

patients experience long waits for very short appointments, are often surprised to see a good and rewarding relationship between patients and GPs, a totally different picture from the increasingly frequent reports of escalating doctor–patient tensions. It would be interesting to investigate how this increased exposure to general practice teaching would finally affect students' career choice in a few years, when enough data is available.

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DOI: <https://doi.org/10.3399/bjgp17X691013>

## What factors influence intention towards a career in general practice?

We read with interest the article by Merrett *et al*<sup>1</sup> on young doctors' attitudes towards a career in general practice and have collated complementary data from students. We surveyed all final-year medical students at Newcastle University, on completion of their rotation in general practice, over the last 2 academic years. Responses were received for 578 students (response rate = 85%). Students were asked whether they intended to pursue a career in general practice and which factors influenced their decision. One-hundred-and-ten (19%) reported an intention to become GPs and 189 (33%) stated it was

one of their options.

We identified a range of themes that positively influenced career intention: specific practice-related factors such as good general practice role models (*'Dr X has shown me how important a good GP can be'*); career-related factors such as work–life balance; and speciality-related factors such as variety of presentations encountered (*'Find general practice an interesting career with good opportunity to see a large variety of patients and build up a good rapport. However, main benefit for me was also the work–life balance'*).

Negative influences on GP career intention included stress among GPs, lack of procedural skills, and lone working (*'I feel general practice is slightly exhausting, and there is not as much interaction with other professionals during the day'*). Negative comments from hospital doctors were also cited (*'General practice has appealed to me in the past. However, the berating they get from hospital doctors (for reasons varied and often unsubstantiated) put me off'*).

We believe these studies add to the crucial contemporary literature into why an individual may choose to pursue a career in general practice.<sup>2</sup> In addition to the recommendations raised by Merrett *et al*<sup>1</sup> around funding, workload, and respect, we would emphasise the key aspect of positive GP role models<sup>3</sup> and the need to explore the perception of general practice as a lonely career. Finally, we must take seriously the recommendation in the Health Education England/Medical Schools Council report, quoted in the editorial of the same *BJGP* issue,<sup>4</sup> that *'[w]ork should take place to tackle undermining of general practice as a career across all medical school settings'*.<sup>5</sup> That work must start now.

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DOI: <https://doi.org/10.3399/bjgp17X691025>

## Berwick's third era

Roger Jones is right to highlight Berwick's relevance.<sup>1</sup> Don Berwick admires the NHS and has high regard for general practice, so we should listen to him carefully.<sup>1</sup> He offers a manifesto for the NHS that differs from the usual tired exhortations to integrate, collaborate, and become patient centred. His argument about eras in medicine is attractive. Era 1 was the period of noble, beneficent, self-regulating professionalism that powered the NHS in its early days. In the compromises needed to launch the new health service in 1948, the political class conceded to the professions the authority to judge the quality of their own work.

Era 2 began when the variations in the quality of care, the injustices and indignities inflicted on people because of class, gender, and race, the profiteering and the sheer waste of Era 1, became inescapable. Era 2 introduced accountability, scrutiny, measurement, incentives, and market mechanisms, and has promoted discomfort and defensiveness among NHS staff, and feelings of anger, of being misunderstood, and of being over-controlled. Managers and the Department of Health in turn become suspicious, feel resisted, and can become either aggressive (creating a culture of bullying) or helpless.

Berwick has nine suggestions for helping Era 3 into being:<sup>2</sup> stop excessive measurement; abandon complex incentives; reduce the focus on finance but increase attention to quality of care; reduce professional prerogative; recommit to improvement science; embrace transparency; protect civility; really listen (especially to the poor, the disadvantaged, and the excluded); and reject greed (it erodes trust). As we have tried to point out,<sup>3</sup> some of these ideas have

more resonance in the US than in the UK, but nonetheless Berwick offers us both a critique of the NHS and a programme of work to remedy its failings.

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DOI: <https://doi.org/10.3399/bjgp17X691037>

## No laughing matter

The April issue of the *BJGP* discussed the ongoing issues of alcohol and opiate misuse in our society.<sup>1,2</sup> We wish to highlight a less well-recognised drug of abuse with potentially devastating consequences, namely nitrous oxide. This drug can have significant adverse effects on the nervous system by causing vitamin B12 deficiency.

Sliney argues that it should not be the doctor's role to distinguish between genuine and fraudulent claims of pain and that doing so 'welcomes prejudice' against drug addicts.<sup>3</sup> He also says that Spence's approach<sup>4</sup> might result in under-treatment of valid pain.

We were recently reminded of this when a young adult presented with ataxic paraplegia, which had developed over a few weeks. The patient had been inhaling up to 24 nitrous oxide canisters per day and had a myelopathy as a result of severe vitamin B12 deficiency, with serum B12 measured at <100 ng/L.

Nitrous oxide irreversibly oxidises B12 to its inactive form.<sup>5</sup> Neurological manifestations of B12 deficiency include cognitive and visual impairment, neuropathy, and myelopathy, with the last being the most common.<sup>6</sup> Anaemia may or may not be present.<sup>7</sup>

Recreational use of nitrous oxide is surprisingly frequent. In the 2013/2014 Drug Misuse Survey for England and Wales, 7.6% of 16–24-year-olds reported using nitrous oxide in the preceding year.<sup>8</sup> Until recently, the drug was also legal. The Psychoactive

Substances Act came into force in the UK in May 2016, although it remains to be seen how much of an impact this will have on its use.

In most cases of nitrous oxide-induced neurological dysfunction, the serum B12 concentration is low, although it may be normal.<sup>8</sup> Borderline levels in a potentially symptomatic patient should prompt testing of methylmalonic acid plus/minus homocysteine (both go up in B12 deficiency).<sup>9</sup> Treatment is with immediate commencement of parenteral vitamin B12 and, of course, cessation of the drug. With these measures, improvement of neurological deficits is the rule. However, most people will have some residual deficit.<sup>7</sup>

Due to its rapid on- and offset and its use in anaesthesia, one could conclude that this drug is relatively innocuous, but this is absolutely not the case. Young people in particular need to be warned about the potential for this gas to cause neurological impairments, which may not be completely reversible.

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## Smoking reduction during Ramadan

In Ramadan, Muslims choose to abstain from food and drink from dawn till dusk to learn virtues such as gratefulness and to improve in God-consciousness.<sup>1</sup> The observer must also refrain from smoking. Ramadan begins towards the end of May 2017 and for one month is an opportunity to promote smoking reduction and thus enhance smoking cessation.

Adhering to Ramadan fasting will reduce smoking in observers. The challenge is to maintain this after the fast breaks and post-Ramadan, and research suggests behavioural approaches are effective. A faith-based smoking cessation behavioural intervention during Ramadan in Malay observers found sustained smoking reduction post-Ramadan.<sup>2</sup>

Primary care staff can use encounters with fasting smokers to direct them to NHS Stop Smoking Services who can collaborate with local mosques and Muslim community centres to use Ramadan for education, promotion of reduction techniques, and securing patients for follow-up support post-Ramadan. The UK Centre for Tobacco and Alcohol Studies should look to develop religiously and culturally sensitive and acceptable faith-based behavioural interventions for Muslims in the UK for use in future Ramadan months.

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