Institution: University of Nottingham

Unit of Assessment: 4 – Psychology, Psychiatry and Neuroscience

Title of case study:
Transforming the Selection of Medical Practitioners in the UK and Australia with the Application of a Novel Competency Model

Period when the underpinning research was undertaken: 2000 to 2018

Details of staff conducting the underpinning research from the submitting unit:

Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Eamonn Ferguson	Professor of Health Psychology	1991 – present
Fiona Patterson	Lecturer in Psychology	1999 – 2002

Period when the claimed impact occurred: August 2013 - present

Is this case study continued from a case study submitted in 2014? N

1. Summary of the impact

Researchers from the University of Nottingham (UoN) developed the first ever competency-based model for the selection of doctors for postgraduate training in general practice (GP) in the UK. This model was adopted to form the criteria for the national selection system by the GP National Recruitment Office (funded then by Department of Health, now Health Education England). Between August 2013 and October 2019, 24,914 trainee GPs were recruited using the selection system developed at UoN. The GP competency model informed development of the person specification that underpins the selection system which has now been adopted by all 16 Royal Colleges of Medicine in the UK to recruit trainees to all 58 postgraduate medical specialities. The reach has been further expanded as the methodology developed by UoN has been used to develop competency-based models to recruit all 59,076 undergraduate and foundation medical students in the UK, and the methodology and approach has been adopted internationally to select postgraduates for training in GP in Australia. The competency model also enables early identification of trainees who are likely to require additional training, thus reducing the need for costly training extensions, at a projected total cost saving of GBP250,968,688 for the NHS. Finally, when the UK was locked down during March and April 2020, to curb the spread of Covid-19, the selection test that was developed from the UoN competency model was adapted to be used remotely (rather than at an assessment centre), facilitating GP recruitment, ensuring that a continual stream of qualified GPs entered the NHS at a time of critical need.

2. Underpinning research

In 2000 there was a crisis in GP recruitment and retention in the UK, with few newly qualified doctors opting for GP training. Among those that did there were high drop-out rates, incurring lost training time at a high financial cost to the NHS. The Director of Postgraduate General Practice Education in South Yorkshire and South Humberside Deanery (General Practice National Recruitment Office Chair 2004) commissioned Professor Ferguson and Dr Patterson at the University of Nottingham (UoN) to explore the reasoning behind the decrease in the numbers opting to train as GPs and to develop an improved GP selection system.

With funding from Trent National Health Service Executive **[7]**, Ferguson and Patterson completed a programme of research that employed an innovative approach to address the GP recruitment and retention problem and created a selection system that both improved the fairness of GP recruitment and enhanced retention. The aim of the research was to identify the cognitive, emotional and behavioural competencies required to function effectively as a GP. This innovative research was ground-breaking as it was the first detailed analysis of postgraduate non-clinical competencies in the world. Historically, medical selection in the UK was based on clinical competencies (e.g., medical knowledge and skills), and broader non-clinical competencies were not considered. Ferguson and Patterson drew on theory and best practice from Occupational Psychology and conducted a detailed job-and-task analysis of the GP role. This involved critical incident analysis, interviews and surveys of GPs and patients, as well as observation of GP-patient interactions.

The novel research identified 11 competencies of which 6 were core competencies necessary for effective general practice (empathy and sensitivity, coping under pressure, communication skills, problem solving, professional integrity and clinical expertise). This formed the basis of a new GP selection competency model **[1]**. The non-clinical skills identified by the research are integral to GP and had not previously been identified as central to the GP role. The competency model was developed into a new GP selection system that provided candidates with a realistic insight into the wide-ranging demands that GPs face, informing their decision as to whether to apply for a GP position. This ensured that those who applied for GP training were then selected on their core competencies as well as their medical knowledge.

Validation research was conducted which compared the performance quality of GPs selected with the new competency model to those selected through the existing recruitment process. Results showed that the new competency model led to selection of trainee GPs that went on to deliver significantly better practice than GPs recruited though the existing process **[2]**. Ferguson and Patterson then explored and confirmed the applicability of the competency model to three additional medical specialities (paediatrics, anaesthesia and obstetrics and gynaecology). This resulted in the adaption of the original competency model to include speciality specific competencies **[3]**. Ferguson and Patterson have since reviewed the reliability **[4]** and best practice in the use of the competency approach **[5]** and have expanded it further to include methods and insights from behavioural economics **[6]**.

3. References to the research
Underpinning research:

1. Patterson, F., Ferguson, E., Lane, P., Farrell, K., Martlew, J., and Wells, A. (2000). A competency model of general practice: Implications for selection, training and development. British Journal of General Practice, 50, 188-193. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1313648/pdf/10750226.pdf
2. Patterson, F., Ferguson, E., Lane, P., and Norfolk, T. (2005) A new selection system to recruit GPRS. British Medical Journal, 330, 711-714. DOI: 10.1136/bmj.330.7493.711
3. Patterson, F., Ferguson, E., and Thomas, S. (2008) Using Job Analysis to Identify Core and Specific Competencies for Three Secondary Care Specialties: Implications for Selection and Recruitment. Medical Education, 42, 1195-1204. DOI: 10.1111/j.1365-2923.2008.03174.x
4. Patterson, F., and Ferguson E. (2012). Testing non-cognitive attributes in selection centres: How to avoid being reliably wrong? Medical Education, 46, 240-242. DOI: 10.1111/j.1365-2923.2011.04193.x
5. Ferguson E. (2018) Altruism and Prosociality in Healthcare Selection and Recruitment: Insights from Psychology and Behavioral Economics. In: Patterson F., Zibarras L. (eds) Selection and Recruitment in the Healthcare Professions. Palgrave Macmillan, Cham, 299-325. DOI: 10.1007/978-3-319-94971-0_12
6. Patterson, F., Ferguson E., and Zibarras L. (2018). Selection into medical education and training. In: Swanwick, T., Forrest, K. and O'Brien, B.C. (Eds). Understanding Medical Education: Evidence, Theory, and Practice, Third Edition. The Association for the Study of Medical Education (ASME), 375-388. DOI: 10.1002/9781118472361

Grants:

7. 'To develop and validate an assessment centre for GP trainees', 2000-2002, GBP60,000, Sponsor: Trent National Health Service Executive, PI: Eamonn Ferguson and Fiona Patterson

4. Details of the impact

Overview
The research led to significant practice change in the selection of doctors for postgraduate medical speciality training in the UK; moving away from selection based on medical knowledge and skills alone, to a system that also includes consideration of a broad range of key non-clinical competencies. The new competency-based selection system, initially

developed at the University of Nottingham (UoN), has had considerable reach since 2006 when it was adopted by the GP National Recruitment Office meaning all GPs in the UK have been selected using this system **[a]**. Between 1st August 2013 and October 2019, 24,914 trainee GPs were selected using the competency-based system **[b]**.

This selection approach has also had broader impact on postgraduate medical training, as evidenced in the 2019 Work Psychology Group (WPG) report **[c]** and letter from a Senior Medical Directorate Executive Team (MDET) Adviser **[d]**. These additional impacts include:

- Expansion of competency model methodology to the selection of all other medical speciality training in the UK.
- Expansion of competency model approach to include undergraduate and foundation selection of UK medical students.
- International adoption of the methodology for GP selection in Australia.
- Early identification of UK trainee GPs that require additional training and support.
- Continued recruitment of GPs during the UK 2020 lockdown in response to the COVID-19 pandemic as the tests developed from the competency-based system can be administered remotely.

Significance of adoption of competency selection model in the UK
The selection process for specialist medical practitioners in the UK has become increasingly transparent, standardised across the country, and evidence-based, owing to the adoption of the competency model. Present and past chairs and co-chairs of the General Practice National Recruitment Office (GPNRO) agree that the adoption of the competency selection model has transformed recruitment making it equitable for all applicants. As part of the Impact Evaluation of UK GP Selection (2006–2018) report carried out by the WPG, they explain that the '*competency framework was an eye opener'* **[c, pg15]**, moving assessment to an evidence base, to behaviours rather than self-reports. '*The impact [of the selection methods] is that we have a defensible selection process that is fair for all applicants*' **[c, pg17]** and a more transparent unbiased process. A GPNRO member commented '*lots of good stuff has come from it [the GP selection system]. Before it was open to bias, unconscious bias… this provides a clear playing field for everyone'* **[c, pg18]** and a past/current chair stated '*the methods we have now are much more rigorous, much more fair and… more standardised – no bias*' **[c, pg18]**.

Increased patient satisfaction is known to enhance compliance with treatment and hence contribute to positive clinical outcomes, thus impacting on patient well-being. After selection of GPs using the person specification model, data from the Midlands Deanery reported high levels of patient satisfaction for those GPs who scored well on empathy and communication competencies, even after controlling for differences in clinical knowledge **[c, pg23]**. Finally, trainee GPs with high scores for empathy and clinical problem solving passed their Applied Knowledge Test before those with lesser competency in these areas **[c, pg23]** demonstrating they were able to apply knowledge at the level required for independent practice.

Expansion of selection approach to all other postgraduate medical speciality training and undergraduate and foundation medical students in the UK
The core competency model **[1,2]** was further developed into a person specification model **[3]** that methodology was used to develop the person specification by each of the 16 Royal Colleges of Medicine in the UK and now covers 58 postgraduate specialities **[a, c]**. A member of the GPNRO commented, '*we [GPs] were ridiculed to begin with for looking for soft skills to be assessed but since then, others [specialties] have followed*' **[c, pg21]**. The reach of this selection methodology has been further applied to the recruitment of undergraduate and foundation medical students in the UK. A member of GPNRO explained, '*the undergraduate & Foundation job analysis followed on from the GP analysis*' **[c, pg21]**. Now all potential medical students in the UK are recruited using techniques to assess non-clinical competencies using the methodology developed at UoN for GP selection– totalling 59,076 students (2013/14-2019/20 intakes) **[e]**.

International adoption of the competency selection model
The competency selection system has attracted attention internationally, expanding the reach of this methodology and approach. Owing to similarities in the healthcare systems in Australia and the UK, the methodology and approach to competency modelling for GP selection was adopted by Australia in 2015 **[c, d, f]**. As stated in the WPG report '*We [Australian Government] didn't set the competencies that were assessed, the [Australian GP] Colleges did this…We did do a job analysis and it was conducted in line with UK GP job analysis methodology which was a very useful place to start*' **[c, pg21]**.

Early identification of UK trainee GPs that require additional training and support
In the UK, around 15% of GP trainees require a training extension in their final year. The average cost of a 12-month training extension to the NHS is estimated at GBP67,156 per trainee **[g]**. The WPG reported that trainee GPs with high overall scores across the competencies at selection are significantly less likely to require additional training and support, after controlling for differences in clinical knowledge **[c, pg23]**. Furthermore, using the competency model enables the early identification of any trainee GPs that are likely to require additional training and support. The Senior MDET Adviser stated that the competency model has *"the potential to not only identify those who are at risk of experiencing difficulty and requiring ATT [additional training time], but also [has] the potential to assess the level of ATT that they will require"* **[d]**. Given that 24,914 GPs have been selected using the UoN competency model during the REF census period **[b]**, this amounts to a potential maximum cost saving in training time of GBP250,968,688 **[g]**.

Continued recruitment of GPs during the UK 2020 lockdown in response to the COVID-19 pandemic
Finally, selection of GPs was able to continue in the UK during the 2020 lockdown in response to the COVID-19 pandemic, after the competency-based empirically validated system developed at UoN was adapted to an online format (previously used in assessment centres). This ensured a continual stream of medical practitioners entered speciality training in general practice in the NHS at a most critical time.

The Senior MDET Adviser stated: *"In terms of the continuing importance and impact of the GP selection/assessment centre and techniques and methodologies it generated, during March-April 2020, the GP selection test and the multi-specialty recruitment assessment (MSRA) tool that was developed from it was the only validated selection method that was able to continue to be used as face to face interviews and selection centres were cancelled. For those specialties that could not interview, they are now [June 2020] exploring the development and use of the GP selection test as a future contingency plan should there be further lockdowns during recruitment. This again is testament to the rigorous methods and theoretical approach that was adopted initially and continues to show how this GP selection system based on the assessment centre and job specification adopted in 2006 continues to have beneficial impacts in 2020 in ways that could not have been foreseen"* **[d]**.

5. Sources to corroborate the impact
a) Evidence linking papers to GP selection system, wider use for specialities and example of uptake into a speciality person specification [PDF]
b) GP Recruitment figures between 2013 and 2019 from GPRNO website (Accessed 13th January 2020) [PDF]
c) Work Psychology Group (WPG) report '*Impact Evaluation of UK GP Selection (2006–2018)*' (January 2019) [PDF]
d) Letter of support from a Senior MDET Adviser detailing the continued impact of the GP selection system (June 2020) [PDF]
e) Office for Students, Medical students intake numbers 2013/14-2019/20 (Accessed 12th November 2020) [PDF]
f) Royal Australian College of General Practitioners '*Competency profile of the Australian general practitioner at the point of Fellowship*' (December 2015) [PDF]

g) Davidson, I., McManus, C., Taylor, C. '*GP Speciality Selection Evaluation*' (January 2016) and calculations of NHS cost-saving [PDF]