The challenges of widening access to the medical profession: how to facilitate medical careers for those at a genuine disadvantage [version 2]

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Abstract
This article was migrated. The article was marked as recommended.

Widening Participation (WP) for medical school entry has been politically encouraged to ensure access and participation for underrepresented groups that are rarely able to gain access to this high demand profession. Those who reside in the 20% most deprived postcodes in Scotland (SIMD20, Scottish Index of Multiple Deprivation) are much less likely to apply for medical school entry and even less likely to succeed. The National outreach programme of Scotland (Reach) aims to rectify the existing situation by encouraging and supporting students from working class backgrounds to apply to high demand courses, including medicine, and has achieved great success in helping pupils from low progression secondary schools to gain a place in Glasgow Medical School. However, some of the Reach students have similar demographics as the rest of the medical school class and arguably do not genuinely belong in the target group. To address this, a second flag, based on SIMD20/40 residence, was employed. Applying more than one WP flag however - while substantially improving the accurate targeting of this programme and helping those who truly are multiply deprived - reduces the Reach-eligible applicant pool to the point of undermining the high WP targets imposed on Universities. But using only a single criterion of SIMD20/40 residence or school progression rate would inappropriately benefit some pupils that are actually not genuinely disadvantaged. Ideally, individualised indicators such as eligibility for Free School Meals, receipt of an Educational Maintenance Allowance and/or a UKCAT bursary, would complement residential data and school progression rates. This paper reflects on the evolution of the...
admissions practices at Glasgow Medical School that are designed to meet the targets and create a medical workforce reflecting the population it serves.

**Keywords**
Widening Participation, Outreach, Selection, Admissions, REACH Scotland, University of Glasgow

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Introduction: recognition of the need for wider participation

Widening participation (WP) is a hot topic on the political agenda in a number of countries - in the UK this is to a large extent about underrepresentation of white males from working class background in the top professions (Lambert, 2018; Sullivan, 2010; Baars, 2015; Adams, 2018); in Canada it is about participation of the indigenous population in Higher Education (HE) (Collier, 2010), while in Germany it is reported that children of academics are more likely to apply and succeed in getting a place on the medical course (Simenroth-Nayda, 2015). Family income, social or cultural capital (Nicholson, 2015; Wilkes, 2018), the level of parents' education (Simenroth-Nayda, 2015; Powis, 2007), and the geographical location (Cooper, 2017) all influence young people's opportunities, and their decisions to pursue medicine as a career.

Bourdieu’s ideas of how society is reproduced, and how the dominant classes retain their position, embraces the strong relationship between three fundamental forms of capital - economic, cultural and social, which are inseparable from each other and work together to sustain the elite and preclude the ‘wrong’ kind of people from entering their circles; what this ensures is that the right resources (economic capital) will enable children of the elite to have a good education/know languages (cultural capital), and as a result will eventually have better jobs and move in better circles (social capital), thus benefitting from being part of this ‘network’ and perpetuating it (Bourdieu, 1986; Bourdieu, 1992).

Indeed, this is what happens in many societies; however, the creation of ‘human capital’ in the next generation allows social mobility (Coleman, 1988). Thus, including other communities (i.e. widening participation) is the right sociological approach for a society that strives for a fairer world. It is important that the medical workforce demographic resembles the population it serves, in order to provide quality care through shared experiences free of bias and prejudice. This improves the doctor-patient relationship, including trust and understanding (Torres, 2018; Berger, 2008). The debate is about how we can bring this about and even though the paper discusses the issue in a Scottish context, the lessons learned may be widely applicable.

Addressing the problem: the Reach and SWAP programmes

According to Universities Scotland, school leavers from the 20-40% most deprived postcodes in Scotland (SIMD20/40, Scottish Index of Multiple Deprivation, a measure of socio-economic disadvantage) are 5-10 times less likely to qualify for university entrance (Universities Scotland, 2012), let alone for the undergraduate medical course with its more demanding academic admissions requirements. Recognition of the need to increase access for, and participation of, underrepresented groups in Scottish Universities led to the establishment of the National Reach outreach programme in 2010. This programme aims to raise the aspirations of underrepresented groups while they are still at school, and provide them with practical help on accessing specific high-demand professions: Medicine, Veterinary Medicine, Law and Dentistry. The initiative is shared by five universities in Scotland (Glasgow, Edinburgh, St-Andrews, Dundee and Aberdeen), and is funded by the Scottish Funding Council (SFC) with the aim of addressing the existing disparity in terms of representation of students from working class backgrounds on these courses, mainly due to the attainment gap among the pupils.

From the outset of the programme the undergraduate Medical School in Glasgow has engaged with an increasing number of secondary schools in the West of Scotland whose HE progression rate is below the national average (of currently 35%). 95 such schools send pupils from years 4 to 6 of secondary education (S4-S6, Senior phase, equivalent to Years 10-12 of the National Curriculum in England and Wales) to take part in the programme, which offers in-school sessions on essay writing, study skills and critical appraisal of a given medical topic, as well as a week-long Summer School. The Summer School aims to offer impartial, easily accessible information regarding university learning and teaching, offers an opportunity to experience lectures and small group teaching sessions. It also provides tailored support with the application process, which includes preparing the pupils to sit the University Clinical Aptitude Test (UCAT, formerly UKCAT) and the interview. Moreover, during the week pupils have access to simulated clinical experiences and discuss various career pathways that are possible with a medical degree.

It was hypothesised that working in clusters would allow pupils to meet others from similar backgrounds and be part of a network of like-minded people they can rely on if/when they make the transition from school to university. This helps the Reach participants to overcome barriers on the challenging road to successful applications, and, after that, it aids student retention. Although the overarching ethos of the programme is similar, individual Universities engage with secondary schools at different degrees of intensity.

After the successful pilot, in 2012, the Glasgow Medical School undergraduate selection panel decided to use contextual admissions for those who completed the Reach programme. Student demographics, verified centrally on receipt of applications were taken into consideration, with downward flexibility on UCAT (10% uplift in scores) or academic entry
requirements (two grades lower accepted, should these be below the published standard entry requirements). As such, we were allocating 16-18% of the total available places to students coming from target schools, as a result of a robust implementation of the Reach programme.

In addition, the UG medical school in Glasgow has been working with Further Education Colleges to run the Scottish Wider Access Programme (SWAP), supporting access to university for adult learners. This programme is aimed at mature applicants and attracts a wide range of people who did not achieve the grades, and/or have the opportunity, to enter the medical profession on completing their secondary education. After completing a one-year access programme and passing it ‘with merit’, they must sit the UCAT and submit themselves for interview. Another category of more mature applicants that the Medical School actively tries to encourage are those with care experience (care givers/care experienced) and asylum seekers.

Fine-tuning of targeting to the right student cohort
There is a direct correlation between the progression rate to HE for a secondary school and the proportion of pupils in that school residing in SIMD20/40 postcodes (McKenna, 2016; Croll, 2016). Indeed, a school may have a low progression rate exactly because of low attainment of its SIMD20/40 pupils, who will not progress to HE in high numbers. This would logically suggest that it is the pupil’s residential postcode, and expectations from home, rather than the school attended, that provides the disadvantage. This rationale is echoed in the Scottish Government’s target that recommends that at least 20% of full-time first-degree entrants to Scottish universities should come from the 20% most deprived postcode areas (Somerville, 2017). Although it can be argued that targeting by lower progression school is valid - as these schools are predominantly populated by pupils living in SIMD20/40 areas - the student’s demographic must still be carefully weighed before using contextual data for their admissions because not all students in such schools are from genuinely deprived backgrounds.

For example, depending on the criteria used (parental experience of HE, postcode residence or Socio-Economic Code (SEC, an occupationally based classification reflecting parental socio-economic background)), 60-80% of the Reach students admitted between 2012-2015 had demographics that were similar to the rest of the (non-Reach) class and could thus be argued not to genuinely belong in the target group at all. Therefore, applying more than one widening participation flag will substantially improve the targeting of this programme and help those who truly are multiply deprived. Using a blanket measure of SIMD residence or school targeting will give an unfair advantage to those who attend the low progression schools but don’t reside in SIMD20/40 postcodes, while it is also likely that we would fail to admit those who by postcode residence would have been in our target group and should have benefitted from an adjusted offer.

Recent University of Glasgow initiatives related to widening access
In order to address this, the medical school has extended the same policy of contextual admissions to all residents under the age of 21 from the target postcodes, irrespective of participation in the Reach programme. By amending the policy, we have made the process transparent and much fairer for all SIMD20/40 residents as they should have benefitted by being included in the programme. It is likely that the universities may need to extend the current targeting matrix to SIMD20 residents in high progression schools as well, in order to meet the Scottish government’s 2030 target of 20% of HE entrants being from SIMD20 postcodes; pupils living in these areas are statistically less likely to progress to HE, due to high deprivation and low expectation and aspiration to go to University. At the same time, it must be recognised that attending low progression schools will put a pupil at a disadvantage regardless of residence postcode because it increases the likelihood of them not achieving the grades necessary to enter the highest-demand courses in HE. Thus, although there is a justification for applying the WP flag for either condition, we must conclude that by applying just one criterion it is certain that a significant percentage of ‘false positives’, i.e. applicants that are not truly multiply deprived will be given tariff discounts that their peers are not entitled to.

The other option to increase the pool of genuinely disadvantaged applicants would be to engage with low HE progression secondary schools earlier on, in order to raise the aspirations of SIMD20 pupils. There are encouraging examples of engagement from our students working with pupils in nursery schools and primary schools (in early years), who manage to boost aspiration among the pupils, although it is recognised that a sustained effort is likely to be required to not only kindle interest in the medical profession but to nurture the enthusiasm and interest for it to last until the application stage.

For the same reason, the Glasgow medical school engages with S3 pupils (roughly equivalent to Year 10 in England and Wales and Year 11 in Northern Ireland) from SIMD20 areas across the West of Scotland, in order to have a meaningful conversation with them before they select their S4 subjects; this ensures that pupils have access to the right information at the right time and choose the subjects that enable them to pursue a medical degree. Engaging with them the following year will miss the potential applicants who might have had ability to study medicine but have chosen the wrong combination of
subjects for Highers. To this end an annual information day is organised at the Glasgow Medical School. The event is advertised via schools within 12 Local Authorities in the West of Scotland and provides a platform for information delivery from senior academics, clinicians, admissions officers and welfare staff. This well-attended event is supported by the Glasgow University Widening Access to Medicine Student Society (GUWAMS) as well as alumni from WP background, who have gone on to become junior doctors. Most importantly, however, these events are designed to target not just the pupils but their parents as well. It is widely accepted that an attitudinal change is required among the parents of pupils from lower socio-economic backgrounds if we want to attract applicants from this group. We hypothesised that events that target both pupils and their parents, who are the main influencers of the decision whether to go to HE, would significantly improve our chances of engaging the target audience.

In Glasgow, the S3 event paves the way for pupils to enrol into the Reach programme the following year, which eventually prepares them for entry to the profession. In 2018 the medical school graduated the first cohort of Reach medics, who themselves are tremendous role models for the next generation of WP applicants. The University and the medical school provide full support to those who want to succeed - first by raising aspiration, then supporting them through the application process, applying the agreed tariff flexibility and, finally, providing mentoring to ensure they succeed on the course. It is our belief that in this way we will see an increase in genuinely disadvantaged applicants to the medical school, with improved grades and motivation, and an improved chance to succeed.

In a further initiative, the Scottish Government funded a pilot project (the Glasgow Access Programme, GAP) aimed at home students from SIMD20 postcodes, designed to provide the required knowledge in key subjects that is necessary at entry level. 20 students were recruited to a one-year pre-medicine gateway course for which the entry requirements were lowered significantly (AABB at Scottish Higher vs standardAAAAA or AAAABB) and those who qualified were offered a place after interview. The students that perform well in the GAP course transition into year one of undergraduate medicine without further interview or the need to sit the UCAT. The success of the first cohort (95% entered the medical curriculum after successful completion of the GAP) demonstrates that the approach is right and can generate the change needed in order to further widen participation of the able applicants from non-traditional backgrounds.

**Outlook**

Ideally, a combination of externally validated and individualised measures such as Free School Meal (a statutory benefit available to school-aged children from families who receive other qualifying benefits and who have been through the relevant registration process), Educational Maintenance Allowance (a financial scheme applicable to those aged between sixteen and nineteen whose parents had a certain level of taxable income) or receipt of UCAT (University Clinical Aptitude Test) bursary (for those with verified financial disadvantage, either as an individual or at a household level) would complement SIMD20/40 data and school progression rates that change over time. The Sutton Trust report *Admissions in Context* strongly recommends a greater use of individual or household measures (Crawford, 2017) that could allow more effective targeting and intervention to those applicants experiencing disadvantage. Moreover, the richer and more diverse the data on applicants, the more difficult it would become to game the system and, conversely, the easier it becomes to select out of all applicants those that are most deserving of special consideration. Finally, it must be argued that we should work towards a harmonisation of access-related programmes/criteria for all Scottish Medical Schools. While it will take time for these programmes to translate into a diverse medical workforce representing all of society, we believe that current strategies have finally set us on a course towards achieving that aim.

**Take Home Messages**

- The Reach programme to widen participation of non-traditional applicants in Glasgow has targeted pupils from low progression schools and has increased successful WP applications.

- Adding a second condition, SIMD20/40 residence, while improving targeting of these programmes, decreases the applicant pool for WP schemes.

- Extending the targeting matrix to applicants under 21 from deprived postcodes made the process transparent and fairer for all SIMD20/40 residents and helped meet the WP target.

- Engaging with pupils from early secondary school years to nurture aspiration paves the way for pupils to enrol into the Reach outreach programme.

- Gateway programmes (like the Glasgow Access Programme) attract able applicants from non-traditional backgrounds residing in SIMD20 areas.
Notes On Contributors
Nana Sartania, PhD, M.Ed is Deputy Director of Admissions and Senior Lecturer in the Undergraduate Medical School in University of Glasgow. Her research interests are concerned with the predictive validity of the admissions criteria currently used in the UK and how the use of contextual data in the admissions process impacts on the school’s efforts to widen access to the medical education locally.

Graham Haddock, MD, MBChB, is Honorary Clinical Associate Professor and Admissions Lead in undergraduate Medical School of the University of Glasgow. His focus is on widening participation of underrepresented groups. Mr Haddock is a paediatric surgeon at the Royal Hospital for Sick Children in Glasgow.

Mark Underwood, MD, MBChB, is a Consultant Urological Surgeon at the Glasgow Royal Infirmary and Deputy Director of Admissions for Glasgow Medical School.

NS was involved in the original design, data collection and writing of the first draft of the paper. GH and MU contributed to the discussions and reviewed the paper. All authors read and approved the final manuscript.

Declarations
The author has declared that there are no conflicts of interest.

Ethics Statement
This is opinion piece and ethics approval was not required.

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Open Peer Review

Migrated Content

Reviewer Report 01 January 2020

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P Ravi Shankar
American International Medical University

This review has been migrated. The reviewer awarded 4 stars out of 5

Over the last year (2019) there have been many papers in the journal discussing the issue of widening access to medical schools. This is a well-written paper which discusses the issue of widening access to the undergraduate medical program at the University of Glasgow. I am not sure if the successful applicants also receive financial and other support during their course of study. Also are there any service obligations for graduates of the program? Many of the lessons outlined in this paper could be applied to other countries and locations though, there will also be significant differences.

Competing Interests: No conflicts of interest were disclosed.

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Jennifer Cleland
University of Aberdeen

This review has been migrated. The reviewer awarded 2 stars out of 5

An interesting paper reporting on a local approach to widening access. The paper would have benefited from more grounding in the wider literature on the limits of the markers used for WA admissions (such as
SIMD) rather than just quoting the Sutton Trust report. Doing so may have also made this more accessible to people in other contexts/countries. There is also some recent data on these markers from Paul Lambe which would have been relevant to this paper - as it casts doubt on the utility of the so-called "basket of contextualised data" that the authors are proposing.

**Competing Interests:** No conflicts of interest were disclosed.

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Louise Alldridge  
University of Plymouth

This review has been migrated. The reviewer awarded 5 stars out of 5

This is my second review. This paper outlines the commonly encountered problems of widening participation in medicine but is also more widely applicable to accessing Elite Universities as well as other over-subscribed and professional programmes such as Veterinary Science, Law etc. It openly addresses one of the biggest issues in ensuring WP interventions are reaching truly disadvantaged students. The paper has developed the deeper implications and related these to the three forms of capital and the reproduction of society.

**Competing Interests:** No conflicts of interest were disclosed.

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Ken Masters  
Sultan Qaboos University

This review has been migrated. The reviewer awarded 4 stars out of 5
This is a revised version of the authors’ previous submission. The authors have adequately addressed my concerns.

**Competing Interests:** No conflicts of interest were disclosed.

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**Version 1**

Reviewer Report 23 March 2019

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**Paul Tiffin**
University of York

This review has been migrated. The reviewer awarded 5 stars out of 5

This is a timely and thoughtful article. The authors rightly raise some of the practical challenges of identifying and defining WP candidates, correctly stressing the role of individual-level markers. They also provide a good example of an initiative addressing some of the very real disadvantages faced by under represented groups. My only suggestion is that most articles on this topic should first stress that the whole WP issue in the UK is an epiphenomena of the increasingly marked societal inequalities, especially in respect to income and education. Therefore universities are under pressure to fix a problem that has been caused by governmental policies that have exacerbated inequalities for some period now.

**Competing Interests:** No conflicts of interest were disclosed.

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**patrick west**
retired
This review has been migrated. The reviewer awarded 4 stars out of 5

This is an interesting and well written position paper on the important issue of widening access to medical school among students from disadvantaged backgrounds. It is descriptive both in respect of the overall problem and in respect of the school-based programmes to increase rates and success of medical school application. The authors clearly identify the basic problem with the current (school-based) targeting, which results in over identification of non-deprived pupils, and make a persuasive case for the inclusion of individual and/or household factors to reduce the number of ‘false positives’. The only criticism I would make is that the authors should acknowledge more clearly that the programme is based in Scotland and might not generalise to other educational systems. Readers from outside Scotland are likely to find references to specific stages of secondary school (S3, S4 etc) difficult to understand without more context.

**Competing Interests:** No conflicts of interest were disclosed.

Reviewer Report 10 January 2019

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Enam Haque
University of Manchester

This review has been migrated. The reviewer awarded 4 stars out of 5

Really interesting paper, covering the invaluable Glasgow Reach Programme. Adding a second condition is an important step, to ensure authenticity of pupils applying to widening participation programmes. I would love to see a comparative study with an English based medical school programme, to see if what the differences are. Enam Haque

**Competing Interests:** No conflicts of interest were disclosed.

Reviewer Report 24 December 2018

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Ken Masters
Sultan Qaboos University

This review has been migrated. The reviewer awarded 3 stars out of 5

An interesting read dealing with issue of ensuring a wider intake of students. Some comments:
• The focus of the paper is on one country only. This should have been reflected in the title (even though some of the lessons learned may be more internationally applicable). It should similarly be taken into account in the body of the paper, where references to “MD20/40 postcodes” and “S3 pupils” are, frankly, meaningless to readers not familiar with Scotland.
• Even though the demographic indicators are somewhat specific to the country, the paper does highlight the danger of using a single demographic indicator to identify a group of people. This is especially dangerous in the case of postal codes, an indicator that can easily be manipulated by candidates desperate to get into medical school. (For example, it would have been interesting to know how many of the students from those areas had moved into those areas shortly before applying to medical school, a practice not unheard of in other countries).
• This broader danger, however, needs to be read into the paper by the reader. I think the paper’s value to the general reader could have been increased if the authors had returned to reflect on some of the examples they gave in the opening paragraph dealing with similar issues in other countries.

Competing Interests: No conflicts of interest were disclosed.

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Louise Alldridge
University of Plymouth

This review has been migrated. The reviewer awarded 4 stars out of 5

This paper outlines the commonly encountered challenges of widening participation in medicine. It openly addresses one of the biggest issues and to some extent the ‘elephant in the room’, i.e ensuring WP interventions are reaching and helping truly disadvantaged students. This includes targeting students for interventions and the eventual selection criteria used. This is not an easy mission and is not helped by the criteria with which the government measure success. The paper outlines and reflects on, in an open and honest narrative, the evolution of a strategy to target working class students to ultimately produce a workforce that reflects the population it serves. As such I believe it provides useful information, based on the considerable experience of the authors, for all those working in WP in a medical setting. I only have
one recommendation for a small change. In the introduction, the authors collectively define social and cultural capital as belonging to a network that enables social mobility. These are two different forms of capital that contribute to a person's habitus (and both very important with regards to accessing a medical career in the medical 'field'). It would be better to see social and cultural capital defined separately and reference Bourdieu at this point.

**Competing Interests:** No conflicts of interest were disclosed.