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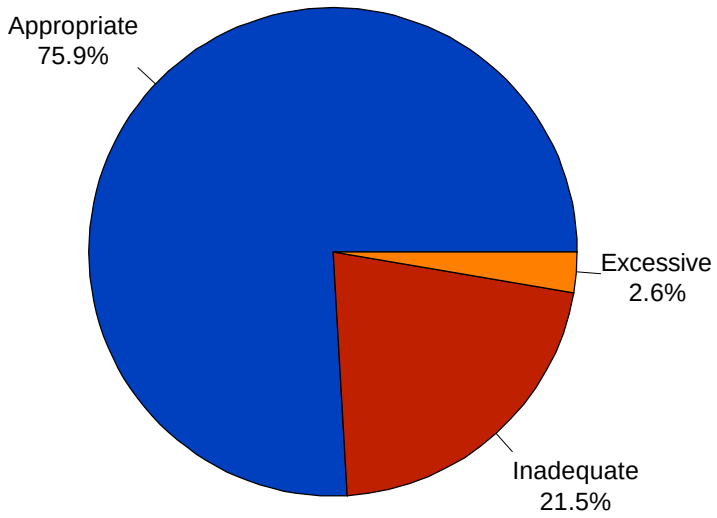
Evidence Based Medicine Instruction

Evidence Based Medicine (EBM) has become an increasingly important topic in recent years. As a consequence, medical schools are developing educational instruction in EBM, and in associated subject matter such as decision analysis, interpretation of laboratory results, and interpretation of the literature.

Figure 1: EBM Instruction in U.S. Medical Schools (1999)



1999 AAMC Medical School Graduation Questionnaire

What is EBM?

EBM can be defined as "the conscientious, explicit, and judicious use of the best evidence in making decisions about the care of individual patients."[1] That is, EBM attempts to integrate individual clinical expertise with evidence from externally conducted systematic research.

EBM comprises a set of skills that medical students are expected to acquire as part of a new approach to the practice of medicine. The EBM curriculum represents a shift toward a more problem-solving curriculum with an emphasis on information gathering and analysis, and consists of, among other important elements, "understanding certain rules of evidence . . . to correctly interpret literature on causation, prognosis, diagnostic tests, and treatment strategy."[2]

- Most medical schools (88%) offer the opportunity to learn EBM skills to their students.
- Over half of 1999 medical school graduates do not feel confident using statistical packages such as SAS and SPSS. Two areas of instruction identified as being inadequate by over one quarter of medical school graduates were interpretation of clinical data/research reports and literature reviews/critiques.
- Over three-quarters of 1999 medical school graduates felt the amount of instruction time devoted to EBM was appropriate.

Current Status of EBM in Medical Schools

According to AAMC's 1999 Medical School Graduation Questionnaire (GQ), recent US graduates felt that the time devoted to instruction in EBM was, in general, adequate.[3] Over three- quarters of 1999 medical school graduates indicated the amount of instruction in EBM was appropriate (75.9%), while 2.6% thought it was excessive and 21.5% felt it was inadequate (see Figure 1).

In addition to asking students about their overall impression of EBM in the curriculum, they were all asked about several EBM related areas: interpretation of clinical data, laboratory results, research reports, literature reviews/critiques, and decision analysis. Figure 2 indicates students' views on these topics. The majority of students indicated that instruction time was appropriate, however, up to 27.2% indicated inadequate time was being spent on these topics.

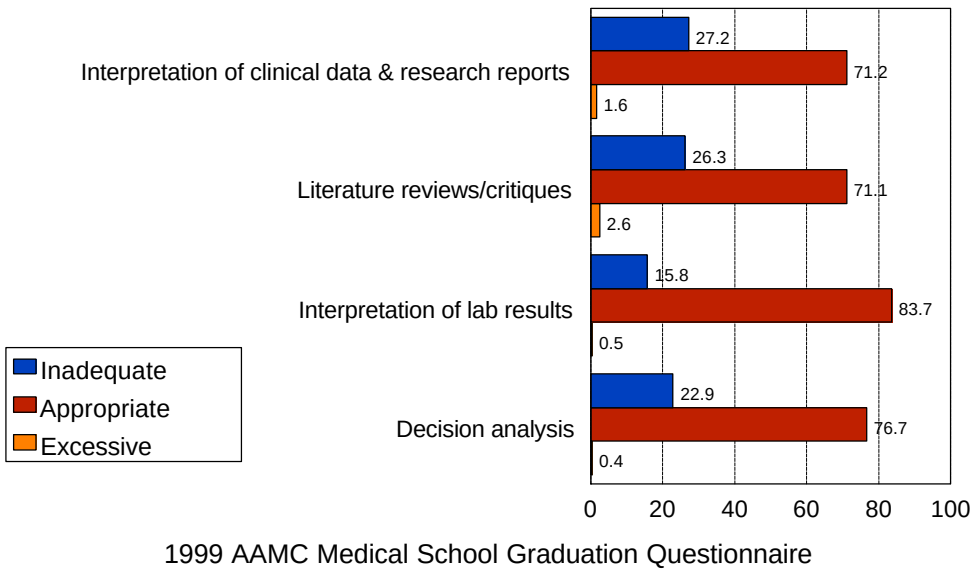
Active EBM Programs

There are 110 medical schools (88%) teaching EBM and its related subjects.[4] Of these schools, 5 teach EBM as a separate required course, 101 teach it as part of a required course, 10 offer EBM as a separate elective course, 28 as part of an elective, and 12 schools offer other ways of

learning about EBM, such as special projects.

Schools have developed a number of programs to address teaching EBM. McMaster University has a long established and well-known program (see their website for more information <http://hiru.mcmaster. ca>). The Medical University of South Carolina (MUSC) offered an introduction to clinical reasoning and EBM as a separate course for second year students in Spring 1999. The course includes sessions on how to use articles about a variety of subject matter, including papers about therapy, diagnostic tests, and harm. The course syllabus includes a packet of articles used throughout the semester to teach about EBM terms and statistics used in analysis. MUSC plans to offer additional courses and to further integrate EBM into the curriculum.

Figure 2: 1999 Graduating Students' Satisfaction with EBM Related Instruction



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At Mt Sinai School of Medicine, EBM is included in all four years of undergraduate medical education (see <http://academic.mssm. edu/medschool>). In the first year, students are oriented to the library and information systems; these resources are used for EBM instruction in the following years, including during the clerkships and a fourth year project.

The University of Virginia also utilizes a longitudinal EBM strategy. The program extends from the second year epidemiology course through the Community Based Continuum that includes a second year preceptorship (one week), third year clerkships (one month of Family Medicine and one month of Internal Medicine), and fourth year electives. During these electives, students are required to select complex questions that involve difficult literature searches, designing potential clinical studies, or delving more deeply into an aspect of EBM (see <http://www.hsc. virginia.edu/med-ed /MedEdHome.html>).

In addition to these programs, there are a number of resources on the World Wide Web for EBM. The Centre for Evidence-Based Medicine provides a site that is up-to-date and has some useful links for those interested in EBM, <http://cebm.jr2.ox.ac.uk>. Another potentially useful EBM resource is located at URL: <http://www.medlib.iupui.edu/ebm/ home.html>.

Conclusion

Teaching about and providing an opportunity to apply EBM in clinical settings is a challenge for all medical schools. As new programs develop, the opportunity to learn from those programs may offer new methods to meet that challenge.

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References

[1]Sackett, D.L., et al., "Evidence-based medicine: what it is and what it isn't." 1996, BMJ 312(7023): 71-72.

[2]The Evidence Based Medicine Informatics Project, "Evidence Based Medicine: A New Approach to Teaching the Practice of Medicine." URL: http://hiru.mcmaster.ca/ebm/overview.htm.

[3]Rates represent preliminary GQ data, n=12,345.

[4]Derived from the LCME Part II for 1997-98.