

might be expected to favour candidates with integrity—if one had a reliable method for detecting such characteristics in advance. Few data suggest that admission committees possess such prophetic qualities. One rare piece of data is that from Ben Gurion University's interview process, which seemed to favour students with a higher score on a measure of ethical maturity<sup>5</sup> rather than simply those with high grades. Several Australian medical schools have adopted a screening test developed at Newcastle University with a component that evaluates ethical maturity, but data on its validity have not yet been published.

Medical schools should be the major focus of attention for imbuing future doctors with integrity and ethical sensitivity. Unfortunately there are troubling, if inconclusive, data that suggest that during medical school the ethical behaviour of medical students does not necessarily improve; indeed, moral development may actually stop<sup>6</sup> or even regress. Among the factors contributing to this distressing phenomenon are the overemphasis on grades and competition, negative role models, student abuse, a hidden curriculum which delivers negative messages, a culture of student unwillingness to police themselves, and an institutional tolerance of cheating.

What can be done to counter this by the medical academic establishment? The creation of a pervasive institutional culture of integrity is essential. It is critical that the academic and clinical leaders of the institution set a personal example of integrity. Medical schools must make their institutional position and their expectations of students absolutely clear from day one. The study by Rennie et al in this issue shows that there is no consensus among students on what constitutes unacceptable behaviour (p 274).<sup>7</sup> The development of a school's culture of integrity requires a partnership with the students in which they play an active role in its creation and nurturing. The emphasis should be less on "reporting" breaches, which still presents great difficulty for many students, but more on creating an environment of peer pressure in which certain behaviour simply is not acceptable.<sup>8</sup>

The teaching of medical ethics in small discussion groups throughout the entire medical curriculum is important, but it should focus not only on "classic" bioethical problems but also on the daily ethical dilemmas faced by the students themselves, as pioneered by Christakis and Feudtner.<sup>9</sup> It should be expanded to deal specifically and repeatedly with issues of integrity and professionalism.<sup>10</sup>

Moreover, the school's examination system and general treatment of students must be perceived as fair. The title, "Honesty in learning, fairness in teaching,"<sup>9</sup> expresses this goal precisely. Finally, the treatment of infractions must be firm, fair, transparent, and consistent.

There are no easy solutions to this complex and vexing problem of inculcating honesty, but each institution needs to develop a comprehensive, proactive programme to deal with the problem in accord with its own unique character and culture. The future of the medical professional depends on preserving and restoring public trust in doctors, but this trust must be deserved and earned.

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## Outpatient antibiotics for pelvic inflammatory disease

*Continued use of oral doxycycline and metronidazole is hard to justify*

Standing at the therapeutic crossroads trying to choose a path for outpatients with pelvic inflammatory disease, a clinician may find his or her evidence based map lacking in detail. Not only is pelvic inflammatory disease hard to diagnose; once it has been diagnosed it is not clear what the best outpatient treatment is.

Pelvic inflammatory disease remains a condition with imprecise diagnostic criteria where the clinical features are neither sensitive nor specific<sup>1</sup> and where the "gold standard" of laparoscopy lacks standardisation and is not routinely available in clinical practice. Non-invasive diagnosis using magnetic resonance imaging has potential and may be comparable with

laparoscopy and superior to transvaginal ultrasound,<sup>2</sup> but data and access are both limited.

Once the diagnosis of pelvic inflammatory disease has been made what outcomes are realistic after treatment? Rapid resolution of symptoms, preservation of fertility, and low rates of ectopic pregnancy are all desirable outcomes, but only the first, short term control of symptoms, has been assessed in most randomised controlled trials. In the pre-antibiotic era many women seem to have had resolution of their symptoms but then gone on to develop long term sequelae, and even those women who do receive antibiotics have a significantly increased risk of subsequent complications.<sup>3</sup>

Not only is choosing the best therapeutic road difficult but it remains uncertain whether the best route has, as yet, been found. The available clinical evidence leans heavily on parenteral therapy of inpatients with pelvic inflammatory disease.<sup>4</sup> To extrapolate these findings to outpatients receiving oral antibiotics may result in inconvenience and overtreatment, while direct conversion to oral regimens might be associated with reduced efficacy. The use of a two week treatment period in trials reflects common clinical practice, but it is not known whether outcomes would be similar for shorter treatment periods or improved with longer courses. The choice of therapy is only partially aided by microbiological studies that show a wide variety of bacteria in the fallopian tubes of women with pelvic inflammatory disease but which cannot determine whether some or all of these are primary pathogens.

Despite these limitations, signposts, in the form of national guidelines, which generally point in the same direction, have been erected at the crossroads. Outpatient therapy with a parenteral cephalosporin followed by doxycycline and metronidazole, or a combination of oral ofloxacin with metronidazole, is recommended by the American, Dutch, and British guidelines.<sup>5-7</sup> The presence of guidelines in themselves may not change clinical practice, and in some countries, including the UK, the use of doxycycline (for two weeks) with metronidazole (for one to two weeks) remains common. This provides cover for *Chlamydia trachomatis*, the commonest recognised causal pathogen, and anaerobes, associated with tubo-ovarian abscess formation. The three available trials comparing this combination with alternative antibiotic regimens treated a total of only 56 patients and report clinical cure rates of 70-85%<sup>4</sup> despite most patients receiving their treatment parenterally. One further small study with longer term follow up reported infertility in 43% (6/14) of patients treated with doxycycline plus metronidazole.<sup>8</sup>

The evidence for ofloxacin is derived primarily from two randomised controlled trials enrolling a total of 165 patients and reporting clinical cure rates of 95% and 96%.<sup>4</sup> In both trials outpatient management was assessed, with oral therapy used throughout. The quoted cure rates were obtained with ofloxacin alone, but concerns about inadequate coverage of anaerobes have led to the recommendation that metronidazole should be added the regimen.<sup>9</sup> Longer term outcomes were assessed in an additional small study: at repeat laparoscopy none of the patients with mild tubal disease at the initial examination had progressed to tubal occlusion (n=14), while 6 of 9 patients with severe disease at an initial laparoscopy developed bilateral tubal occlusion.<sup>10</sup>

No Cochrane review is available but a meta-analysis published in 1993<sup>4</sup> and updated in 1999<sup>9</sup> assessed a variety of different antibiotic regimens. Microbiological and clinical cure rates of 91% to 100% were reported, except for the combination of doxycycline plus metronidazole, which had a pooled clinical cure rate of 75% and microbiological cure rate of 71%. There is biological plausibility for this lower success rate related to the limited bacteriological cover provided by doxycycline plus metronidazole: resistance may occur to *Neisseria gonorrhoeae*<sup>11</sup> and other facultative bacteria, such as coliforms, *Garnerella vaginalis*, and viridans streptococci,<sup>12</sup> which are commonly found in the fallopian tubes of women with pelvic inflammatory disease.

There are many questions about the treatment of pelvic inflammatory disease that remain unanswered, and much work remains to be done. From the available published evidence the use of oral doxycycline and metronidazole appears to have a lower cure rate than alternative therapies. Until, and unless, new evidence becomes available it is difficult to justify their continuing use in isolation.

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## Promoting wellbeing among doctors

*We should move away from a disease model and focus on positive functioning*

Studies on physician functioning have focused almost exclusively on impairment, and as a result we know much about doctors' disease and despair, their substance misuse, burnout, and dysfunctional relationships. But we know very little about what keeps them feeling well.

Though this may simply reflect the tendency for psychological research to focus on pathology rather than health, it nevertheless leaves doctors with little information to guide them in living positive and healthy lives. For this reason we have devoted the January issue of *ujm*, the *Western Journal of Medicine*, to

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