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PERSONAL VIEWPOINT

Dangerous liaisons: doctors-in-training and the pharmaceutical industry

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Abstract

Interaction between doctors and the pharmaceutical industry is long-standing and ingrained in modern practice. Doctors-in-training are at a vulnerable stage of their careers, both in requiring knowledge and forming lasting relationships. There is evidence that limiting contact between industry and junior doctors has a positive effect on subsequent clinical behaviour. Currently in Australia, there is no limitation on pharmaceutical representatives approaching doctors-in-training, and the majority of education sessions are sponsored by pharmaceutical companies. This purposefully creates a sense of reciprocity, which may have adverse long-term consequences on attitudes, behaviours and patient care. Several guidelines exist that may assist junior doctors in navigating these potential interactions, most notably the Royal Australasian College of Physicians' own *Guidelines for Ethical Relationships between Physicians and Industry*. Despite this, there is no reflection of its importance or necessity within subspecialty curricula. This should be rectified, to the benefit of both the profession and public.

The pharmaceutical industry is an integral component of modern medicine. Medications produced by these organisations are essential in ensuring the best care for patients. Interactions with its representatives are consequently a long-standing and ingrained aspect of professional practice. However, these relationships can have detrimental ethical implications, which have been well documented for experienced doctors. Evidence suggests that prescribing practices are affected by interactions with industry, with even brief encounters exerting influence, and should be avoided.[1] In contrast, the effect of pharmaceutical representatives on doctors-in-training has received minimal attention, at least in Australia. Junior doctors are given little overt guidance in this area, leaving them vulnerable and patients' best interests at risk. This should be rectified by enhancement of current training programmes.

In Australia, several relevant guidelines provide a framework for medical practitioners to assist them in determining ethical practices. One purpose of these guidelines is to help doctors understand the role of pharmaceutical representatives and how to interact with them in a way that best serves patients' needs. The Medicines Australia *Code of Conduct Guidelines*, although primarily developed for use by the pharmaceutical industry, is the clearest example of a broad ethical framework that may be relevant to practitioners of all specialties. Developed initially in 1960, the 17th edition was published in 2014 and covers most conceivable interactions likely to occur between doctors and representatives.[2] The overriding principles stipulate that interactions between health professionals and industry should withstand scrutiny by, and conform to the standards of, both the public and the profession. In addition, they should have the main objective of enhancing medical knowledge and the quality use of medicines in Australia.[2] In essence, the Code encourages doctors to interact with representatives in a manner that unfailingly prioritises the well-being of patients above that of doctors or pharmaceutical companies. While the Code does distinguish between medical students and health professionals, it does not refer to the specific circumstances of doctors-in-training, such as residents or registrars. This is a significant oversight. In addition, the Code itself has been criticised repeatedly for, among other reasons, the fundamental flaw that it is produced by Medicines Australia, an organisation comprised entirely of members of the pharmaceutical industry.[3]

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The extent of interactions for junior doctors and industry has been well established abroad. In the United States, a national survey demonstrated that more than half of early physician trainees had received a gift of some form from a representative, while over a third had attended industry-sponsored education sessions.[4] In Europe, a cross-sectional analysis of psychiatry trainees in 20 countries showed the mean number of encounters with representatives ranged from once to 20 times a month.[5] This is important as doctors-in-training are at a particularly vulnerable stage of their careers with regard to developing relationships with the pharmaceutical industry. Residents have been shown in the United States to have little knowledge regarding these relationships,[6] and poor insight into the ramifications of their interactions with pharmaceutical representatives on patient care.[7]

While interactions may begin as early as medical school or internship,[8,9] within the Royal Australasian College of Physicians (RACP), it is especially true of the transition between basic and advanced training. As basic trainees, junior doctors are focused on all aspects of general medicine and interactions with pharmaceutical representatives may be incidental, such as at a hospital departmental meeting or a conference. There is no guarantee that any basic trainee will remain in the speciality, and so there is little financial impetus on the company's part to pursue a lasting relationship. This changes dramatically at the onset of advanced training, where registrars are enrolled in a specific sub-speciality.

Individual sub-specialities use individual medications with an emphasis on dedicated indications. These medications tend to have specifically assigned representatives whose role is to advertise the merits of their drug over other drugs to clinicians likely to prescribe it long term. At the onset of advanced training, this includes the registrars. It is common for advanced trainees, over many sub-specialities, to receive a sudden surge in contact from pharmaceutical representatives.

This contact may occur initially in departmental meetings or in-house education sessions, such as sponsored journal clubs, similar to the incidental interactions of basic trainees. Representatives routinely provide food and refreshments while distributing print resources relating to their products. As an advanced trainee these are expanded. Invitations to dinners arranged by drug companies are not uncommon, leading directly to provision of industry-produced educational material and later follow-up discussions with representatives about the medications they advocate.

The culture into which junior doctors enter is that of accepted pharmaceutical involvement, and thus, inevitably, pharmaceutical power. This culture is pervasive and ingrained within all levels of seniority. Nowhere is this more clearly demonstrated than in the treatment of pharmaceutical industry-sponsored education. Ultimately, involvement in this education can proceed even directly to fund the travel costs of attending an international conference. While it may be objectively seen as a questionable practice, this sponsorship is not at all discouraged by either the RACP or sub-specialty societies. It is instead usually labelled as an 'award' for significant achievement in research, implicitly approving of and perpetuating this involvement. The RACP Foundation itself, developed to aid training and research, acknowledges a large component of its funds are drawn from pharmaceutical sponsorship.[10] While these funds are used for benevolent means, accepting money from companies of which the College purports to be independent, and of which it purports to encourage members to be independent, appears both highly problematic and disingenuous. This cannot but send a convoluted message to trainees.

Advanced trainees are likely to be highly influenced by other professionals in the specialty, such as pharmaceutical representatives, because they are new to the field. As such, they are inherently more susceptible to the influence of any argument in favour of one medication over another as they have not yet had the opportunity to form sustained opinions of their own. While generally not yet in a position to make the final decision regarding treatment administration, they are nevertheless strongly influenced by the pharmaceutical industry. This is supported empirically. Early interaction with industry has been shown to affect prescribing behaviour. Junior doctors who meet with pharmaceutical representatives are more likely to prescribe that company's medication within 12 weeks of the visit than those who do not.[9]

Furthermore, limiting interaction with trainees may result in increased scepticism of information provided by pharmaceutical representatives. Evidence from Canada has suggested that restricting interaction early in internal medicine residency leads to trainees who are less likely to find pharmaceutical company material useful.[11] It is reasonable to expect that at least some of the information retained during this period will have a lasting influence over subsequent practice. As such, it is also likely that pharmaceutical representatives are particularly motivated to engage with advanced trainees, as a strong relationship built early in their career may lead to sustained prescribing patterns and medication sales for many years.

Doctors-in-training are at a stage of their careers where they are required to learn a large portion of information relevant to their speciality. The vast majority of education during advanced training takes place on an *ad hoc* basis by

supervising consultants, or self-directed by registrars. In contrast to the Physician Education Program (PEP) developed by the RACP for basic training,[12] there are few structured centralised education programmes for subspecialty advanced training. This void in education is filled by the provision of lectures that typically provide up-to-date information on evidence-based practices, presented by highly regarded figures in the relevant field and are well attended by both registrars and consultants. These forums are sponsored and organised in their entirety by the pharmaceutical industry.

It is imperative that doctors-in-training partake in the educational opportunities available to them, at least to some extent, in order to build the knowledge they require to become competent consultants. When these are funded by pharmaceutical companies, they have no choice but to engage in a relationship with the industry. Although speakers and industry are generally independent of one another, in line with the Code, there is an inherent potential for conflicts of interest when discussing the role of a specific company's medication in the treatment of a condition. In addition, practices such as follow-up meetings with representatives heighten the impact of these events to influence prescribing practices.

However, the concern is not simply with regard to companies providing information specifically about their own products. Ubiquitous in lectures sponsored by pharmaceutical companies is the prominent inclusion of the company's branding or logo. When pharmaceutical companies provide education that has no bearing on their specific medications but is clearly provided by their organisation, they create a relationship between the company and the doctor. For junior doctors, this relationship is one in which the company provides a much needed service for a highly subsidised, or even absent, cost. Inherently, the recipient avoids a significant financial burden. As such, the individual receives some form of benefit from the pharmaceutical organisation and a sense of debt is created, despite no apparent reciprocation being requested by the company.

There is a substantial body of evidence which suggests that, when a gift is received, individuals instinctively feel the need to repay in some form to relieve the sense of debt. Furthermore, no overt request for reciprocation is required in order for individuals to feel indebted, only the provision of an opportunity to do so.[13] Theorists argue that this is an evolutionary adaptation that enables humans to form trusting relationships whereby they can expect others to respond in kind to acts of giving.[14] However, this natural tendency allows opportunity for exploitation. By providing a gift or free service to an individual, companies can purposely work to create a sense of owing between the individual and their organisation. The use of this practice by the pharmaceutical industry has been widely acknowledged, and the industry has received extensive criticism for actively aiming to manipulate doctors.[1] Nevertheless this practice is ongoing, with pharmaceutical companies continuing to provide subsidised services to doctors. Thus, with registrars having no recourse but to be involved in these interactions, it is clear that there should be instruction regarding their appropriate behaviour in these situations.

The RACP has produced its own set of guidelines regarding contact with the pharmaceutical industry, published in its third edition in 2006.[15] Within these, the role of trainees and their potential interactions are covered specifically. It is outlined clearly that training programmes should include education and discussion on industry interactions within their curricula. There is therefore already an acknowledgement from the College that this is an issue of high importance worthy of further development. While curricula cover areas such as the clinical management of specific conditions and principles of professional practice, no curriculum from any subspeciality appears to include the need for teaching on ethical interaction with the pharmaceutical industry. There is no education provided on how to interact with industry, nor an understanding of the ethical implications that may arise from the sponsorship of educational events. Indeed, the College's own guidelines are not enacted in any tangible or effective way.

With the possibility of early adverse influence over many later treatment decisions, the lack of guidance provided to doctors-in-training is highly concerning. Currently, most educational forums are organised or at least financed by the pharmaceutical industry, thereby saving doctors or educational bodies, such as the RACP, countless dollars each year. There is subsequently little impetus from within this system to provide any form of training that may implicitly criticise such sponsorship. Furthermore, the ongoing funding of the RACP and specialist societies by industry reduces the likelihood of creating programmes that may compete with those that already exist. There is additionally no limitation on representatives contacting and meeting with trainees. This does not conform to the standards of the community or the profession, nor would it withstand significant scrutiny from either.

Broader discussion, instruction and overt guidance for trainees is sorely needed in this area. One solution, in line with the RACP guidelines, is through an educational programme developed by the College or within subspecialties. Needless to say, this should not be pharmaceutically sponsored. Alternatively, curricula could be

updated better to reflect the expectations of the College and thus compel trainees to explore these issues. Direct interaction between pharmaceutical representatives and trainees should be either banned altogether or supervised closely by consultants. A change in current education and interaction policy is necessary to maintain a legitimate lasting integrity of professional practice to the benefit of patients as a whole.

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LETTERS TO THE EDITOR

Clinical-scientific notes

Hypertrophic osteoarthropathy with imatinib therapy

Treatment with tyrosine kinase inhibitors has transformed the outlook for patients with chronic myeloid leukaemia and gastrointestinal stromal cell tumours (GIST), but has a number of side-effects. Among these is bone pain, most frequently in the legs, which has been reported by 20–40% of patients. Its onset tends to be in the first month or two of therapy and abates over time.[1,2] The aetiology of this symptom is unknown. We describe a patient treated with imatinib who suffered marked bone pain that followed such a trajectory. Investigations suggest the phenomenon was related to a transient hypertrophic osteoarthropathy-type reaction with increased bone formation.

A 51-year-old man with a history of well controlled type 2 diabetes, dyslipidaemia and vitiligo was diagnosed with a mesorectal GIST. The tumour was treated by surgical resection, as was a recurrence in the mesorectum 4 years later. After a further local recurrence at the age of 58, imatinib 400 mg daily was prescribed. He did not