

Biostatistics, Epidemiology and Evidence-Based Medicine (EBM) Thread Report

The following summarizes what all of the students in the medical school receive in these subject areas, followed by recommendations. Reference year for this report is 2016-2017. Supplementary material provided is USMLE content outline for this material and the course syllabus for MEDU 1312 Spring 2017

MEDU 1312 Spring 2017: 24 contact hours

This represented the largest component in the curriculum and included elements of biostatistics, epidemiology and evidence-based medicine (EBM).

There was a final project and homework that added an estimated 12 hours to the total, multiple quizzes, final exam etc. The course has now been moved to a different time in the curriculum.

Case oriented learning: 2 contact hours

All 72 students have a 2 hour workshop on EBM presented by the medical library staff with exercises that are evaluated.

Microbiology: 1 contact hour

Herd immunity and vaccines using EBM principles with evaluation

Pharmacology: Approximately one hour devoted to number needed to treat vs. number needed to harm (EBM)

Practice of Medicine: 2 contact hours

Most cases incorporate issues related to disease epidemiology and operating characteristics of diagnostic tests. Some cases address recommendations and level of evidence for supporting data. Some evidence based clinical decision-making tools such as CURB-65 in pneumonia are introduced. Evidence based principles are incorporated into simulation lab exercises.

Community Medicine clerkship: 4 contact hours in epidemiology

All generalist students do an epidemiology project under the tutelage of Rick Wallace using actual Tennessee county databases. First, he instructs them in how to access the data, then gives them a project. They present the project to Drs. Wallace and Florence who evaluate. Between instruction and evaluation, they spend a minimum of 4 hours on this. All rural track students perform a similar project presented to the same two faculty. Dr. Florence estimates rural track students spend more than 4 hours.

Family Medicine clerkship: 2 hours in EBM, 2 hours supplementary didactics

A one hour lecture that included elements of EBM, biostatistics and epidemiology and an in-service from Dr. Wallace about practicing EBM at the point of care. Also, there are 2 hours of didactics, but I am not clear on the evaluation.

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There were approximately two hours in which the generalists were shown how to address a clinical question in PICO format and then practiced searching a clinical problem in that format themselves.

Pediatrics clerkship: Small increments of EBM in CLIPP cases adding up to an hour. The CLIPP cases substitute for a textbook and have quizzes. EBM criteria are used for treatment recommendations for Kawasaki, febrile neonates, indications for an LP, antibiograms, Rx of bronchiolitis, asthma, etc.

Ob/Gyn clerkship: Approximately one hour of EBM based didactics including infertility, no evaluation.

Internal Medicine clerkship: <1 hour as part of a presentation on cardiac rehab, no evaluation.

In summary, there are about approximately 40 total hours provided in the first three years. There was nothing that was related to me that would count in surgery or psychiatry in the third year. There does not appear to be anything that is uniformly delivered to the entire class or a substantial majority of it in the fourth year.

Conclusion and Recommendations: The foundational course is very good. The additional material in epidemiology in year 3 is also very good and fits well with our institutional mission. Evidence-based medicine material is included where appropriate in year 2, particularly in Practice of Medicine. Certain clerkships in the 3rd year have thoughtfully included repetitions of evidence-based medicine principles in their didactics (e.g., pediatrics, community medicine, family medicine.) This is well done. Since a key objective in this thread would appear to be the creation of life-long learners utilizing evidence-based medicine, increasing the repetition of EBM principles in the 2nd 3rd or 4th years might be desirable.

- Incorporate evidence- based medicine principles into revamped doctoring courses
- Where possible and feasible, get clerkships that don't at present have a didactic session that incorporates a topic that benefits from a use of EBM principles to develop one
- If M3 students are brought back to campus for small group sessions as part of a course in the third year, consider devising means for them to review EBM practices in those sessions (journal clubs, etc.)