Commentary

Public health education for medical students: reflections over the last two decades

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When evidence is lacking, decisions are usually made on the basis of common sense and experience. When I started teaching clinical epidemiology in 1989, there was no thing such as evidence-based medicine (EBM) and tomorrow’s doctors had yet to appear. Public health medicine was an extremely marginalized discipline with a low profile, both within the medical profession and the broader public arena. Things have changed. Now even my most skeptical clinical colleagues begrudgingly accept that a medical student in the twenty-first century must be proficient in the critical appraisal of evidence, understand concepts such as the numbers needed to treat (assuming they know what that is) and have some understanding about global threats to health from climate change to pandemics. Public health educators have often been pushing on an open door. Despite this newly won respect, educational tensions, some old and some new, persist and have been usefully highlighted by Gillam and Maudsley.1 I have focused on some of what I feel are key topics and what follows is purely ‘opinion-based’.

What is the best method to teach epidemiology and public health?

This is fundamentally a pedagogical question, which is not unique to epidemiology and public health or even medical education. I have never worked within a true problem-based learning (PBL) curriculum but have always felt that clinical epidemiology should be taught through the use of a case vignette or public health scenario, which would be conducive to PBL. On the other hand, I have observed how a charismatic and passionate academic teacher can convert even the most numerophobic2 and cynical student to see the relevance of epidemiology and even enjoy it; a formidable task for a non-specialist facilitator. I fully agree with the consensus statement that there is no one right approach and this should ideally be tailored to the needs and maturity of the students. My experience of young students straight from school suggests that most benefit from the initial presentation of ideas and concepts in a focused discipline specific setting, which as they progress in their training, can be integrated across disciplinary domains. The ideal curriculum would allow students to choose the approach that was most suited to their needs. This can be accomplished within an e-learning platform where one can customize the navigation tools but is not well suited to the complexities of a medical curriculum.

Evidence-based medicine and/or public health?

A recent BMJ editorial highlighted how EBM can be embedded in the medical curriculum.3 In Bristol, we cover clinical epidemiology with some limited public health exposure in year 1 and then again in a combined Public Health and Paediatric unit in year 4 of the curriculum. In addition, EBM is a vertical theme, which is integrated (with varying success) across all 5 years. Epidemiology is the scientific basis that underpins both EBM and public health. Students more easily relate to clinical scenarios while finding the ‘bigger’ picture public health issues more intangible or simply frustrating. Diagnosing and treating disease is how they see their future
role. Tackling inequalities in health, even though they appreciate its relevance, is something they feel that is beyond their realm, though clearly equity of access to the NHS is something that may influence in their future careers. Topics such as screening provide a useful interface between public health and clinical care and thus help bridge the divide.

**Who should teach epidemiology and public health?**

A recent UK survey highlighted that EBM teaching was led by either epidemiologists or public health physicians in 70% of Medical Schools. In my view, EBM teaching could be led by anyone, as long as they have the appropriate training and enthusiasm, but it seems reasonable that the core principles and concepts are taught by those who are expert and academically active in this field, which is often methodologists and clinical epidemiologists. It is then up to non-academic clinicians to demonstrate the application of these principles in the ‘real world’. Not every clinician will rise to this challenge, but as medicine is an apprenticeship, this is adequate as long as students have some exposure over their training to this sort of approach. In Bristol, we believe it is important that students also get taught by service Public Health staff, so that they are aware of the discipline which for some may be a career option. Consultants or trainees deliver specific lectures covering their area of expertise, e.g. outbreak control. We have stopped short of sending students to PCTs or public health departments, as we remain unconvinced as to the additional educational value of such placements given the administrative complexities of organizing such attachments.

A recent GMC visit to Bristol recommended that we needed to get more public health teaching at the ‘bedside’. My hospital and general practice colleagues repeatedly complain about simply teaching students the basics of clinical skills and therapeutics. Integrating EBM is hard enough, though this lends itself to clinical teaching. They are unlikely to be receptive to the imposition of also covering public health. However, I suspect that many clinical teachers implicitly cover topics such as screening, the burden of disease, risk factor identification and instituting primary/secondary prevention strategies. Supporting this activity with appropriate guidance is important and instituting primary/secondary prevention strategies.

What should be covered at an undergraduate and postgraduate level?

We should never forget that medical school education only makes up a small part of an individual’s total learning experience. Students come to medical school with pre-existing attitudes that may be positive, negative or simply neutral to public health as a topic. Their postgraduate experience, especially clinical role models, will do much to shape their future attitudes. I have been heartened on more than one occasion when meeting a former medical student who is now several years post-qualification and they inform me that they now truly appreciate what I was trying to teach them (this may of course be simple ‘selection bias’). No matter how good a teacher you may be, it takes time and experience for many doctors to appreciate a population-based approach and some never quite get there. A few years back, the person responsible for our clinical finals asked if we could drop an OSCE station I had designed which involved data interpretation and communication skills around relative and absolute risks. He was concerned that there were several core clinical skills that were not being covered and reluctantly felt that my station was the most expendable. I agreed with him. Of course it should not be an either/or option, but there are plenty of postgraduate training opportunities and this may be a far more receptive period for applied public health.

My own limited experience in educational research highlighted the difficulties in ever producing an evidence base to help us address the above topics. This makes us more vulnerable to the whims and fashion that may shape medical education. Consensus opinions are useful in suggesting minimum standards and competencies, but there is unlikely to be a simple answer that suits the needs of all teachers and students. Imposing any rigid system will not only suppress innovation, but may actually result in worse not better education. Many routes can lead to the same destination; it is getting there that is important.

**References**