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Introducing Quality Improvement Teaching into General Practice Undergraduate Placements

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Abstract:	Quality Improvement skills are deemed essential for future clinical practice of doctors by professional regulatory bodies. This paper presents the challenges of a curriculum development initiative to ensure that all medical students have involvement with a quality improvement project during a general practice placement in their fourth year. The curriculum development is described within a Plan Do Study Act framework. The learning is presented as a reflective discussion with conclusions and recommendations on how potential current barriers to implementing authentic participation in quality improvement projects for undergraduate medical students might be met. The key barriers include lack of opportunities within the curriculum structure to allow sufficient time for authentic quality improvement projects and a lack of confidence amongst placement tutors to support medical students with quality improvement projects.

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ABSTRACT

Quality Improvement skills are deemed essential for future clinical practice of doctors by professional regulatory bodies. This paper presents the challenges of a curriculum development initiative to ensure that all medical students have involvement with a quality improvement project during a general practice placement in their fourth year. The curriculum development is described within a 'Plan-Do-Study-Act' framework. The learning is presented as a reflective discussion with conclusions and recommendations on how potential current barriers to implementing authentic participation in quality improvement projects for undergraduate medical students might be met. The key barriers include lack of opportunities within the curriculum structure to allow sufficient time for authentic quality improvement projects and a lack of confidence amongst placement tutors to support medical students with quality improvement projects.

INTRODUCTION

Quality improvement (QI) is any systematic process that seeks to improve patient safety, clinical effectiveness or patient experience of healthcare [1]. The General Medical Council (GMC) describes how doctors have a duty to actively participate in QI, and that graduating medical students should understand and have had experience in QI in clinical care [2, 3].

In 2015, the Academy of Medical Royal Colleges (AoMRC) wrote to medical schools to better understand how the teaching of QI methods could be strengthened across medical schools. AoMRC and others expressed concern that emphasis was too focused on Clinical Audits, which often became reductionist. This work had four different work streams in curriculum development: QI training models and methodologies; supporting infrastructure; mapping resources and multi-professional ways of working [4, 5]. Sheffield Medical School students completed a clinical

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3 audit during their senior seven-week placement in General Practice (GP) and their evaluation echoed similar
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5 sentiments. Students often chose topics based on existing National Health Service Quality and Outcomes targets
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7 (which practices already monitor closely) or other areas where recall systems are already functioning. Though the
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9 project took place, it usually added little value with simple 'try harder' recommendations that failed to recognise
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11 underlying causes why these systems might not be working.
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14 In response to the AoMRC consultation, a review of QI teaching at Sheffield concluded that whilst students were
15
16 furnished with information (and a framework) on how a QI project might be undertaken, they had few
17
18 opportunities to fully engage with a QI project, other than the audit described above and it was proposed that this
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20 should be reviewed. In view of this, a 'Plan-Do-Study-Act' (PDSA) model (Figure 1) was devised to test some
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22 changes to the project before progressing further [6, 7]. This short paper describes the first cycle.
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28 **PLAN**

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31 GP placement tutors met in November 2015 to discuss the relevance of the audit project and its capacity to meet
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33 the learning needs of students. Placement tutors described how the current audit project too often focused on
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35 routine quality and outcome framework criteria that were already being monitored and did not encourage team
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37 discussion or promote creative service changes and that, often, focused on routine quality and outcome framework
38
39 criteria that were already being monitored. Alternatives were explored and a draft model for the option of a PDSA
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41 project met a positive reception; the new model allowed greater flexibility providing a choice between analysing
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43 care data or testing a small service change or development.
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46 **DO**

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49 Changes were implemented in 2016 and a short evaluation, itself based on a PDSA format devised. Students were
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51 offered the choice to complete a clinical audit or PDSA project devised with their placement tutors:
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- 54 1. The GP 'Audit Project' was re-named 'Quality Improvement Project'.
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2. Student and Tutor handbooks were re-written to describe various tools for QI, including examples of potential Audit and PDSA projects.
3. These changes were discussed at the module introductory seminars for the placements.
4. Letters were written to placement tutors describing the rationale for the change.

STUDY

Of the 273 students taking GP placements, just 6 students opted for the 'Plan-Do-Study-Act' report with the remainder continuing to carry out the standard audit. The PDSA projects completed were diverse and imaginative and reports were handed in before deadline at the end of the seven-week placement. Students from this year were then contacted via their university email and the online learning environment. Two students who undertook PDSA and three who chose the audit volunteered to discuss their choices and experiences. These were interviewed individually using a semi - structured approach with the aim of trying to help understand factors influencing their approach to the project. Interviews were recorded, summarised and discussed between the authors.

Table 1 here

Importance of QI

All the students described how opportunities to gain experience and skills in QI were important to them, recognising this being part of the role of a doctor. In addition, they hoped their projects could make a valid contribution to improving patient care and some felt the PDSA project had more potential for clinical impact.

'I think it is important. After we graduate we might have to do something like that in the future. So it's good to do this now otherwise when we do it in the future we will be thrown into the deep end of the water.'

'A big part of clinical practice these days so it's important to understand how to get this done. To improve clinical practice and provide the best patient care.'

Facility

Students chose audits as a less challenging option due to a number of factors. Information and guidance about Clinical Audit was more accessible in the public domain and more senior students advised current students to undertake an audit as they could provide examples of previously successful audit reports.

'I knew students from the previous year... they were like why don't you just do an audit.'

Additionally, busy supervisors were more familiar with audit as a concept, with some delegating other staff to support students through their project. The PDSA was described as more of a problem-solving project and as such, how they needed to either identify a problem themselves or have one suggested to them. This made the PDSA appear more complicated.

'I think if GP's had like an idea of the projects they wanted done... Especially if you didn't know what the practice needed.'

Time

Students who completed a PDSA project described successfully completing the project in the required time, but how needed to have a clear idea for a project themselves (or to be given clear direction from the placement tutor) at the very beginning of the placement. Those opting for Audit were fearful that the PDSA project was not feasible in the time provided.

'I presumed that you would need a long time afterwards to evaluate. I just thought, on both ends I had not got enough time.'

Preparation

Despite some teaching in quality improvement methods earlier in the curriculum, students felt

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3 they had insufficient understanding of what a QI project entailed when starting.
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7 *'If you could have given us more lectures on how a PDSA is done'*
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10 However, they generally agreed that this method of learning (learning by doing) was the most
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12 effective for them to gain the skills necessary.
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16 *'I think it is really good to get us to do Audit and PDSA. Learning by just doing it and*
17
18 *then feed back thereafter is a good way of doing it.'*
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21 22 **Support**

23 The successful completion of a PDSA project required strong direction and support from
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25 placement tutors and sufficient organisation within the practice. Despite having described the
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27 changes of implementation at tutor meetings and in revised handbooks, evaluation indicated
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29 that some supervisors described they were unsure of what the PDSA project entailed.
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35 *'As a newly qualified GP, I'm getting my head around ... how important this is to our*
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37 *work.'*
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41 *'I had never done it. The GP had never had a student who had done it'*
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47 However, those students who completed a PDSA project felt well supported in their practice and
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49 felt the whole practice had helped facilitate their projects.
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53 *'Something that as a newly qualified GP I am getting my head round this at this*
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55 *stage about how important it is central to our work. I think it was completely lacking*
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3 *from my undergraduate experience.'*
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7 **Additional benefits**

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9 Some students described other benefits in the projects such as skills in leadership and decision-
10 making, dealing with uncertainty, project management and a greater understanding of
11 limitations when trying to improve services.
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17 Overall, students described that learning about QI was important to them but how they were
18 coming to this module with little understanding of QI methods or change management, and the
19 availability of examples of clinical audits (including from previous students) and greater
20 supervisor familiarity with clinical audit shaped their choice of project. The short duration of the
21 clinical seven-week placement was a barrier to attempting a PDSA project with those that did
22 complete a PDSA project explaining how they needed a clear project focus from the very outset
23 of the placement. The length of placement provided too little time for engagement with the
24 practice team, an important generic part of both QI skills and process. Descriptions of supervisor
25 support overall were mixed - due to time, knowledge and confidence.
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39 **ACT**

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41 This PDSA cycle exposed the limited capacity, within the context of our current undergraduate course structure, in
42 addressing the development of QI skills with our medical students. Recognising this limitation has allowed us to
43 adopt more nuanced strategies to try to maximise learning within these constraints -
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- 48 1. Adding extra material on QI methods such as integrating examples of PDSA projects in
49 earlier year teaching.
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52 2. Providing a greater focus on skills of change management in the earlier seminars on
53 leadership as part of the professionalism and patient safety theme.
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- 3 3. Removing the PDSA offer for the time being in this placement, but revising the QI
- 4 project instructional material to discourage a reductionist approach e.g. excluding areas
- 5 relating to Quality and Outcomes framework targets.
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- 8
- 9 4. Providing additional GP placement tutor training on involving students in QI work during
- 10 practice placements.
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- 12
- 13 5. Looking for other opportunities for learning QI skills within the curriculum:
- 14
- 15 a. Student Selected Components: Identifying 'QI ready' General Practices that wish
- 16 to provide opportunities for students to be involved in service development.
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- 18 b. Longitudinal Integrated Clerkships: identify opportunities for QI skills to be
- 19 developed within the new longer hospital placements currently being
- 20 implemented.
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29 **Conclusion**

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32 Though we report neither a formal qualitative study nor a PDSA with iterative cycles and significance demonstrated
33 through run charts, this project helped us to clarify areas of curriculum development that will be required to
34 support students development of generic skills in the QI models and methodologies work stream of the AoMRC
35 report [4,8]. The short period in placements was clearly described as a significant barrier; we are now developing
36 longer placements both in hospital and the community based on principles of continuity developed by the
37 Longitudinal Integrated Clerkship movement elsewhere. These will be designed to provide greater opportunities for
38 service learning [9,10].
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42 Supervisors' perception of their lack of skills needs addressing. These included a lack of understanding regarding
43 the PDSA 'brand' (as a formalisation of current change management processes) and a wider lack of formal QI
44 training. We are now looking at some in-house CPD sessions with GP practice tutors to help them explore how to
45 use students as useful agents in service improvements. Additionally the Royal College of General Practitioners
46 (RCGP) now has an established programme of resources to raise awareness and skills in QI with established GPs
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3 that can be used [11]. This work has the potential to build useful connections between the medical school, our
4 placement supervisors, students and the RCGP.
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8 QI will be an important component of our students' future professional lives. Students and regulatory bodies
9 recognise this [12]. Reflecting on our findings, we suggest that other current medical school curricula may have
10 similar limiting factors. Building students knowledge of Quality Improvement methods earlier in the course,
11 developing LICs based on continuity of care and context, and support for general practice placements wishing to
12 engage medical students in service development projects will be necessary to fully address these learning needs.
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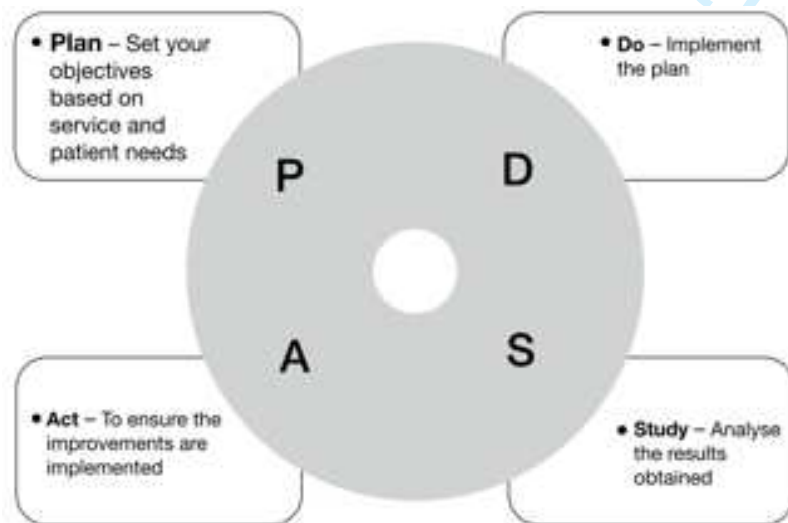
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Title	Scope of Project
Point of care c-reactive protein (CRP) testing and antibiotic prescriptions in patients presenting with symptoms of respiratory tract infection	Tested the effect of a newly purchased point of care CRP testing device on decisions about prescribing antibiotics
Introduction of new diagnostic guidelines for Type 2 diabetes	Implemented an external diagnostic guideline for Type 2 diabetes and evaluate whether it would alter diagnosis in some patients.
Introduction of an outreach care service for homeless people	Studied effect of a new homeless primary care service on frequency of patient presenting in hospitals with primary care issues, access to specialist alcohol and substance abuse services and Hepatitis b immunisation.
Provision of information on physical activity to pregnant women	Tested the practicality and effect of providing brief information on physical activity during pregnancy at antenatal clinics.
Physiotherapy assessments of musculoskeletal symptoms in primary care	Assessed the use of a new physiotherapist service considering appropriateness of triage to identify any teething problems.
Implementation of a menopause protocol	Prepared and tested the use of a new menopause protocol with GPs in the surgery, assessing utility knowledge and confidence in menopause management.

Table 1. Summary of completed PDSA projects



52 Figure 1 - Plan Do Study Act Model

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