Education quality

Education quality for future doctors: a case study of the introduction of an Education Quality Dashboard (EQD) in a UK teaching hospital

Sue Carr[1], Joanne Kirtley[1], Liz Shaw[2], Janet Willars[2] and Carolyn Tarrant[2]

[1]University Hospitals of Leicester NHS Trust, Leicester Royal Infirmary, Leicester, UK
[2]Social Science Applied to Healthcare Improvement Research (SAPPHIRE), Department of Health Sciences, University of Leicester, Leicester, UK

SUMMARY

Background: The quality of postgraduate training environments vary, but measures of the quality of training environments are lacking. This case study describes the use of management principles combined with educational expertise to facilitate the development and evaluation of an Education Quality Dashboard (EQD) for monitoring the quality of training in a large UK NHS teaching hospital.

Methods: Evaluation was conducted through the inspection of data-reporting trends and interviews with key stakeholders. Fourteen key stakeholders took part in semi-structured interviews about their experiences of implementing the EQD. Data were analysed thematically using NVIVO 10.

Results: The introduction of the EQD drove improvements in completeness of data about education standards, and improvements in performance on key metrics. Interviewees suggested that the EQD was feasible to compile but required infrastructure for data collection to be established and maintained. The use of a dashboard format was seen as helping to raise the profile of education quality standards in the trust, particularly at the board level, although some limitations of the dashboard were noted. The EQD enabled proactive monitoring and managing of problems with the educational environment, and interviewees identified concrete improvements that had resulted from the use of the dashboard. Making the EQD work well required commitment and leadership from senior staff. Feeding back and acting on findings was seen as critical for continuing engagement.

Discussion: The dashboard is now embedded as part of routine practice across the hospital, and has the potential to be implemented nationally to help drive improvements in the quality of education provision.

The dashboard identified areas of weakness in the education environment within the hospital

External stakeholders recognised the use of the dashboard as a tool to drive quality and performance in education

INTRODUCTION

We report lessons learned from the development and use of a dashboard of education quality at the University Hospitals of Leicester over a period of 3 years. Ensuring the provision of high-quality medical education is critical to patient safety,[1] and to the experience of the future medical workforce.[2]

In the UK, over the last 6 years, there has been a 29% reduction in Foundation trainees progressing directly into higher training.[3] A recent Health Education England publication highlighted variation in the quality of training environments, and a lack of access to good training opportunities, as one of four main themes causing low morale in UK junior doctors.[4]

Lachish et al. reported that good institutional support for Foundation doctors was correlated with increased job satisfaction and a more positive attitude towards work.[2] To enhance institutional support and improve trainee experience, there is a need to ensure that education resources are effectively used to provide high-quality support and education.

Medical education is delivered in a complex clinical environment, and although tools have been developed to gauge student perceptions of the quality of the learning environment for research purposes,[5] there is currently a lack of management approaches available to monitor the quality of the clinical hospital training environment.

One method used for systematically documenting and monitoring quality in complex processes in health care is the 'quality dashboard'.[6] Dashboards have rarely been used in medical education in the UK: the sole example was a study focusing on metrics at deanery level, rather than representing the quality of the training environment at the level of individual training provider organisations.[7] Dashboards for education quality compiled at individual hospital level have potential value for monitoring and driving up the quality of the local education environment. We developed and implemented the Education Quality Dashboard (EQD) as a way of systematically characterising the use of education resources and the quality of learning environments across different specialities within a teaching hospital. We evaluated the implementation and impact of the EQD in improving the visibility of education and in driving improvement.

METHODS

Dashboard development

Seventeen metrics were selected for the dashboard, based on UK General Medical Council (GMC) standards for training (https://www.gmc-uk.org/education/standards-guidance-and-curricula/standards-and-outcomes/excellence-by-design), local policies, and discussion with education stakeholders (Figure 1). Some metrics were chosen to reflect compliance with established processes ('lagging issues'), and other metrics aimed to drive improvement ('leading issues').[8] Performance against the key metrics was presented using a visual Red Amber Green (RAG) system to identify areas for improvement.

The EQD was launched in 2014 in all three hospitals within the trust. The dashboard is updated every 6 months and presented to executive boards, departmental clinical management groups (CMGs), and the doctors in training committee twice a year. Educational quality leads (EQLs) were appointed at CMG level, with the responsibility for collecting and compiling dashboard data, and for reviewing and feeding back the RAG ratings to her or his CMG.

Dashboard evaluation

We evaluated the implementation of the dashboard to explore:

- effectiveness at promoting change;
- feasibility and acceptability;
- barriers and facilitators to the compilation and effective use of the dashboard.

The evaluation included an inspection of dashboard completeness, and evidence of changes on metrics, over a 3-year period to assess effectiveness. We also conducted a qualitative evaluation, involving semi-structured interviews with a purposive sample of 14 key stakeholders involved in producing and using the EQD. Stakeholders included directors and managers within the hospital with responsibility for clinical education, senior members of Health Education England working across East Midlands (HEEM), and medical education leads in CMGs in different specialties. Informed consent was obtained before interviews.

Interviews were conducted in September and October 2016 using a topic guide that explored experiences of compiling and using the dashboard, response to the dashboard, effectiveness and impact of the dashboard in terms of learning and change generated, and the factors perceived to be important in making it work. Interviews were conducted by telephone for convenience, and to enable flexibility in scheduling, and lasted from around 30 minutes to over an hour. Interviews were audiorecorded and transcribed verbatim; transcripts were anonymised during transcription. Data were analysed thematically using NVIVO 10 (QSR International, Melbourne, Australia). An initial

coding frame based on the interview guide was used to code the transcripts, along with the open coding of text to identify important issues that were unanticipated by the coding frame. Thematic data summaries were prepared and used as the basis of data interpretation.[9]

RESULTS

Dashboard completeness and metrics

Adequacy of data collation

There was an improvement in the overall completion of metrics from 70.1 to 93.6% between September 2014 and June 2017. Smaller CMGs and those with dedicated educational administrative support produced the most complete data sets. Introducing the EQD uncovered significant gaps in the recording of data relevant to education quality, and prompted efforts to improve the systematic and routine recording of data on key quality indicators.

Performance against key education metrics

The dashboard identified areas of weakness in the education environment within the hospital, including: the lack of visibility of education at CMG board level; low numbers of consultants with time in their job plan for education; the lack of junior doctor forums; the provision of local education resources; and the identification of education funding streams. The EQD dashboard facilitated the highlighting of these issues to CMGs and the trust executive team, and as a result there was focus on, and improvement in, the achievement of standards and performance in these areas. Over the period in which the dashboard has been in use at the trust, the number of metrics rated 'green' has increased by 20%, whereas the number of metrics rated 'amber' and 'red' reduced by 13 and 7%, respectively (Figure 1).

External stakeholders recognised the use of the dashboard as a tool to drive quality and performance in education. The GMC commented on the dashboard in their report of the East Midlands regional review (2016) available at www.gmc-uk.org.

Qualitative findings

The dashboard was seen by interviewees as feasible to compile and update on a 6-monthly basis. Achieving this was dependent on identifying an EQL for each CMG and protecting their time for this role (Table 1, a); developing systems and infrastructure for collecting and compiling data; and the investment of time by the core education team of the trust. Having systems in place for data validation

The dashboard format helped to engage managers and executives in thinking about education quality, as the format was a familiar one

Requirement	1	2		3	4	5	6			7	
1st Dashboard 2014		2A	2B				6A	6B	6C	7A	7B
Safe Learning Environment											
Trainees with an identified Clinical Supervisor (%)											
Trainee attendance at Departmental induction (%)											
Formal, timetabled handover process before & after nights			N/A								
Trainees completed trust mandatory training (%)											
Governance and Quality											
Medical education lead in the CMG											
Overall trainee satisfaction											
Education issues are integrated into CMG governance processes											
Medical workforce plan in place											
Support and development of trainees											
Junior doctor forum & representative on DiTC											
% Foundation trainees able to attend > 70% of education sessions		N/A									
% Core/Higher trainees able to attend > 70% teaching sessions,											
Core/Higher trainees have timetabled access to theatre lists/out-patient clnics		N/A									
Trainees supported to access study leave											
Trainer/Mentor Support											
Clinical Supervisors trained for role (%)											
Consultants educational roles embedded within job plans (%)											
Education Facilities											
Trainees and trainers have access local educational resources											
Funding Streams											
Educational funding streams identified within the CMG											

Requirement	1	2		3	4	5	6			7	
Dashboard February 2017		2A	2B				6A	6B	6C	7A	&B
Safe Learning Environment											
Trainees with an identified Clinical Supervisor (%)											
Trainee attendance at Departmental induction (%)											
Formal, timetabled handover process before & after Nights			N/A								
Trainees completed Trust mandatory training (%)											
Governance and Quality											
Medical Education Lead in the CMG											
Overall trainee satisfaction											
Education issues are integrated into CMG governance processes											
Medical workforce plan in plan											
Support and development of trainees											
Junior doctor forum & representative on DiTC											
Foundation trainees can attend > 70% of education sessions											
Core /Higher level trainees can attend > 70% teaching sessions											
Core/Higher level trainees have timetabled access to required theatre lists/clnics		N/A									
Trainees supported to access study leave											
Trainer/Mentor Support											
Clinical Supervisors trained for role (%)											
Consultants educational roles embedded within job plans (%)											
Education Facilities											
Trainees & Trainers have access local educational resources											
Funding Streams											
Educational funding streams identified within the CMG											

Figure 1. Education Quality Dashboard (EQD) domains and key performance metrics. Data are shown for September 2014 and February 2017. The clinical management groups (CMGs) are shown as 1–7. Large CMGs are divided further into departments: e.g. CMG 7 comprises two large departments (7A & 7B). Metrics completed using national survey data or completed by the Department of Clinical Education are marked with an astreisk*. Other metrics were completed by CMG education leads. DiTC, Doctors in Training Committee. Performance against the key metrics is presented using a visual Red Amber Green (RAG) system: green, yes or >85%; amber, 50–85%; red, no or <50%; white, no evidence or information was submitted; blue, not applicable to the clinical service (i.e. there are no Foundation doctors)

Stakeholders provided examples of how the EDQ had enabled problems relating to education quality standards to be identified

Table 1. Interview quotes

	Quote (participant identification number)
a	In the departments where we didn't have [EQLs] in place, then we didn't get any data for the dashboard because they just didn't submit any returns … What we need is someone who pulls together the data, populates that dashboard. **Interviewee 05**
b	Sometimes you wouldn't get the best representation on the dashboard, if say you did it in August when the trainees have just arrived, because for example the foundation trainees, you wouldn't be able to fill in what their attendance was. **Interviewee 04**
c	As soon as you produce a dashboard … they're scurrying to look at it, just because I think that's the way that the management team works … in other areas, in areas like infection control, in areas like appraisal, everything is now done on a dashboard. **Interviewee 13**
d	It gives them something, gives them something concrete to take into a board and say this is what we're being judged on … this is why we need the resource. **Interviewee 05**
e	For each of those particular fields you probably need, or each CMG will need its own dashboard of identifying what lies behind each particular area … because there's about six or seven services within my CMG alone, so three of them can be doing really well, and the problem might just lie with another three, but you need to know where, which bits you need to target. **Interviewee 07**
f	Trouble is for me unless you know the detail underneath it, it just raises more questions because it's just a flat Dashboard isn't it, all it is is a RAG rating … What it's missing is the narrative: … 'this is what we're doing to address' or 'this is the direction of travel' **Interviewee 09**
g	I have used it, and it has been extremely useful … we've got the GMC visit coming up, it's enabled us to target services where there's been an issue … and perhaps more importantly to come up with … an action plan for how to amend things and make things better. **Interviewee 07**
h	Infection prevention, equality and diversity, antibiotic [training] which we're all required to do [scored] really, really low with junior doctors … So what they've now done is they've come together and have created like a passport … so if they move from one trust to another they will not have to repeat the training … [This was addressed] because we kept on getting a red on it [on the dashboard]. **Interviewee 02**
i	It's used between the education leads to compare sort of good practice and help each other and share things … There's a policy that was created by [name] CMG, for mandatory training, was then shared with the others, so that they could adapt it. **Interviewee 04**
j	The only resistance is the usual one of just time and competing priorities … So I think it's not so much engaging with the dashboard, it's about finding the time to engage with the issues that the dashboard is talking about. **Interviewee 03**
k	It also has to be taken seriously by the senior management. If you don't have buy-in from the senior management then you might as well not bother. So it depends on having a board that is actually interested. **Interviewee 05**
l	The people in the CMGs have to be on board so, you know, the CMGs have to own the data I think, you know, they have to own it, see it as theirs and be willing to manage it. **Interviewee 01**
m	When there are concerns raised, I [EQL] don't know to what extent it is going to be handled and looked into … It has to be a two-way process, where if there are problems … I think there should be some support to address it. **Interviewee 14**

CMG, clinical management group; RAG, red, amber, green.

was also seen as critical, as was the timing of data collection to avoid junior doctor rotation periods (Table 1, b).

The dashboard format helped to engage managers and executives in thinking about education quality, as the format was a familiar one (Table 1, c). By making visible the quality of education provision, and areas of strength and weaknesses, it helped to raise the profile of education quality across the hospital and provided evidence to support arguments for the investment of resources in education (Table 1, d). Interviewees also described some limitations of the dashboard format, in that it could mask variation at a more fine-grained level of service, and did not provide the narratives behind the RAG rating, including how to improve on poor ratings (Table 1, e, f).

Overall, stakeholders perceived the EQD to be an effective

Box 1. Recommendations for the implementation of the Education Quality Dashboard (EQD)

- Identify an education quality lead (EQL) for each department and ensure protected time for compiling the data and acting on findings
- Ensure leadership for the EQD work from members of the core education team
- Work closely with EQLs to foster a sense of ownership and active engagement with the dashboard
- Plan the timing of data collection to maximise completeness and usefulness
- Have systems for data validation
- Ensure that the dashboard is on the agenda at board meetings
- Have systems in place for acting on findings, and communicating about actions across levels of the organisation (including publicly sharing evidence of action and improvements in the education environment)
- Ensure that opportunities to maximise on the value of the EQD are taken up (e.g. to provide evidence of quality as part of external inspections)
- Review and change key metrics to continue to drive performance

tool for enabling continuing, proactive, monitoring of local problems with education provision, and in preparing for external inspections, such as GMC visits (Table 1, g). Stakeholders provided examples of how the EDQ had enabled problems relating to education quality standards to be identified and dealt with in a timely manner (Table 1, h, i). Challenges faced in implementing the dashboard primarily related to difficulties in maintaining CMG engagement, and the extent to which lack of time, and conflicting priorities, compromised people's ability to act on the issues flagged up by the dashboard (Table 1, j).

Making the EQD work well to drive improvement required commitment and leadership from senior staff within the hospital (Table 1, k), and continuing work by the central education team to engage with the CMG leads and to cultivate a sense of ownership (Table 1, l). It also required an infrastructure for feeding back findings and communicating across levels of the organisation about actions to be taken in response to the findings (Table 1, m).

DISCUSSION

This study, involving interviews with stakeholders involved in designing, compiling and using the EQD, highlighted the value of a dashboard approach for systematically documenting, monitoring, and improving the quality of education and the training environment. The study is limited in that it was conducted in a single trust; however, we interviewed a purposive, diverse sample of stakeholders involved in designing, compiling, and using the dashboard in a range of capacities, and used systematic analysis methods.

Overall, the EQD was seen as an effective tool by interviewees. It facilitated the presentation of education quality outcomes to senior management in a way that was meaningful and gave them status, alongside other hospital safety and clinical indicators. Thus the EQD helped to raise the profile of education, and to recruit the support of senior members of the board in tackling problems with education delivery. Stakeholders were able to identify a number of concrete ways in which the EQD had facilitated improvements in the education and training environment within the trust. The limitations of dashboards should be recognised, in that they provide just a snapshot of practice rather than trends over time; also, RAG ratings may obscure important detail. Dashboards can be misleading, and an understanding of the context behind the RAG rating is often critical.[10] There is a need to keep the metrics included in the dashboard under review, and to change key metrics as required in order to continue to drive performance. With these issues acknowledged, the EQD has the potential to be implemented nationally to help drive improvements in the quality of education provision across the sector. Key lessons for implementation of the dashboard are detailed in Box 1.

Challenges faced in implementing the dashboard primarily related to difficulties in maintaining CMG engagement

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Making the EQD work well to drive improvement required commitment and leadership from senior staff within the hospital

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Corresponding author's contact details: Carolyn Tarrant, SAPPHIRE, Department of Health Sciences, University of Leicester, George Davies Centre, University Road, Leicester, LE1 7RH, UK. E-mail: ccp3@le.ac.uk

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