

**Teaching exchange paper**  
**Education in Primary Care**

Innovative, paired careers tutorials. Increasing the number of medical students choosing general practice as a career.

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## **Abstract**

### ***Background***

With a crisis in general practice recruitment, to maintain the current workforce, the Department of Health and Social Care quote a need for 50% of our medical students to choose general practice as a career. There is much variety between medical schools and Nottingham University, alongside most others does not achieve this.

### ***Aim***

To increase the number of medical students at Nottingham University who would consider a career in general practice

### ***Design and Setting***

Innovative, paired careers tutorials embedded into a new 4-week general practice attachment at Nottingham University with student evaluation

### ***Method***

2 paired careers tutorials, giving guided careers advice to 4<sup>th</sup> year medical students, using the strapline “General Practice can be whatever you want it to be...”. The tutorials promoted portfolio GPs and enabled students to look at their current career choice and how general practice could fit into that.

Paired evaluation in week 1 and 4 was completed. Students were asked open-ended questions regarding current career choices and (using a 5 point Likert scale) whether: “General practice is a possible career choice for me”.

Due to the new nature of the course, the first, of four cohorts was excluded from the evaluation to ensure standardised teaching and remove potential bias. The data analysed using the Wilcoxon signed rank test.

### ***Results***

We surveyed 218 students with a response rate of 218(100%). At the end of the module, in the second careers tutorial, 80(36.7%) gave a higher score suggesting they were more likely to choose general practice as a future career, 107(49.1%) had no change in score and only 31(14.2%) provided a lower score.

There was a significantly higher median score at the end of the attachment the median (IQR) pre-survey score was 3 (3-4) and the median (IQR) post-survey score was 4(3-5).  $P < 0.0001$ .

### ***Conclusion***

Increasing medical student exposure to general practice with innovative, paired, careers tutorials increased the number of students who would consider a career in general practice.

### **Keywords**

General practice, career, recruitment, medical education, workforce, innovation

## Background

There is a crisis in general practice recruitment. In 2017, general practice had the highest numbers of vacant training posts in all specialities, (16% of all posts).<sup>1</sup> This, added to the increasing amount of clinical work now undertaken in a community setting, and an older population of GPs set to retire, means that to maintain the current primary care workforce, the department of health and social care cite 50% of our medical students need to choose general practice as a career.<sup>2</sup> Nottingham University, like most other medical schools is failing to achieve this<sup>3</sup>. A 2016 report, 'By choice, not by chance',<sup>4</sup> shows that less than 20% of medical school graduates completed their higher training in general practice (CCT).

It is well known that undergraduate education influences student career choices, and it's been proven that there is a link between the quantity and quality of general practice teaching at university, and the number of students who go on to enter general practice training.<sup>5</sup> When compared to the rest of UK medical schools, Nottingham had the lowest student exposure of undergraduates to general practice, with less than 20% of the Nottingham graduates choosing general practice as a career and completing their training (CCT)<sup>4</sup>.

To address the discrepancy in student exposure to primary care and the need for more graduates to consider a career in general practice from Nottingham University, a new 4-week module for 4<sup>th</sup> year medical students was introduced in 2016 which doubled the exposure to general practice. Two innovative, small group (n=10), careers workshops, promoting portfolio GPs, led by experienced GP educators were added in weeks 1 and 4 of the attachment.

### **Careers workshops** (See lesson plan figure 1).

Destination GP<sup>6</sup> encourages us to give "an accurate and informed picture of the current and future general practice landscape" in undergraduate education including portfolio working and GPs with specialist interests (GPwSI). Using the strap line "General Practice can be whatever you want it to be", the first careers workshop was undertaken on day 2 of the attachment to introduce the concept of general practice as a career, portfolio working and the expansion of GPwSIs. The aim was to support those already interested in general practice and to encourage those students who did not see themselves as general practitioners in the future to look at how general practice could help their career choices. For example a budding surgeon could do minor operations/vasectomies, a gynaecologist could fit coils/implants etc.

#### *Careers workshop 1*

Prior to attending the careers workshop, the students were asked to reflect on their current career choice (or lack of) and fill in a pre-workshop questionnaire to include their current career choice (or undecided), reasons for that choice, how they anticipated general practice could help in their current career choice or be a part of their career option in the future.

At the workshop, facilitated by an experienced GP tutor, each student (n=10), was given the opportunity to discuss in a group their reasons for their career choice, with common themes identified and summarised on a white board.

Students were then asked to participate in an exercise by standing in a line with the student most likely to choose GP at one end, and the student least likely at the other end. The order of the line was noted (or photographed with student permission) and a student-led group

discussion encouraged enabling them to reflect on how likely they were to choose GP as a career. A Likert scale was completed at the end of the discussion (Fig. 3)

A facilitator-led discussion on the typical and shortest pathway into general practice (including details of RCGP examinations) was then compared their own career journey, and career options once qualified as a GP identified. Student-led group discussion was then encouraged in pairs regarding considerations to take into account when choosing any career. This usually included academic interests, pay, status, flexibility, hobbies and personality etc. The facilitator then focussed on themes of dynamic verses fixed influences on career choices whilst ensuring the flexibility of general practice was highlighted and ensured all career choices discussed by the students was included and how/if they could achieve that choice in primary care.

The tutorial was brought to a close by focusing on the strap line “General Practice can be whatever you want it to be...” The group looked at how their 4 -week attachment could help their current career choice to ensure they get the most out of their placement. For example, one student who was interested in palliative care, became involved in several end of life patients, helped support a newly diagnosed terminal cancer patient, was able to help set up syringe drivers with the district nurses, attended a death and saw the process of verification, certification and cremation form completion. A student interested in paediatrics was able to attend the 6-week baby checks, spent time with the health visitor and midwife on home visits and the practice set up an urgent clinic for children where he was able to see every child first.

### *Careers tutorial 2*

The second careers tutorial was at the end of the placement, in week 4, allowing interim reflection, consolidation of learning and to enable students to think about future career choices based on their experiences.

Prior to the tutorial students were asked to reflect on their career choice and the choice now they were at the end of the attachment and fill in a pre-workshop questionnaire.

The students were invited to repeat the line exercise and Likert scale response. (fig. 3).

A facilitated discussion then took place looking at who (if anyone) moved position in the line, why the moves happened and what influences made the changes happen. Equally, if no one moved, an important discussion took place to look at why no one moved. Finally, the group were then encouraged to discuss how the 4-week attachment allowed them to optimise or change their current career choice, and if and how general practice could be a career option for them in the future.

The session was closed by thanking the students and signposting them to additional careers resources.

### **Educational theory**

The careers tutorial design is based on Blooms Taxonomy,<sup>7</sup> (promoting higher forms of thinking, thus in turn deeper learning), and the Kolb learning cycle<sup>8</sup>, giving students time to reflect on experiences before and after the 4-week placement in primary care. Using a mixture of these two broad schemes, with the added knowledge of the Honey and Mumford

learning styles,<sup>9</sup> enabled development of a specific and individual type of experience for the students that they would not have been exposed to before.

Understanding that all students are different and have varying learning styles is essential when developing innovation in teaching. Using Honey and Mumford<sup>8</sup> ensured that we considered all types of learner within each tutorial. We used group discussions and problem solving for the activists and pragmatists, stories and evidence for the theorists, ability to think about applying learning for the pragmatists and paired discussions, self-analysis and time to think for the reflectors. Not all students would benefit from every activity, but ensuring a spread of activities and approaches meant we were able to involve and maximise the number of students who engaged.

Rather than simply *telling* the medical students about general practice, where the learning pyramid,<sup>10</sup> suggests only 5% of that knowledge will be retained with a lecture approach, the students were encouraged, using Blooms taxonomy<sup>7</sup> to:

- Summarise and understand their own and the primary care career journey during pre-course reflection and group discussions, (comprehension)
- Apply it to their unique situation by working with their host practice/GP tutor to include ideas of their own such as paediatric or minor surgery clinics dependent upon their career choices, (application)
- Analyse and compare their knowledge to that they already have during group discussions in the careers tutorials both with peers and a facilitator (analysis)
- Synthesize their own opinion following unique experiences within general practice by thinking about how likely they were to choose general practice as a career and how their general practice attachment had helped them in their career choice (synthesis), and
- Encouraged to evaluate their new found knowledge and cross reference it to their initial career choice when comparing the GP career line exercise and the Likert scale in both tutorials to determine how likely they were to choose general practice as a career (evaluation)

Using reflection pre-tutorials enabled students to complete the Kolb learning cycle.<sup>8</sup> All students have preconceptions of primary care as a career, and at Nottingham there is evidence that our secondary care colleagues attitudes, added to low exposure to general practice during the degree course impact on the low numbers of students choosing general practice as a career. Perceptions of general practice<sup>11</sup> shows that 72% of all medical students (71% Nottingham) have experienced negativity towards general practice at medical school or in a clinical environment, and this was confirmed in our small group discussions. Perceptions of poor referrals, inappropriate clinical practice, general practice being the “easy option”, “boring”, “in crisis”, and “less intellectually stimulating” were consistent preconceptions amongst the students.

By challenging the frame of reference based on a students own core beliefs, attitudes of secondary care tutors and perceived poor images of general practice in current media in society during the small group teaching sessions, we show, by experience, that this shaken core belief can be changed by individualising general practice to fit into the students own choices and by highlighting “General practice can be whatever you want it to be....” .

Bartlett,<sup>12</sup> describes schemata, or patterns of thinking that guide behaviour. If we can challenge that pattern of thinking (e.g. General practice is a poor or a second class career choice), for those students who would not consider general practice as a career, by giving them new knowledge, and on top of this knowledge, add new experiences, (seeing first hand the breadth and excitement of primary care), once disequilibrium hits, (the imbalance between their core belief and the new knowledge), the student will have to recreate equilibrium in their own attitude towards primary care. Either, they will decide the new knowledge and experience does not fit with them and go back to their original stance, hence reject the new idea (GP is a potential career choice for me), or, as we have proven, they will start to develop a new schemata or an adaptation of the old one, which would then allow the student to consider that general practice *could* after all be a career opportunity for them.

## **Evaluation**

In weeks 1 and 4, students were asked the same open ended questions regarding career choice (Figure 2), how general practice could help that career choice, and to fill in the same Likert scale (figure 3), to see how much they agreed with the statement “General practice is a possible career choice for me”.

There were 4 cohorts of students during the academic year 2016-17 passing through the new 4-week module, 3 of the 4 cohorts were evaluated, (n=218). A qualitative, 5-step thematic analysis was performed of the free text responses to give an indication of themes, and a quantitative analysis, using the Wilcoxon signed rank test performed on the paired data set. Of the 218 students evaluations reviewed all had paired data.

## **Results and statistics**

There were 322 students in the academic year of which 172(56%) were female and 149(44%) male. 90(30%) were postgraduate entry students. 104 students in the first cohort were excluded due to the new nature of the course leaving 218(67.7%) student evaluations included in this review.

### ***Quantitative data***

We surveyed 218 students using the Likert scale (Figure 3) with a paired response rate of 218 (100%). Of the students with paired data, 80(36.7%) gave a higher score suggesting they were more likely to choose general practice as a future career, 107(49.1%) had no change in score and only 31(14.2%) provided a lower score post placement suggesting a reduction in their intention to choose general practice as a career.

There was a significantly higher median score at the end of the attachment than before. The median (IQR) pre survey score was 3(3-4) and the median (IQR) post survey score was 4(3-5).  $P < 0.0001$ .

### ***Qualitative data***

Student career intention taken from the free text during the 2016-17 year before the 4-week module in general practice showed that the largest group was undecided (36.8%). Of those who had already decided, the main career choices were general practice(26.1%), gynaecology(20.6%), surgery(18.6%), medicine(17.9%), paediatrics(17.9%), Obstetrics and psychiatry(3.1%) and 1 student choosing public health.

The percentage of students who would consider a career in general practice overall following the 4-week module increased from 26% to 43% with gains from all groups (Figure 4).

Thematic analysis of free text responses at the end of the attachment showed the biggest positive career experience from the 4-week attachment was the ability to see specialist clinics of their choice within primary care with 182/216(84.3%) citing this. These ranged from paediatric and minor surgery clinics, to drug misuse, cardiac/ pulmonary rehab and prison medicine. 166/216(76.9%) students cited the advantage of clear and honest exposure to primary care, the discussion around career pathways into general practice and variety of the GP role. Other key themes that were significant included the ability to have specialist interests, 81/216(37.5%), significance of the multidisciplinary team and lack of isolation in primary care, 38/216(17.6%), understanding the management and business perspective of primary care, 35/216(16.2%) and understanding the real differences between primary and secondary care as a career, 21/216(9.7%).

## **Conclusions**

Education is a powerful lever for change, not only in terms of knowledge but also in this case as a potential catalyst, as a determining factor for future career choice. Career choice is however complex and students should be enabled to make a well-informed, supported and positive choice regarding their careers. They should be allowed to experience first hand the truth of general practice, its changing landscape in terms of the increase in portfolio GPs and GPwSIs and be able to challenge their core beliefs that have been shaped by the environment and social construct around them. By increasing medical student exposure to general practice, introducing innovative paired careers tutorials and using the strap line “General Practice can be whatever you want it to be, we have influenced the number of students who would consider a career in general practice.

Our evaluation is on-going and longitudinal data will tell us whether this impact that we have seen in the immediate term, translates into longer term impacts in careers choices from Nottingham University.

Word count 2420 excluding title, declaration and references

**Figure 1. Lesson plan**

<b>Time</b>	<b>Activity</b>	<b>Delivery</b>
Pre tutorial	Pre- reflection	Pre-reading material and videos on choosing general practice as a career, reflect on their current career choice, (or lack of), and fill in a pre workshop questionnaire
<b>Week 1.</b>	<b>Tutorial 1</b>	<b>Title: “General practice can be whatever you want it to be.....”</b>
0-30 mins		<ul style="list-style-type: none"> <li>Facilitated discussion where pre-course questionnaires are all discussed in career choice (or lack of) identified including the pros and cons of their own career choices , with common themes identified and documented by the facilitator on a white board/flip chart.</li> <li>GP career line exercise with student led group discussion</li> </ul>
30-60 mins		<ul style="list-style-type: none"> <li>Facilitator led discussion on GP training pathway and comparison of that typical journey to their own journey into general practice, highlighting the different alternative pathways possible.</li> <li>Group discussion on reasons for a choice of any career.</li> <li>Facilitator led discussion summarising reasons paying particular notice to the difference between fixed and dynamic career choices, whilst ensuring they realise the flexibility of general practice.</li> </ul>
60-90 mins		<ul style="list-style-type: none"> <li>Facilitator led discussion to show variety within general practice, ensuring all of the career options that the students have shown an interest in are included.</li> </ul>
90-110 mins		<ul style="list-style-type: none"> <li>Group discussion focussing on the strap line for the attachment, “General Practice can be whatever you want it to be...”, the group is encouraged to look at how their upcoming attachment in general practice can help their current career choice</li> </ul>
110-120 mins		<ul style="list-style-type: none"> <li>Students are encouraged to go back to their practice placement the following day and put into place some of the suggestions they considered, to aid their current career choice. The aim is for them to experience some or all of their ideas within their 4-week clinical placement.</li> </ul>
<b>Week 4</b>	<b>Tutorial 2</b>	<b>Title: Career Conclusions</b>
Pre tutorial	Pre-reflection	Prior to the tutorial, the students were asked to reflect on their career choice now they were at the end of their attachment, (being aware they may still not have made one), and fill in a pre-workshop questionnaire
0-30 mins		<ul style="list-style-type: none"> <li>GP career line exercise with student led group discussion to reflect on how likely they are to become a GP when compared to their peers.</li> <li>Facilitator led discussion looking at movement within the line (if any), and reasons for this</li> </ul>
30-60 mins		<ul style="list-style-type: none"> <li>Group discussion on how the general practice attachment allowed them to optimise their current career choice, or change their current career choice, and if and how general practice could be a career option for them in the future.</li> <li>Termination and signposting</li> </ul>



**Figure 2.** Open-ended careers questions in week 1 and week 4 of the module

<p><b><u>Week 1</u></b></p> <p><b>Career aim at beginning of placement</b></p> <p>State “none” if uncertain</p>	
<p><b><u>Week 1</u></b></p> <p><b>How general practice can help with my career aim</b></p>	<p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p> <p>5.</p>
<p><b><u>Week 4</u></b></p> <p><b>Career aim at end of placement</b></p> <p>State “none” if uncertain</p>	
<p><b><u>Week 4</u></b></p> <p><b>Things experienced during the placement that fulfilled your career aims</b></p>	<p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p> <p>5.</p>

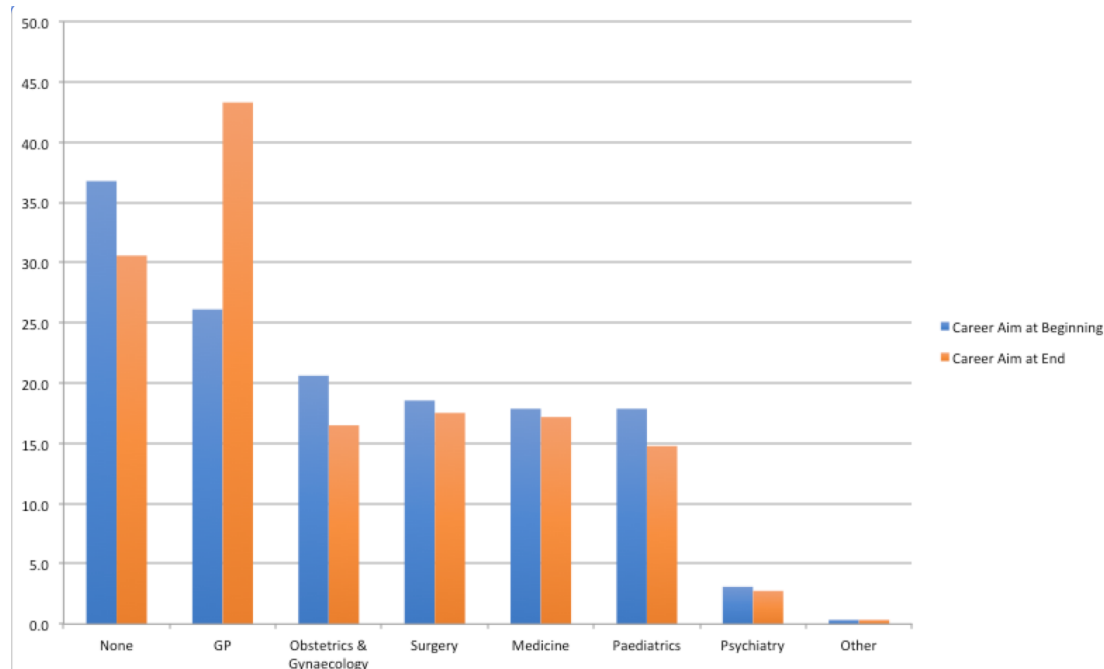
**Figure 3** Likert scale used in week 1 and week 4

<p>“General practice is a possible career choice for me”</p>
<p>Strongly disagree (1)</p>
<p>Disagree (2)</p>
<p>Undecided (3)</p>
<p>Agree (4)</p>
<p>Strongly agree (5)</p>
<p></p>

**Figure 4. Career choices at the beginning and end of the 4-week module.**

**X career choice**

**Y Percentage of students**



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### **Additional information**

There are no competing interests

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