

Eroding students' rural motivation: first do no harm?

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Summary

Migration of health professionals is one of the drivers of vast inequalities in access to healthcare, as medical graduates tend to move away from both poorer countries and rural areas. One of the central ethical problems raised in attempting to alleviate these inequalities is the tension between the healthcare needs of under-served patients and the rights of medical graduates to choose their place of work and specialty. If medical graduates had greater motivation to work in under-served rural areas, this tension would decrease accordingly. Medical schools have a duty to avoid eroding existing motivation for such training and practice. This duty has practical implications. Medical students' motivation regarding their choice of specialty changes during medical training, turning them away from choices such as primary care and rural practice towards more highly specialised, more hospital based specialties. Although students may be victims of a number of biases in the initial assessment, this is unlikely to be the whole story. Students' priorities are likely to change based on their admiration for specialist role models and the visibility of the financial and non-financial rewards attached to these specialties. Students may also have a false expectation upon admission that they will be proficient in rural medicine on graduation, and change their mind once they realise the limits of their skills in that area. Although the measures required to reverse this effect currently lack a solid evidence base, they are plausible and supported by the available data.

Key words: *Medical migration; ethics; medical education; rural practice; primary care; Switzerland*

Introduction

In the global scarcity of medical professionals [1], the clearest deficits of physicians exist precisely in the areas of the world where the need for them is greatest [2]. This maldistribution exists both at the international level, and between urban and rural areas within countries [1]. Simultaneously, doctors tend to migrate and move away from the areas of greatest need [2]. There is thus a tension between the interests of patients in poorer countries and rural patients in rich countries to have equal access to needed medical care on the one hand, and the rights of physicians to

choose where they live and practice on the other hand. One of the reasons is medical graduates' motivation to leave rural areas, or their distaste for moving there in the first place. If graduates' motivation to work in rural areas were greater, the tension between their interests and the interests of patients would decrease. Efforts have thus focused on increasing the motivation of medical graduates to work in rural areas, in pre-committing them to do so, or in recruiting medical students more likely to have such motivations [3].

In this paper, I will argue that this picture may be missing an essential component. Rather than only representing a missed opportunity for improving graduates' rural motivation, the way in which medical curricula are organised may itself represent a push factor away from rural practice. Should this be the case, it could mean that medical schools have a stronger duty to attend to graduates' rural motivation. To a point, this is uncontroversial. Calls for the re-design of medical curricula along lines favourable to rural work have been made for some time [4–7]. These, however, have focused on correcting medical training to add specific programmes centred on rural medicine. What I want to argue here is somewhat different: rather than simply failing to train doctors for rural work, medical schools may be actively discouraging them from such practice.

International medical migration and the Swiss context

The global maldistribution of physicians is devastating for poor countries. Medical migration away from poor countries translates into hurdles for essential services such as infant, child and maternal health [8], as well as into loss of human capital in terms of employers, teachers and role models [9]. Medical migration is a bottleneck to implementing international legal agreements such as the WHO 2005 International Health Regulations, which targets the international spread of disease [10]. Migration options perpetuate an expensive cycle of training and professional flight [11]. Although migrant doctors send remittances home, these are too small to compensate the costs of their medical training [12]. Nor are the net losses merely financial. In the process of migrating, doctors also turn their in-

telligence away from their communities' problems, and toward problems affecting their patients in rich countries.

Both so-called "push factors" as well as "pull factors" contribute to this state of affairs [13, 14]. Endogenous push factors include money, job satisfaction, risk, as well as the lack of a further education and career development options [15]. Consequently, it is usually accepted that better pay, better work conditions, better safety on the job, as well as the development of further education possibilities and career ladders, would help to solve the current difficulty [16]. Despite attempts to curb medical migration through policies in source and target countries as well as international norms, however, the trend is largely unabated [12]. In 2010, the World Health Assembly adopted the *Global Code of Practice on the International Recruitment of Health Personnel*. This non-binding code is being followed in its application within national laws [17, 18], but remains unlikely to have a major impact on medical migration trends [17].

Rich countries with high physician densities may seem less affected by such problems, but this is not the case. First, these countries are also affected by the maldistribution of doctors among regions and among specialties. Important regional disparities between urban and rural areas exist in richer countries also [19–21]. (Updated Swiss data on regional distribution of doctors is available at: <http://aerztestatistik.myfmh2.fmh.ch/>). In certain specialties, such as psychiatry in certain regions, it has also become difficult to recruit physicians in Switzerland [22].

Secondly, shortages in the rural areas of rich countries, and in under-served specialties, constitute one of the factors that may encourage the recruitment and retention of foreign doctors [23]. This is one of the many factors which make rich countries destination countries in the global medical brain drain. Although rich countries are theoretically in a position to train doctors in greater numbers, immigration from poorer countries represents a "good deal" for richer ones. Training more doctors themselves would cost taxpayer money. To be more exact, it would cost their taxpayers' money. Doctors in other parts of the world are, after all, often trained at the cost of local taxpayers as well. When those doctors migrate to Europe, Australia, or the USA [2], this represents an indirect subsidy of the – often – rich by the – often – poor. The magnitude of this problem is not always visible to health policy and medical school decision-makers: in many countries, migrant doctors come from closer and relatively well-off areas of the world. Relatively well-off neighbours, however, tend to have poorer ones. They will turn to these poorer neighbours to recruit doctors to fill the slots left empty by migrants. This gives rise to a domino effect as each country in turn recruits among doctors trained by even poorer neighbours. The only countries with no one poorer to turn to are the poorest on earth. The net result is a global flow of healthcare professionals moving away from the greatest needs [1, 2]. Rich countries with high physician density thus bear some responsibility for the lack of doctors treating the sickest and poorest patients in the most destitute regions on earth. The net result is that, while the plight of rural patients in rich countries may be partly alleviated, this comes at the expense of worse off patients in poorer countries.

The fact that medical graduates in rich countries remain unmotivated to work in rural areas can thus have far-reaching consequences both in Switzerland and abroad. Understanding the factors that influence this lack of motivation is thus important.

Rural motivation erodes

Younger medical students have greater motivation to work in primary care and rural areas than older graduates [24]. Applicants to medical school in rich and poor countries alike cite motivations based on interest in science, altruism, self-realisation and a sense of service [21, 25–27]. Once their studies are completed, however, graduates are less committed to such values [28–31], and less willing to pick rural practice [32]. Instead, graduates pick well-paid specialties [33]. There could be at least four, non-mutually exclusive, reasons for this erosion of primary care and rural motivation over time: students might not tell the truth about their initial motivations, they could be misled by biases, their priorities might genuinely change over time, or they may have false expectations as they embark on their studies.

Are students telling the truth?

If students' motivations are explored during admittance interviews, younger students could be lying about their motivations: a preference for rural work could be the visibly preferred response. Medical students, however, give such responses in anonymous surveys [21, 25–27]. Although they may still be giving the socially more desirable response, medical students also behave in manners consistent with this stated preference. They do things such as select global health programmes and volunteer for humanitarian work [34, 35].

Are students biased?

In their defence of long-term conditional scholarships for rural practice, Eyal and Barninghausen [3] explore possible reasons why students may be biased. Younger students may have an excessively rosy picture of rural medicine or of working in rural areas. They may underestimate how much they will like city life. They may be discounting the future, a phenomenon that has been well-documented in other areas and that may be at play here also. Finally they may be under a form of optimism bias, the tendency to underestimate the likelihood that some undesired future event will actually apply to them. If this is true, if younger medical students are actually overestimating their rural motivation, this is bad news. One implication would be that, in order to improve doctor density in rural areas, medical schools would need to somehow create rural motivation among their students.

Do students' priorities change?

The next hypothesis is, however, more optimistic. Medical students' priorities may genuinely change as they undergo medical training. That medical student's exposure to medical exemplars is unrepresentative of general practice, and of rural medicine in particular, has been abundantly documented [36]. Clearly, this can contribute to shaping stu-

dent's motivations. Rather than simply failing to create rural motivation, however, this environment could actively erode motivation to practice in primary care and rural settings.

The first reason why disproportionate exposure to specialist exemplars could erode general practice and rural motivation is that medical students are overall a healthy population. Their previous experience with medical exemplars is likely to have been primary care providers such as their paediatrician or family doctor. Inasmuch as their wish to study medicine may at least some times be based on those exemplars, they are likely to enter medical school predominantly with the intent to practice a similar form of medicine. This would fit with students' stated preferences upon admission to medical school. As they progress through medical training and in particular clinical years, however, medical students are predominantly in contact with role models from specialities present in a teaching hospital. Frequently, their choice of specialty practice on graduation may thus reflect a true change in motivation. This change is sometimes intensified by negative stereotypes regarding primary and rural practice [37], and by 'bashing' of other specialties during specialty clerkships [38, 39]. In such cases, the responsibility of medical schools in eroding students' initial motivations is of course even clearer.

Students' priorities may also change if they become indebted in order to study medicine, moving them towards higher paying specialties as a perceived necessity to pay back debt. Although data are less conclusive here [40–43], a turn away from primary or rural care in order to fulfil the pay requirements of medical studies would also be caused by the structure of medical school.

Finally, it is in contact with day-to-day clinical practice that medical students form a representation of what their future life may be like in different medical specialties [37]. Each specialty has somewhat different rewards and burdens and these are best evaluated in close proximity. Differences in income are visible, and often weigh against a choice in primary care or rural practice. Material rewards, however, are not the only reason for a specialty choice. Non-financial motivations cited by medical students and graduates as important for specialty choice include prestige [44, 45], work-life balance [46], enjoying work [47], intellectual challenge [37], the opportunity to make a difference in peoples' lives, job security, a desire to serve one's community, and the opportunity to help patients who are socially disadvantaged [28, 45]. These aspects of a specialty are most visible in close proximity with the daily professional life of those who may have attained at least some of them. Without a role model embodying the possibility of such non-monetary rewards, they may seem entirely unattainable in more distant specialties. Medical students may not only turn from primary care and rural practice to hospital specialties because their role models there are greater objects of admiration for them, but also because they seem better rewarded in their practice of medicine.

Do students have false expectations?

The final hypothesis is that students may have false expectations. They may expect that, at the end of their studies, they will be proficient in the sort of medicine required for

rural practice. As their studies progress, they may come to realise that this expectation is inaccurate, and this may be a reason for their changing orientation [48]. In other words, their "change of heart" may reflect an appropriate acknowledgement of their own limits [49]. This hypothesis is supported by data showing that both pre-and post-graduate rural rotations increase rural motivation in medical graduates [38, 44, 50–54]. Although greater integration in non-urban regions has been credited with part of this effect, and may indeed play a role, only postgraduate rural rotations are likely to work through this mechanism. Students enrolled in pre-graduate rotations are unlikely to become rooted in the rural areas where they will spend only a short time. If they are given rural experience during their studies, however, even senior medical students are more likely to assess it favourably [55]. One reason could be the awareness of having gained greater proficiency.

An effect of medical school?

Several of these effects may of course exist simultaneously. The two last ones, namely that students' priorities change and that they enter medical school with false expectations, should be of particular concern to us. Both suggest that the organisation of medical schools and curricula make it more likely that graduates will be pushed away from local or rural practice. In other words, we may be eroding students' motivation to practice in primary care or in a rural setting. To attempt an increase in the number of graduates practicing in rural areas, medical schools may have to protect existing motivations, at least as much as enhancing or creating such motivation.

This should concern us for two reasons. Firstly, duties to abstain from doing harm are usually considered to be stronger than duties to do good [56]. Choosing one's profession, or one's specialty within a profession, can be understood as a liberty right. This means that limiting it can sometimes be justified, but not without a good reason. A positive duty to do good is unlikely to be recognised as sufficiently strong to ground such a limitation. If, however, medical schools erode rural motivation, then we are in a rather different situation. Avoiding active harm to rural patients *would* constitute sufficient reason to limit graduates' freedom to choose their specialty. Indeed, if medical schools erode students' rural motivation, then changing their curriculum to avoid this may not even represent a limitation on graduates' freedom to choose their specialty. Training doctors to maintain rural motivation could enhance graduates' freedom, rather than diminish it. Medical schools which, probably unwittingly, turn medical students away from their initial motivation to practice where the need is greatest, are thus more blameworthy than if they simply failed to implant such motivation in students in the first place.

Secondly, medical schools do have a special duty to protect the access to care of the neediest patients. If students changing motivations are indeed an effect of medical school, then these schools have a particularly strong duty to put this right.

First, do no harm?

What would correcting these effects imply? Of course, medical schools cannot solve the problems associated with rural maldistribution or with the international brain drain on their own. Policies proposed to counter these negative effects include global governance schemes [57], as well as temporary work visas, compensating source countries for loss, ethical recruitment, increasing wages in under-served areas, improving health systems, “return of talent” programmes, taxing emigrants, and compulsory service requirements [12]. Based on the elements presented here, however, medical schools have a special duty to counter the effects of their curricula, when these are likely to erode rural motivation. What can they do to effect this change? There is little data and much of it relies on surrogate outcomes. Almost all are from richer countries. Predictably, very few comparisons are available. Studies do suggest, however, that greater exposure to general practice role models improve attitudes towards primary care [58–60]. Mentored experience with under-served populations helps to maintain medical students’ idealism [61]. Rural rotations increase rural practice and urban raised graduates are even more likely than others to identify this as determinant in their choice [62]. Experience with rural practice during medical training is associated with feeling prepared to live in a small town [63]. Rural residency, rurally focused medical schools, and entry criteria favouring rural students, all increase rural recruitment and retention [64–66]. This is in line with recommendations to “improve the performance of health systems by adapting core professional competencies to specific contexts” [4] and with WHO recommendations to “revise undergraduate and postgraduate curricula to include rural health topics so as to enhance the competencies of health professionals working in rural areas” and to “Expose undergraduate students of various health disciplines to rural community experiences and clinical rotations” [67]. Such measures would amount to giving a much more central place to rural medicine in medical curricula.

Conclusion

Medical students’ motivation regarding their choice of specialty change during medical training, turns them away from choices such as primary care and rural practice towards more highly specialised, more hospital-based specialties. Although students may be victims of a number of biases in their initial assessment, this is unlikely to be the whole story. In addition, students’ priorities are likely to change based on their admiration for specialist role models and the visibility of the financial and especially non-financial rewards these role models obtain. The rewards of outpatient family practice and rural medicine, especially the non-financial ones, are not likely to be visible from a distance. Students are, in effect, comparing a full and rich picture of their lives as hospital doctors with a severely thinned-out picture of other forms of medical practice. Moreover, students may have the false expectations upon admission that they will be proficient in rural medicine on graduation, and change their mind once they realise the limits of their skills in that area. To counter these effects,

medical schools should make students more proficient in rural medicine, require rural rotation, raise the profile of rural medicine among faculty, and make the intellectual challenges and potential for excellence in rural medicine more visible. Although the measures required to reverse this effect currently lack a solid evidence base, they are plausible and supported by the available data. They amount to refraining from eroding students’ rural motivation. That they seem so demanding should give us pause.

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