric diagnoses, psychological symptoms, and psychosocial risk factors
- Identify strategies used for screening psychological symptoms and common psychosocial risk factors that impact medicolegal claims
- Describe the differences between screening measures and diagnostic tools for psychological symptoms and conditions

Summary and rationale:

One of the most significant developments in our understanding of chronic pain, and more generally of issues related to delayed recovery and return to work, is the application of a biopsychosocial understanding of conditions evaluated in a medicolegal context. The principles inherent to the biopsychosocial model apply to all conditions, whether there are obvious psychiatric issues or not.

In addition, the *AMA Guides to the Evaluation of Permanent Impairment*, 6th Ed., has a chapter that provides definitions for use in IMEs and impairment rating of psychiatric issues, and editions differ in how to evaluate and rate pain, which inherently involves psychological and social concerns, in addition to medical conditions. A competent medicolegal evaluator does not have to be an expert in diagnosing and treating psychiatric conditions, but should be able to identify potential psychiatric conditions, psychological symptoms, and/or psychosocial factors that are relevant to the evaluation and that may require the attention of a behavioral health professional.

Study guide:

- Definition/ etiology of chronic pain (AMA Guides to the Evaluation of Permanent Impairment, 6th Ed.)
- Definition of chronic pain *syndrome* (AMA Guides to the Evaluation of Permanent Impairment, 6th Ed.)
- Pain behaviors: facial expression, body habitus, reactivity to touch
- Risk factors for transition from acute to chronic pain (AMA Guides to the Evaluation of Permanent Impairment, 6th Ed.)

IAIME Core Competencies Study Curriculum



- Definition of and strategies for identifying malingering, symptom exaggeration, and inadequate effort
- Common psychiatric conditions that may be comorbid with, and complicate, other medical conditions in medicolegal claims
- Common screening measures for psychological symptoms/psychiatric conditions
- Common screening measures for psychosocial risk factors in delayed recovery and return to work