Ulster Med J 2018;**87(2):**112-116

Medical Education

Helping doctors in training to STEP-UP

A leadership and quality improvement programme in the Belfast Health and Social Care Trust

Grainne Donaghy, Kris McKeever, Catherine Flanagan, Donal O'Kane, Bernie McQuillan, Johnny Cash, Cathy Jack, Claire Lundy.

Accepted: 16th January 2017
Provenance: externally peer-reviewed.

ABSTRACT

Introduction Medical engagement in healthcare organisations can improve service development and patient experience. Doctors in training have limited opportunities to engage in service improvement work and develop leadership skills.

Method We describe the **Specialist Trainees Engaged in Leadership Programme (STEP)**, a programme developed to introduce concepts of medical leadership and quality improvement skills in the Belfast Trust. STEP started in 2013 and over 140 trainees have now participated in the programme.

Results Over 42 quality improvement projects have been completed with the support of the programme. Evaluation of STEP has demonstrated an improvement across all domains explored throughout the duration of the programme, with benefits for the individual trainee and the wider organisation.

Discussion We describe the programme in detail. The STEP curriculum can easily be adapted to meet the needs of NHS trainees, allowing them to understand the objectives and strategy of their employers and improve their ability to plan and deliver safe, effective, patient-centred care.

Keywords: Medical, Leadership, Quality Improvement, Education

INTRODUCTION

Medical engagement in healthcare organisations can improve service development and patient experience. Doctors in training have limited opportunities to engage in service improvement work and develop leadership skills.

We saw an opportunity to address this need with the primary goal of improving clinical engagement through teaching the foundations of modern medical leadership and introducing improvement methodology. Our secondary goal was to increase engagement with corporate management and business support colleagues through improvement projects. Our hope was that this would help our future medical leaders build a learning and supportive culture as highlighted in 'A promise to learn, a commitment to act'[1].

Belfast Trust is one of the largest NHS employers in the UK, employing 800 permanent members of medical staff and supporting approximately 600 doctors in training every year. The programme was introduced in 2013. Over 140 trainees have now participated in the **Specialist Trainees Engaged in Leadership Programme (STEP)**, ranging from ST3-8 from a variety of specialty backgrounds.

LEADERSHIP AND QUALITY IMPROVEMENT PROGRAMME DEVELOPMENT

The aim of STEP is to ensure that specialist trainees are aware of the opportunities to develop skills in medical leadership during their rotational clinical training. The STEP curriculum also offers basic training in QI, with the goal of each trainee becoming actively involved in a QI or patient safety initiative in their clinical area. The programme follows the academic year, commencing in September and ending in June.

The STEP curriculum was developed by a core group of clinicians, in conjunction with non-clinical managers and the team from Learning and Development department. The partnership between medical and managerial staff was essential in developing a relevant curriculum and encouraged the participation of managerial colleagues from a range of Directorates. The programme is also supported by the Medical Director and Directors of Specialist Services and Acute services providing senior management sponsorship.

Clinical Education Centre, Elliot Dynes, Royal Victoria Hospital, Belfast, BT12 6BA.

drgdonaghy@hotmail.com

Corresponding author: Dr Grainne Donaghy.

CURRICULUM DEVELOPMENT

The curriculum was based around the NHS Medical Leadership and Competency Framework[2]. Another key resource was the Institute for Healthcare Improvement (IHI) Open School [3], which all trainees were encouraged to access. The new NHS Leadership framework [4], published during the pilot year in 2013, also influenced the teaching. We recognised that many consultants are involved in service developments that require an awareness of project planning therefore we sought the support of the Trust Leadership and Innovation Academy team, who provided a bespoke session on Project Management.

A list of sessions currently included in STEP is shown in Table 1.

TABLE 1:

List of STEP sessions from 2015-6 Programme

Session
Introduction and Medical Leadership
Project Management for Beginners
Patient Safety & Quality Improvement (QI) Methodology
Overview of Trust and Patient Client Experience
High Performing Teams
Human Factors
Interview Preparation
Clinical Networks
Commissioning
STEP Project Workshop x 4
End of year presentations

STAFF INVOLVEMENT AND RESOURCES

Each session has at least two facilitators: one medical and one from a management background. This helps deliver a holistic view of how clinical teams work within the wider context of the organisation and interact at other levels, for example with commissioners, patient representatives and politicians.

Trainees are provided with reading material via email links to relevant articles and the IHI Open School material to prepare for each session. The facilitators provide an overview of each topic for approximately 30 minutes to open the session. The remainder of the time is spent in discussion and reflection on the trainees' own experiences, allowing them to identify opportunities for further development. Speakers are invited to deliver some more formal sessions. The trainees agreed that evenings provided the best opportunity for attendance. Each session lasts around 90mins, however some sessions required up to 120 minutes.

STEP-UP

Delivering a basic understanding of QI methodology is led by faculty members using material from IHI Open School and the Scottish Patient Safety Programme. Supporting reading material is also provided [1, 2, 4 - 25].

Trainees are offered the opportunity to take part in a QI or patient safety project. STEP programme facilitators offer suggestions and guidance on developing their project further, and experienced mentors provide guidance and support. There are several STEP-UP project workshops, where trainees deliver a short presentation followed by discussion on strategies to develop the project. A project presentation event is held at the end of the academic year in conjunction with the Trust Quality Forum. A panel including the Postgraduate Dean of Medicine, the Chief Medical Officer (NI) and the Clinical Director of the Health and Social Care Safety Forum provide feedback on the project presentations supported by the Medical Director and the Centre Director for the School of Medicine, Dentistry and Biomedical Sciences at QUB.

DEVELOPMENT OF STEP

STEP is now into its fourth year. The 2014/5 participant cohort completed an online survey to record their views on the programme and suggestions for improvement. Twenty-six trainees responded and indicated that the most beneficial aspects of STEP included:

- Quality Improvement (*how to drive a project forward, learning the vocabulary, learning from others' experience, motivated me to effect change within my organisation*)
- Teamwork and Networking (*breaking down barriers*)
- Interview Preparation and CV advice and planning

96% of respondents felt that STEP provided them with knowledge not available elsewhere in their training, and 100% said they would recommend STEP to a friend.

Following review of the feedback, three main themes were identified for improvement: adjusting the programme structure to improve its flow, changing the timing of the sessions and enhancing the supporting resources available. These changes were implemented for the 2015/6 programme and a STEP information guide was produced.

STEP EVALUATION

An evaluation of the 2015/6 programme was performed using a model based on Kirkpatrick's Four Level Model [26]. Questionnaires were developed to facilitate self-assessment of knowledge and skills pre- and post-participation. The post programme questionnaire also assessed the trainees' experience of the programme and its perceived benefits, as well as changes to their behaviours and results both for themselves and for the organisation. In addition, trainees were also asked to complete Level One and Two of the Quality 2020 'Attributes Competence Assessment Tool' [27].

STEP EVALUATION RESULTS

The response rate was 52% for the pre- and 40% for the post-programme questionnaire. 54% of trainees had no previous

leadership or QI training. Trainees came from training levels ST4 – ST8. Those who had had previous experience (46%), indicated this was quite varied e.g. one day leadership and management courses, modules as part of an MSc and online learning modules. Twenty-five percent of this cohort had no previous involvement in an improvement project.

PRE AND POST PROGRAMME QUESTIONNAIRES

Trainees were asked to rate their knowledge of a range of subject areas using a scale of 1-4, as detailed below.

1 No knowledge

2 Some knowledge

3 Good level of knowledge

4 Excellent level of knowledge and could teach others about this

All areas showed an improvement following participation in STEP. Figure 1.

Trainees were asked to score their response to the statements below using a scale of 1 - 5, ranging from 1 = 'strongly agree' and 5 = 'strongly disagree'. The mean score obtained from trainees for each statement is shown in Table 2 – with all statements scoring between agree (=2) and strongly agree (=1).

TABLE 2:

Mean trainee scores regarding their STEP experience

Statements	Mean Score
Overall, I was satisfied with the quality of STEP	1.4
Overall, I feel the trainers were knowledgeable	1.2
Overall, I feel the trainers were approachable	1.2
I learnt new knowledge and skills through STEP	1.4
I will apply the knowledge and skills learnt through STEP in my future practice	1.4
I feel STEP will play a substantial role in the improvement of the quality and safety of patient care	1.2
I feel STEP will play a substantial role in the improvement of the patient experience in our healthcare system	1.5
STEP was a worthwhile investment for my own professional development	1.4
STEP was a worthwhile investment for ... Trust	1.3

Some examples of comments from trainees regarding their experience of participating in STEP included:

- *"STEP has changed the way I think"*
- *"QI is vital to improve patient safety and team functioning"*
- *"Appreciate time to concentrate on non-medical side of training"*

QUALITY 2020 'ATTRIBUTES COMPETENCE ASSESSMENT TOOL'

The Northern Ireland Quality 2020 (Q2020) 'Attributes Competence Assessment Tool' [27] provides a tool for trainees to self-assess against the knowledge, skills and attitudes required at their current level in relation to quality improvement and safety.

Statements are rated with the following rating scale:

- LD – 'I need a lot of development'
- SD – 'I need some development'
- WD – 'I feel I am well developed'

The response rate was 52% for the pre-programme self-assessment. The post-programme completion rate, however, was disappointingly low at 14%.

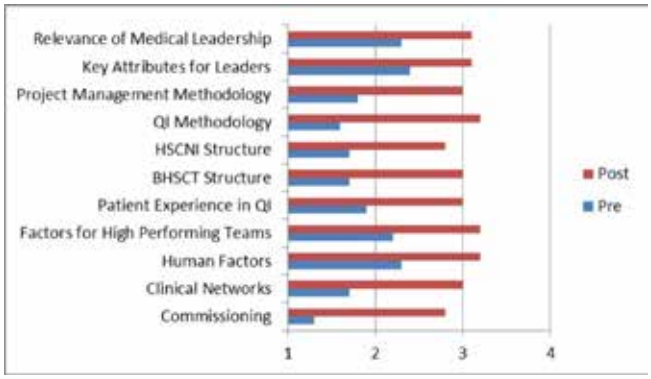

Fig 1. Graph showing mean respondent scores for pre- and post-programme self-assessment questionnaire.

An overview of the pre-STEP self assessments at Level One of the Attributes Tool revealed that 43% of respondents felt their skills in improvement methodology needed "*lots of development*". Following participation in STEP, 50% of respondents now felt that their skills in improvement methodology were well developed.

Prior to STEP, trainees reported a need for development in the following areas:

1. Improving care and services for patients/service users (86%)
2. Understanding quality improvement and collecting information to aid improvement in patient/service user care and services (76%)
3. Understanding the benefits of small steps to improve care and services (76%)
4. Understanding what contributes to the safety of patients/service users and working with colleagues to identify problems and reduce risk (71%)

All domains demonstrated improvement post participation

with 100% of respondents assessing themselves as well developed in the first 3 areas, and 67% as well developed in the fourth domain.

When self-assessing against Level Two of the Attributes Tool; 38% assessed themselves as needing a lot of development in the domain of explaining and using PDSA cycles to make small-step change to improve care and services, with 57% needing some development. This domain demonstrated an improvement post STEP, with 67% assessing themselves as well developed and only 33% needing some development.

Prior to STEP, some areas were marked as needing development:

1. Understanding how the culture in my workplace influences the quality and safety of care and services (81%)
2. Being able to work with a team to achieve small-step change (76%)
3. Identifying where teamwork can be more effective and I can work with others to improve team performance (76%)

All domains demonstrated an improvement post participation with 100% of respondents now assessing themselves as well developed in the first domain, 67% as well developed in the second and 50% as well developed in the third.

QUALITY IMPROVEMENT PROJECTS

Forty-two quality improvement projects have been formally presented by STEP trainees since the beginning. These projects have focused on improving the safety and quality of patient care or enhancing patient experience. Recent projects have included the development of a cognitive aid for emergency intubation, improving time to CT Scan for major trauma patients in the emergency department, improving the quality of clinical handover and improving thermoregulation in neonates.

DISCUSSION

Throughout the development of the STEP programme, we have seen benefits for the individual trainees and for the wider organisation.

As a healthcare provider, the Trust's aim is to improve patient and client experience through the delivery of safe, high quality care. Trainees rotate through the various hospitals in Northern Ireland and have many opportunities to see and share good practice.

On a personal level, trainees who participated in the programme have learnt how to effect change. They have built will for improvement in their clinical teams and beyond, networking effectively with managers and support teams in ICT and patient experience to deliver projects. This corporate sponsorship has allowed them to feel part of the wider organisation and develop a better understanding of strategic health priorities. To successfully develop and deliver their STEP-UP projects, they have developed skills in QI methodology, project planning and management that will be of future value. Several projects involved patient/client experience work. For many of the trainees, this was their first experience of this kind of engagement with patients and carers and resulted in a rethink of their approach, not only to their project, but also how they engage and interact with the patients they care for.

From the evaluation, we can see that trainees find STEP useful and worthwhile, and recognise the role it plays in improving the quality and safety of patient care. STEP has been shown to be effective in improving trainee skills and knowledge in the subject areas covered by the programme.

From a corporate perspective, STEP has yielded benefits in terms of the individual projects completed. There are other benefits emerging with the improved engagement of clinicians. It has allowed our organisation to look at issues obvious to those working at the 'coal face' and utilise the enthusiasm of a 'volunteer army' to help work within their clinical teams to find solutions and improvement ideas which, are more likely to be successful. This improved awareness of solutions generated by frontline staff fits well with the 'dual-operating system' model [14]. It allows any organisation to maximise the use of existing expertise to deliver the goals of improving quality of care and safety as well as improving efficiency. The flattened hierarchy experienced by trainees participating in the programme who are interacting regularly with members of the Trust senior team will develop both clinicians and managers' awareness of the benefits of a culture of engagement, respect and trust. The partnership approach of clinical and managerial colleagues is key to the successful delivery of the programme aims and completion of the quality and safety projects.

There are of course, risks in a programme that focusses solely on ideas generated by front-line teams. For success in the future, we need to ensure that the QI aspect of STEP is linked to Trust corporate improvement priorities and that appropriate resources are allocated to support STEP-UP projects. At present, we are developing improvement capability and capacity through various training programmes and stronger linkages with data management and information technology colleagues at a regional level. There are also opportunities to work directly with Northern Ireland-wide Quality Improvement collaboratives, organisations such as the Institute of Healthcare Improvement (via the Practicum programme), and through training such as that provided by the Scottish Quality and Safety Fellowship Programme.

Each NHS organisation will have their individual ethos and unique vision for the delivery of high quality, safe care. The STEP curriculum could be easily adapted to meet the needs of trainees in any NHS organisation, allowing them to better understand their employers and improve their ability to lead the future delivery of safe, effective, patient-centred care.

ACKNOWLEDGEMENTS

Dr I McDougall, Ms. Karen Hamill, Dr Gavin Lavery, Mrs. Mary Boyle, Dr David Robinson, Mr. Colin Jackson, Dr Maria O'Kane, Dr Olly Bannon, Dr Colm Watters, Dr Caroline Hawe, Mrs. Bernie McQuillan, Mr. Damien McAllister, Ms. Deirdre Donaghy, Ms. Kate Moore, Ms. Kerri McArdle, Dr Michael McBride.

None of the authors have any competing interests or funding to declare.

REFERENCES

1. National Advisory Group on the Safety of Patients in England. *A promise to learn - a commitment to act. Improving the safety of patients in England*. London: Williams Lea Group; 2013. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/226703/Berwick_Report.pdf. Last accessed February 2018 :
2. NHS Leadership Academy. *Clinical leadership competency framework*. Coventry: NHS Leadership Academy; 2011. Available from: http://www.leadershipacademy.nhs.uk/wp-content/uploads/2012/11/NHSLeadership-Leadership-Framework-Clinical-Leadership-Competency-Framework-CLCF.pdf Last accessed February 2018.
3. Institute for Healthcare Improvement (IHI). *Open School*. Boston, USA: Institute for Healthcare Improvement; 2018. Available from: http://www.ihi.org/education/ihiopenschool/Pages/default.aspx. Last accessed February 2018.
4. NHS Leadership Academy. *Healthcare Leadership Model - The nine dimensions of leadership behaviour - Version 1.0*. Coventry: NHS Leadership Academy; 2014 Available from: www.leadershipacademy.nhs.uk/discover/leadershipmodel. Last accessed February 2018.
5. Batalden P. Making improvement interventions happen - the work before the work: four leaders speak. *BMJ Qual Safe*. 2014;**23**(1): 4-7.
6. Berwick DM. The science of improvement. *JAMA*. 2008;**299**(10): 1182-4.
7. Botwinick L, Bisognano M, Haraden C. *Leadership Guide to Patient Safety - IHI Innovation Series white paper*. Cambridge, MA: Institute for Healthcare Improvement; 2006.
8. Carayon P, Xie A, Kianfar S. Human factors and ergonomics as a patient safety practice. *BMJ Qual Saf*. 2014;**2(3)**:196-205.
9. Chan S, Maurice AP, Pollard CW, Ayre SJ, Walters DL, Ward HE. Improving the efficiency of discharge summary completion by linking to preexisiting patient information databases. *BMJ Qual Improv Rep*. **2014 May 16;3(1).**
10. Compton J. *Transforming your care - a review of health and social care in Northern Ireland*. Belfast, Northern Ireland: Department of Health; 2011. Available from: www.dhsspsni.gov.uk/transforming-your-care-review-of-hsc-ni-final-report.pdf. Last accessed February 2018.
11. Department of Health, Social Services and Public Safety. *Quality 2020 - a 10-year quality strategy for healthcare in Northern Ireland*. Belfast: DHSSPS; 2011. Available from: https://www.health-ni.gov.uk/sites/default/files/publications/dhssps/q2020-strategy.pdf Last accessed February 2018.
12. Francis R, The Mid Staffordshire NHS Foundation Trust Public Inquiry. *Report of the Mid Staffordshire NHS Foundation Trust. Public Inquiry. Executive summary*. London: The Stationery Office; 2013. Available from: www.midstaffspublicinquiry.com/sites/default/files/report/Executive%20summary.pdf. Last accessed February 2018.
13. James G. 8 ways neuroscience can improve your presentations. New York: Inc Magazine; 2014. Available from: http://www.inc.com/geoffrey-james/8-ways-neuroscience-can-improve-your-presentations.html. Last accessed February 2018.
14. Kotter JP. *Accelerate*. Boston, MA: Harvard Business Review Press; 2014
15. Lemer C, Cheung CR, Klaber RE. An introduction to quality improvement in paediatrics and child health. *Arch Dis Child Educ Pract*. 2013; **98**(5): 175-80.
16. Lynn K, Baily M.A, Bottrell M, Jennings B, Levine RJ, Davidoff F, *et al*. The ethics of using quality improvement methods in health care. *Ann Int Med*. 2007;**146**(9): 666-73.
17. NHS Institute for Innovation and Improvement. *The handbook of quality and service improvement tools*. Coventry: NHS Institute for Innovation and Improvement; 2010. Available from: http://www.miltonkeynesccg.nhs.uk/resources/uploads/files/NHS%20III%20Handbook%20serviceimprove.pdf. Last accessed February 2018.
18. NHS Scotland, 2014-last update, NHS Scotland - Quality Improvement Hub. Available: http://www.qihub.scot.nhs.uk/home.aspx [19th August 2014].
19. NHS Scotland. Turas Learn: NHS Education for Scotland's platform for learning and support resources. Edinburgh: NHS Scotland; 2018. Available from: https://learn.nes.nhs.scot. Last accessed February 2018.
20. Oxtoby K. Are women breaking down barriers to leadership roles in medicine? *BMJ Careers*. 26th September 2013. Available from: careers.bmj.com/careers/advice/view-article.html?id=20014723. Last accessed February 2018.
21. Parry GJ, Carson-Stevens A, Luff DF, McPherson ME, Goldmann DA. Recommendations for evaluation of health care improvement initiatives. *Acad Pediatr*. 2013; **13**(6 Suppl): S23-30.
22. Spencer A, Ewing C, Cropper S. Making sense of strategic clinical networks. *Arch Dis Child*. 2013;98(11):843-5
23. SQUIRE Standards for Quality Improvement Reporting Excellence. *Quality improvement knowledge application tool*. California: SQUIRE; 2017. Available from: http://squire-statement.org/index.cfm?fuseaction=page.viewpage&pageid=509. Last accessed February 2018.
24. Swensen S, Pugh M, McMullan C, Kabcenell A. High-impact leadership: improve care, improve the health of populations, and reduce costs. *Institute for Healthcare Institute for Healthcare Improvement*. Cambridge, Massachusetts: 2013. Available from: http://www.ihi.org/resources/Pages/IHIWhitePapers/HighImpactLeadership.aspx. Last accessed February 2018.
25. TEDBlog *Insights from our office. 10 tips on how to make slides that communicate your idea*. San Diego, USA: TEDBlog; 2014. Available from: http://linkis.com/buff.ly/kRSgq. Last accessed February 2018.
26. Wilson DA. Leadership. *Three questions executives should ask front-line workers*. Boston: Harvard Business Review; 2014. Available from: https://hbr.org/2014/05/3-questions-executives-should-ask-front-line-workers. Last accessed February 2018.
27. Kirkpatrick D.L. *Evaluating training programs: the four levels*. San Francisco: Tata Mc Graw-Hill Education; 1975.
28. DHSSPS NI. Quality 2020. *Supporting leadership for quality improvement and safety. Attributes Competence Assessment Tool*. Belfast, Northern Ireland; 2014. Available from: https://www.health-ni.gov.uk/sites/default/files/publications/dhssps/Q2020%20Attributes%20Framework.pdf. Last accessed February 2018.