[The authors respond:]

Since we believe in the redemption of ignorance and the forgiveness of sinners, we feel compelled to reply to Mr. Ellis's diatribe. Neither of us has ever received a penny from the tobacco industry. Indeed, one of us (W.K.M.) has been at the receiving end of abusive and vituperative letters from the United Mine Workers of America, the Tobacco Institute and sundry other anonymous sources following publication of a paper in *JAMA*. That article showed that the chief cause of respiratory disability in US coal miners was cigarette smoking.[1]

Ellis's self-righteousness ill becomes him. The US legal profession does not have a reputation for generosity or for providing free legal advice. True, it has a contingency fee arrangement that has been described this way: "If I lose, my lawyer gets nothing; if I win, I get nothing."

In any case, it should have been evident from our letter that we despise the tobacco industry. The last paragraph of the letter began with the following statement: "We loathe and detest tobacco companies for their evasion, lies and attempts to trick adolescents and others into taking up smoking." Hardly an attempt to curry favour with the tobacco industry!

Finally, we both read the medical literature. Because of our background and training, we may be in a better position than Ellis to judge its validity.

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Competing interests: None declared.

Reference

1. Morgan WKC, Lapp NL, Seaton D. Respiratory disability in coal miners. *JAMA* 1980;243:2403-4.

Finding the right words

For those of us who have experienced the scene described by Catharine Dewar,[1] her poem paints a picture that is accurate, sympathetic, tender and, in the final lines, so humble and true. For what, indeed, are the right words, the best words, the kindest words to say to the survivor when someone dies? After 50 years in medical practice, I have not found the answer either.

Gordon Murray, MD
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Reference

1. Dewar C. The moment of passing. *CMAJ* 1998;159(6):693.

Two solitudes

The editorials on the nature of evidence in medicine[1–3] present timely comment on the divergent views being urged upon harassed practitioners of medicine, those who treat the Mrs. Joneses of this world. I have been privileged to spend the nearly 40 years since I completed my undergraduate medical degree in various academic environments, where opportunities for "keeping up" have been optimal. My sympathy for those working in clinical practice has only increased.

As the clamour surrounding evidence-based medicine has grown, intimate knowledge of human biology has exploded. But increasingly these have become two solitudes. Evidence-based medicine provides more clinical trials that might illuminate decision-making for Mrs. Jones, while basic biology tells us more that is of unknown clinical relevance about Mrs. Jones herself.

While I read with interest Richard Horton's description of Toulmin's work, I found the presentation unsatisfactory. First, there was no mention of Rev. Bayes, whose theorem formalizing decision-making in terms of prior and posterior probabilities contributes powerfully to clinical decision-making. Second, Horton gives us the example of "a 56-year-old man with retrosternal pain," but there is no such patient. There is only Mr. Jones, age 56 years, a medical history with details relevant to the presenting retrosternal pain, and a functional inquiry to illuminate the patient's present health. Within 10 minutes, a canny physician subconsciously using combinations of Bayes' and Toulmin's logic, along with other heuristics, will have myocardial infarction in mind, and on that will base immediate management and further testing. Horton does not do justice to the studies of clinical decision-making already available.

My second comment concerns medical education. Academic medicine has accepted evidence-based medicine into clinical teaching at the undergraduate level but has failed to help current graduates to incorporate the concepts of basic biology into clinical problem-solving. The General Professional Education of the Physician report[4] urged a reduction in the amount of detailed fact taught in basic science classes and urged instead that students be taught "broad concepts." There has certainly been a reduction in the time devoted to the basic sciences, and it seems likely that less detail is being taught. But I know of little evidence that broad concepts have been identified, let alone that they are being taught. Further, I know of no evidence to indicate that students in undergraduate medical programs are learning their basic science so that they will be better able to make decisions regarding Mrs. Jones.

The medical practitioner is awash in a sea of information and desperately needs help. The evidence-based medicine movement has made an important contribution to clinical decision-making but alone it is incomplete. Academic medicine must work much harder to unite the two solitudes. Clinical decision-making is at

least as difficult as calculus, but it must be learned rigorously from the moment of entry into medical school; neither basic science nor the data from clinical trials should be presented in isolation from clinical problems nor separately from a rigorous decision-making process.

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References

1. Hoey J. The one and only Mrs. Jones [editorial]. *CMAJ* 1998;159(3):241-2.
2. Davidoff F. The future of scientific medicine [editorial]. *CMAJ* 1998;159(3):243-4.
3. Horton R. The grammar of interpretive medicine [editorial]. *CMAJ* 1998;159(3): 245-9.
4. Panel on the General Professional Education of the Physician. *Physicians for the twenty-first century: the GPEP report*. Washington (DC): Association of American Medical Colleges; 1986.

[Frank Davidoff replies:]

Dr. Sweeney has put his finger on an important "missing link" in the great chain of medical evidence: the lack of adequate teaching. For although a few controlled studies[1] have demonstrated the effectiveness of teaching rigorous approaches to clinical reasoning (including Bayesian analysis), the science of clinical decision-making still receives far less recognition in medical school and postgraduate curricula than it deserves. Unfortunately, enthusiasm for such teaching is dampened by the difficulty of applying our current formal decision analytic techniques at the bedside (an experienced consulting service at Tufts-New England Medical Center in Boston found that most full decision analyses of individual clinical decisions required about 2 weeks of effort by a clinical fellow [personal observation]). It may be more realistic to think of decision science as an imaging technique for visualizing medical reasoning[2] and employ it as we do other basic sciences such as anatomy, rather than as a clinical science such as surgery.

Our lack of understanding of the role that basic biological knowledge actually plays, and the role it should play, in clinical work is little short of scandalous. The small number of studies that have examined this question empirically have concluded that the use of basic biological knowledge by experienced clinicians is minimal and indirect.[3] Sweeney is therefore quite justified, I believe, in questioning whether basic science, at least as we now teach it, is a necessary part of medical education.[3]

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References

1. Davidoff F, Goodspeed R, Clive J. Changing test ordering behaviour. A randomized controlled trial of a probabilistic reasoning approach. *Med Care* 1989;29:45-58.
2. Davidoff F. Decision analysis: an imaging technique for visualizing medical reasoning. In: Noble J, editor. *Textbook of general medicine and primary care*. Boston: Little Brown and Co; 1987. p. 27-34.
3. Davidoff F. Is basic science necessary? In: *Who has seen a blood sugar? Reflections on medical education*. Philadelphia: American College of Physicians; 1996. p. 96-100.

Med students as emotional chameleons

Everybody knows about the long hours, late nights and gruelling obstacles that medical students endure, but few outside the profession are aware of the emotional challenges that accompany the medical school experience.

A few months after completing a seminar aimed at teaching the importance of empathy, listening skills and understanding a patient's social context, I watched a pathologist dissect a person who had recently died. After feeling this patient's warm heart in my hands and thinking about what his life might have been like, I asked, "Did he have a family?" The response consisted of a furled brow and a mocking glance. Several months later, during a family medicine rotation, I was criticized for not showing enough sympathy toward a teenage girl who had recently begun taking oral contraceptives and was complaining about weight gain.

These early experiences marked the beginning of my confusion about which patients, in which specialties, I was expected to care about. During my general surgery rotation, I was told to spend less than 10 minutes assessing an alcoholic street person who had been stabbed by a prostitute. A month later, in psychiatry, I was expected to explore the psychodrama, including childhood abuse, sexual fantasies and feelings of anger and abandonment, of a depressed middle-aged man, in no less than 60 minutes.

I became increasingly unsure of when I could express my true compassion, when I would have to manufacture concern, when I was expected to offer psychological support and when I would be ridiculed for being too caring. But the exhaustion, the daily (and nightly) tasks of each rotation and the need to plan for my future prevented me from addressing these issues during medical school. Only in retrospect do I realize how I, like so many eager medical students under constant surveillance, had shuffled through medical school from one rotation to the next, feeling like an emotional chameleon.

Experiencing a variety of rotations is a fascinating part of medical school. But each specialty has distinct and unspoken expectations regarding the extent to which its practitioners should engage in patients' emotional lives, and trying to modify one's very human responses to match a specialty's subtle customs can be an odd and stressful experience. I entered a residency program in psychiatry because I enjoy dealing with patients' psychosocial issues. I hope that open