

Evaluation of an Education Quality Dashboard (EQD) in a UK Teaching Hospital

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Table of Contents

Summary	3
Background	4
Methods.....	5
Dashboard development and piloting	5
Qualitative evaluation.....	5
Results.....	6
Dashboard development and piloting	6
Findings from qualitative evaluation	6
Discussion.....	18
Strengths and limitations.....	20
Conclusions	20
References	20
Appendix 1: Topic guide.....	22
Figures.....	24

Summary

To ensure a safe and effective learning environment, healthcare organisations are required to demonstrate compliance with quality standards for education. Currently there is a lack of tools for systematically assessing training environments. This qualitative study evaluated the use of an Education Quality Dashboard (EQD) to monitor education and training quality for junior doctors in a large UK NHS teaching hospital.

Metrics for the EQD were selected based on GMC standards for training, local policies and in discussion with education stakeholders. The EQD was piloted in 7 clinical management groups (CMGs) and then implemented on an ongoing basis. Education Quality Leads (EQLs) in 6 of the 7 CMGs were appointed and given responsibility for collecting and reviewing the dashboard data.

In September and October 2016 semi-structured telephone interviews were conducted with 14 stakeholders involved in producing and using the EQD. Data was analysed thematically using a combination of deductive and inductive coding, with the aid of NVivo 10.

The findings of the study highlighted the way the EQD was used in practice and the value and impact of the EQD. The EQD has helped to collate education quality data, highlighted important variations in practice and education quality between departments, raised awareness of educational issues and helped to drive some improvements in education.

The qualitative findings also provided insight into the challenges of using a dashboard in assessing the quality of the education environment, and into how this approach could be optimised for future use.

Key challenges:

- Choosing and agreeing on the right metrics
- Data could be inaccessible and/or not already systematically collected
- Commitment to data collection varied across the CMGs
- Staff did not always prioritise measurement over other tasks
- Junior doctor rotations made it difficult to keep up-to-date records

What makes it work:

- Identifying and funding an Education Quality Lead for each CMG
- Using a familiar format for reporting results (e.g. RAG rating) that is quick and easy to interpret
- Getting the timing of data collection right to maximise completeness and usefulness
- Data validation to ensure the RAG rating is based on data and not on assumptions & perceptions
- Fostering a sense of ownership and active engagement with the dashboard at all levels

Background

Recent national reports have highlighted the importance of ensuring quality in education and training. The Francis Report stressed “the importance of maintaining a ‘training culture’, providing environments where there is due focus and concern regarding patient safety”, and that training organisations should be “more open in their self-assessment regarding training issues”.¹

GMC monitoring is the main assurance mechanism for training quality, and it is the responsibility of Medical Schools, Local Education Providers (LEPs), and Local Education Training Boards to ensure they meet GMC standards for medical education and training.² Hospitals are required to demonstrate they provide a safe and effective learning environment through monitoring and evidencing the quality of their education provision and environment.

Currently there is a lack of tools for systematically assessing the training environment that could be used by providers as the basis of ongoing monitoring and improvement efforts. One method used to measure quality in complex processes in business and latterly healthcare is the ‘quality dashboard’ approach. Dashboards are becoming increasingly popular in driving improvement in healthcare,³ with examples such as the maternity dashboard: recommended for national use in the UK by the Royal College of Obstetricians and Gynaecologists and widely implemented,⁴ although with some challenges including the lack of consensus on standard indicators, concerns about the time taken to compile a dashboard, and uncertainties about thresholds for alerting.⁵ There is increasing interest in using dashboards and metrics to improve quality performance in education, but the extrapolation of dashboards for quality control of education and training in medical education is limited. A review of the literature identified just one example of the use of a dashboard in medical education in the UK: a quality dashboard developed to compare generic metrics from local education providers (LEPs) at deanery level, to improve LEP accountability, as well as to provide information for improving performance and quality control.⁶ Dashboards have not, however, been used for measuring and driving the quality of medical education delivered at a teaching hospital or provider trust level.

An Education Quality Dashboard (EQD) was developed at University Hospitals Leicester (UHL), a large UK NHS teaching hospital with 700 doctors in training and 200 students. The dashboard was designed with the aim of driving improvements in medical education whilst monitoring the quality control, learning environment, and training culture within the organisation. As a Local Education Provider, the Trust is accountable for the quality of education provision internally to the Trust Board, and externally to several organisations including Health Education England working across East Midlands, University of Leicester Medical School, and the GMC.

Metrics for the dashboard were selected based on GMC standards for training, local policies and discussion with education stakeholders. Metrics were chosen based on the following principles:

1. In line with the overall vision and strategic goal of the organisation, and reflecting external monitoring processes;
2. Drawn from national guidelines for education quality, and local policies;
3. Include leading and lagging indicators;⁷
4. Measurable through current processes, amenable to change, and relevant to the staff involved.

The principles for design and use of the dashboard included a focus on improvement without ‘finger pointing’ and a focus on using the dashboard as a way of improving working conditions and valuing staff rather than to attribute blame to individuals. The dashboard represents metrics as percentage (%) completed, and uses a Red Amber Green (RAG) system to flag areas for improvement. Scoring

this way enables a visual guide to which areas require urgent attention, and which departments were performing well. The dashboard is compiled and presented at the Clinical Management Group (CMG) level. CMGs are management groups that sit below the level of executive boards of directors, and bring together groups of allied specialties e.g. renal, respiratory and cardiac.

We report findings from the piloting and qualitative evaluation of the dashboard.

Methods

Dashboard development and piloting

Dashboard development and piloting was led by a small education team within the trust, which included the trust director for education. In developing the dashboard, an initial set of 23 metrics were identified across 6 domains; this was reduced to 17 following initial testing and discussion with stakeholders (Figure 1)

The EQD was rolled out to 7 Clinical Management Groups (CMGs) during a pilot period from July 2014 to March 2015, during which data was compiled and updated with a view to reporting progress and results from the dashboard to the Trust Board in June 2015. Educational Quality Leads were appointed for six of 7 CMGs at the start of the pilot, with responsibility for collecting and reviewing dashboard data. The CMG Education leads were asked to work with the Education Quality Manager to complete the dashboard, and the first iteration of the completed dashboard was shared with the CMG and Executive Boards for their review and feedback. Following positive feedback from piloting, the EQD was implemented on an ongoing basis following piloting.

Completeness of dashboard data was assessed during piloting, and monitored during subsequent implementation.

Qualitative evaluation

Semi-structured telephone interviews were conducted with key stakeholders involved in producing and using the EQD, to explore how the EQD is used, its perceived value and impact on the quality of the education environment, and how to optimise its use (topic guide, appendix 1). A purposive sample of stakeholders was identified to include Directors and managers within the trust with responsibility for clinical education, senior members of the Local Education Training Board (LETB), and medical education leads in Clinical Management Groups (CMGs) across different specialties within the trust. Potential participants were approached via email from the Associate Medical Director inviting the individual to contact the study researcher for more information if they were potentially interested in participating. Fully informed consent was ensured, and all participants provided a signed consent form before interview.

Interviews were conducted in September and October 2016. Data was audio recorded and transcribed verbatim; transcripts were anonymised during transcription. Data was analysed thematically⁸ using a combination of deductive and inductive coding, with the aid of NVivo 10 for analysis. An initial coding frame based on the interview guide was used to code the transcripts, along with open coding of text to identify important issues that were unanticipated by the coding frame. The coding frame was used to code transcripts. Thematic data summaries were prepared from the coded data and used as the basis of data interpretation.

Results

Dashboard development and piloting

At baseline, five of 7 CMGs entered data for all dashboard metrics but the overall completion rate was low ranging from 7% available data for “education roles identified in job plans” to 57% completion for “trainees with identified clinical supervisor”. This lack of completeness meant it was difficult for CMGs, and the trust, to see whether these quality indicators were being met.

Initially, there was considerable variation data completion by different CMGs. One CMG had no EQL and engagement with the dashboard was poor. Data completeness, and access to data, were higher for smaller CMGs, those with dedicated educational administrative support and where the lead had a complimentary educational role such as College Tutor. The EQM needed to provide training for EQLs and it was essential to have regular EQL meetings to support this new group.

By the end of the pilot there was a significant improvement in data completion (Figure 2), with 87% completion of metrics across all 7 CMGs (1 CMG had not appointed an EQL, and if this CMG was excluded from analysis the completion rate would be 96%). During the pilot, there were also significant improvements in achievement of standards. At baseline, statutory and mandatory training compliance was low (21%), as was the identification of education and training funding streams within CMGs (0%). However, the dashboard facilitated the highlighting of these issues to CMGs and the Executive Team. As a result data completeness on these issues has improved through improved recording, and CMGs have focused on improving the achievement of standards in these areas. CMGs have been prompted to address compliance with statutory and mandatory training, and with recording of education income streams in CMG budgets. The trust dashboard with RAG ratings, showing data for March 2017, is presented as figure 3.

The dashboard has collated useful data to report to external stakeholders and to inform the quality visiting processes. Health Education East Midlands (HEEM) recognised the appointment of CMG Education Leads and the use of the dashboard as a tool to drive quality and performance in education within the hospital in their Outcomes Report.⁹

Findings from qualitative evaluation

Interviews were conducted with 14 stakeholders, including eight individuals in trust-level executive roles or director/senior manager roles related to clinical education, and six CMG Clinical Education Leads / Directors.

The findings of the qualitative study highlighted the way the EQD was used in practice and the value and impact of the EQD. The qualitative findings also provided insight into the challenges of using a dashboard in assessing the quality of the education environment, and into how this approach could be optimised for future use.

How is the EQD compiled and used in practice?

Aspirations for the dashboard and intended use

A key aim in developing the dashboard was to produce a tool that could be used to present education quality outcomes to senior management in ways that would make them meaningful and give them status alongside other clinical indicators, to raise the profile of education, and to recruit the support of senior members of the board in tackling problems with education delivery.

I realised that I needed to develop a way to sort of look at the education quality outcomes in a way that people who manage other issues in the trust would understand and relate to, because I soon began to realise that there was a bit of

a [...] language barrier between me trying to describe the education issues and the senior management in the trust not really understanding those issues or being able to think about them in the same way as they did [...] operation waiting list targets. (IV01)

Having a dashboard that was regularly updated was seen as enabling proactive monitoring of problems with education quality by the trust. This meant that the trust would not have to rely on external monitoring to flag up internal problems, but could identify and deal with problems in a timely manner, hold departments to account, and assure the quality of their own education provision.

One of the things that sort of is part of that quality is the dashboard, so it's our own internal measure. [...] when we have the visits by the [LETB], or we have the GMC survey [...] we're on the receiving end of information, and people come along and say "did you know you've got a problem in that service, and this is the problem." And we felt as though we should actually know what our own problems are, before somebody from outside tells us. (IV04)

I think it is valuable, you do need something that holds the departments to account. And the problem with the way the visiting system works is that you only hold departments to account on a sporadic snapshot basis. So for example you're a clinical department, you get visited every two or three years by [LETB]. In between there [was] actually nothing that just acts as a baseline quality indicator, which shows you where you're slipping. (IV05)

Choice of indicators

Key design decisions in developing the dashboard revolved around choice of metrics. The education team, which led the development of the dashboard, recognised the delicate balance between including a full range of meaningful and representative indicators, and the need to avoid an excessive burden in terms of collecting and compiling data. The team also recognised that if the dashboard was too detailed this could impact negatively on engagement.

What you could have done is you could have had an extensive list of indicators based on the GMC domains, but what you'd end up doing is just having nil returns, because people would look at it and go you must be joking, I'm not spending [all that time on it]. So it needs to be quick, so we deliberately, [...] aligned the indicators to the most significant and important things that related to the questions that were asked in the GMC National Training Survey [...] we tried to keep it slim, and we tried to keep it kind of effective. (IV05)

The challenge with the dashboard is getting, we found, is getting the level of detail right. If it's too high level you lose the detail and it just becomes amber, and if you go too much into the detail then the trust board aren't that interested. (IV04)

The choice of indicators involved a deliberate strategy to try to get things on the agenda to push forward the quality of education delivery, as well as measuring core metrics.

So we didn't want to just have the requirements, which were have they done their training, have they been to induction, we also wanted to [...] put things on people's agenda. (IV04)

How is the data collected and compiled?

The operations manager in the education department is tasked with producing an updated dashboard twice a year. Some elements of the dashboard can be updated from centrally-accessed data e.g. from the GMC annual trainee survey, from local surveys of trainees, or from data held by the education department such as percentage of trainees attending classes; accessing this data can involve liaison with other stakeholders e.g. administrators of training programmes. Data for other indicators is input at CMG level. The trust has consultants in each of the CMGs who have been appointed with explicit responsibility for education, and these individuals are given the responsibility of completing some of the indicators for the dashboard. The education department operations manager first collates the central data and then the dashboard goes out to the CMG education leads to add their data. CMG leads are asked to provide a colour rating for indicators for which they hold data or information, with evidence to back up their rating. The dashboard is reported at the level of CMG.

How is the dashboard used in practice?

The dashboard is used in practice in a variety of ways. The Medical Education lead at the trust uses the dashboard to monitor and review education quality, in conjunction with the trust director of safety and risk.

[Trust director of risk and safety] and I [medical education lead] meet up on a regular basis and we go through what we have. And the sort of stuff we'd look at is what feedback we're getting from, training programme directors, the GMC survey, the [LETB] survey and [the trust]'s own survey see what matches up, what are the areas of good practice, what are the, where we can improve. (IV02)

The dashboard is presented to the Trust Board & Executive Workforce Board quarterly and it has recently been agreed it will go to the Executive Quality or Performance Board. The Associate Director of Medical Education describes its value for displaying to the trust board how they are meeting GMC standards, to show what needs to improve and to negotiate for resources to improve education quality.

I use it to show the members of the board who are not necessarily involved in medical education, to show them where we are in terms of meeting the GMC standards and [...] what we need to improve on, what the problems are with resources. (IV01)

The dashboard was designed to be used for monitoring and improvement of education quality not only at trust level, but perhaps more importantly, at the level of CMG. Education is a standing item on CMG agendas, with CMG education leads presenting the dashboard at management meetings, keeping education on the agenda and promoting local improvement.

The dashboard goes in to the CMG board, it's part of an agenda item, and then we look at the individual issues and then we have a discussion as to what needs to be done (IV02)

Although the dashboard was designed to drive improvement internally, it also acts as a way of providing objective evidence of education quality for external assessors including the LETB and the GMC.

It's a good tool we can use if we have some external visits from the GMC to show what we're doing (IV11)

You know when we get visits from [Health Education East Midlands], we show the dashboard as well [...], when [Health Education East Midlands] visit, they've asked the questions [...] we would show, show them that in the dashboard. (IV06)

What is the value & impact of a dashboard approach?

Value of a dashboard

The dashboard was seen as having been useful in challenging assumptions that all is well in education delivery in the trust, and shining a light onto areas where problems exist.

There was a feeling that well we are a large teaching hospital, and if we are a large teaching hospital and a university hospital, we must be doing it well. With this [EQD] now, we know we are not doing it that well. We're doing it very well in certain areas, we're not doing so well in other areas, and it just sharpens the mind, sharpens the focus. (IV02)

An important additional benefit was seen to be the identification of areas of good practice (not only areas of concern), and promoting the sharing of good practice. A specific example of this was the identification of good practice around mandatory training and the sharing of local policy with others across the trust.

We have CMG education leads meetings, in fact we had one last Friday, and we sort of just meet up and then look at what each of the CMGs have produced and where we can share good practice. I mean I think that's the strongest thing. (IV02)

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 the, emergency and specialist medicine CMG, for mandatory training, was then shared with the others, so that they could adapt it. (IV04)

Several interviewees argued that the design of a dashboard, with the red, amber and green boxes to indicate performance across the trust, had a more immediate impact than a traditional narrative approach to reporting quality in education. Dashboards were seen as a familiar and well-understood approach to reporting across a range of other types of performance indicators, so people could easily understand and digest the education quality dashboard using familiar frames of reference. Interviewees felt that staff in management roles, particularly members of CMG management boards, were much more likely to engage with a dashboard than other mechanisms for reporting quality and to be motivated to act on 'red lights'. The comparative nature of the data which set performance of each specialty against others was seen as particularly valuable at CMG level to highlight where the specialty was performing better or worse than others. The education quality leads particularly welcomed the ability to compare their department with others from different clinical areas.

It just concentrates the mind [...] like all dashboards do. Because otherwise you're just into narrative types of report, and often it's, you know, it doesn't quite get across the point as well as something like this does. [...] What it does do is get the conversation started. So, so you know, if you're seeing a lot of red lights you're going to be sitting down with the CMG teams saying what's going on here. (IV03)

Certainly at CMG level, I feel that if I write a Word document report, I can see that other people around the table at the board are looking at it, but not particularly engaged. 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. (IV13)

The dashboard was seen as strengthening the position of the educational leads by giving them a tool to back up their arguments about the need to focus on education quality.

I think if you put people into a role [...] where they're trying to influence other people, it's useful to give them a tool [...] because 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. [...] It strengthened the position of the education leads. (IV05)

How has the EQD impacted on the quality of education practice and environment in the trust?

Interview data suggested that the introduction of the dashboard had increased the engagement of the executive board, and CMGs, with the issue of quality in education by making problems visible – and in particular, making visible where GMC standards or funder expectations were not being met. This could act to draw attention on the link between education funding and quality, and focus efforts and resources to addressing areas in which education quality was not up to standard.

I can take it to the management [...] I can say look, you can't ignore this [...] we're getting paid for this. Medical education is not free [...] we get tariff from the university, we get tariff from [LETB] for postgraduate, and we I think have to show that we're doing or delivering what we're getting paid for. (IV02)

The central medical education team at the trust described how they had worked with CMG leads to ensure that education quality was an important part of CMG and trust business, and through this the dashboard was seen as having helped to raise the profile of education and education quality within CMGs.

It was just a way of looking at [GMC] domains [...] that would be used as evidence. It has proved to be, I have to say, a pretty useful thing, because from my point of view, if something is orange or red then [...] it gives us some ammunition to say [to the CMG board] "look, this is what we've found, this is what we've undertaken to deliver [...] and this is where we are falling down". [...] For our CMG, overall it has been very very positive [...] they have taken it on board. (IV02)

For CMGs, having a way to report information about performance up to the executive board was seen as positive; the dashboard enabled CMGs to make evident to senior management when they were struggling with issues around education provisions in particular specialties, as a way of drawing attention to the need for senior support and resources to deal with a problem.

I know in [specialty] they've got some problems at the moment [X] [...] they want to highlight, if the executive board look at [the EQD], that there are some issues in that CMG (IV04)

Interviewees recognised that there would always be competing priorities for improvement, but saw the dashboard as helping in setting priorities for action.

There are a lot of areas in performance, not just teaching and education, but things like managing our waiting lists and stuff, that we don't necessarily do particularly well on [...] so the dashboard itself doesn't necessarily drive the

performance. It's a bit like having an old car, there's lots of things that need fixing on it [...] you cannot necessarily fix or afford to fix everything at once. But in terms of prioritising it, in terms of benchmarking where you are compared to other CMGs [...] it's useful in that respect. (IV07)

Interviewees described how the dashboard has enabled them to target services in advance of the GMC visit, and come up with an action plan for improvement.

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. (IV07)

Examples of specific impact of the dashboard

There were a number of examples of specific issues identified as a result of compiling and reviewing the dashboard, and the corresponding actions taken. These are listed below:

- A focus on, and improvement in, workforce plans across the trust

At the time we set the dashboard up very few areas had got [workforce plans] on their agenda, so we put that in as a way of driving that through [...] So the workforce plans, what you can see there is there are still three reds [...] but [specialty names] set up a workforce group, and they meet [...] regularly to discuss all sorts of workforce plans. And so they were green before a lot of other people. (IV04)

- The dashboard data identified problems with transparency about educational funding and how it was used: this helped raise local awareness of funding and how this was linked to education, and improved transparency

We get a, dedicated money that comes through the system [...] designed to help us deliver medical education as well as other professional training. And one of the big issues is how transparent is that use of money. [...] That's one of the questions on the dashboard [...] 'are educational funding streams identified within the CMG', and [...] in some cases the answer has been no, and that has been pursued. (IV03)

One of the big things that we showed that we were performing poorly, I think we were one of the worst performing CMGs in terms of having a large amount of money in, but [not] having evidence that we were spending the money on what we should be spending the money on. So we've, I've managed to engage the head of operations and the CMG medical lead and finance director [...] [get] managerial assistance support to help look at that. (IV13)

- The dashboard indicated a need for people to have session allocation within their job plans for training and teaching across the trust, and efforts have been made to address this issue, although at the time of interviews there were still seen to be inequalities in this across the trust.

[Education lead] did a big piece of work making sure that we had the educational roles assigned within the consultants' job plans [...] and that was triggered by this dashboard essentially. (IV07)

And another thing that we constantly discuss in all these meetings is about allocated PAs for educational roles in [.....] for the supervisors [...] It is not really sort of fairly distributed, so some people, in some CMGs it is seen, it has been looked into carefully and it has been put in place, but not every CMG. (IV14)

- One CMG member described how their CMG had responded to dashboard data showing that the levels of training for postgraduate supervisors was relatively low compared to the rest of the trust; the dashboard data highlighted this problem to them and motivated action.

The main change that's happened within our CMG is we've gone from a very low, a very unsatisfactory number of consultants who are trained for their role as a postgraduate educational supervisor, or clinical supervisor, to now a very high level [...] I think the dashboard has been useful in that [...] we've been able to send around to show that we were doing worse than the other CMGs, and I think [people] don't like that. (IV13)

- Dashboard indicators highlighted problems with induction and completion of mandatory training of trainees in certain areas; this was addressed through improved induction, and the development of e-induction in which trainees are issued with a passport on completion, which means they don't have to repeat all of the induction when they move trusts.

There were areas where the induction wasn't as good as it should have been, and we were able to target that. [...] Certainly I think the area that's probably where it's improved most has been the quality of departmental induction So things like that, it's really useful for. (IV05)

- Library facilities have been improved at the trust as part of an on-going programme of improvement; while the drive to improve education facilities did not come directly from the dashboard, the dashboard flagged this up as a problem. The improvements were reflected in improved dashboard scores, acting as an indicator that the problem had been addressed.

Some of our educational resources were very low [...] Since we've done some work around that that has gone from red to green [...] Educational resources within [hospital] always showed as a red because we didn't have very good library...but since we've opened [library] at [hospital].it has shown a change [...], and I think people can see the good work they've done. (IV06)

Unintended consequences

During piloting of the dashboard, data completeness was a significant problem; this may have been partly down to lack of engagement within CMGs, but also, significantly, reflected the lack of systematic recording of information for some of the selected dashboard indicators. An unintended consequence of the introduction of the dashboard was to draw attention to the need to improve data recording and procedures for data capture.

One example of that would be the percentage of the education supervisors who have trained, so when we first started doing this the only way to know that was for people to go round and ask and keep a list, whereas now actually we've got a centrally held database, so we've moved from that data being local and very manual to we can now fill that in from the trust held database. (IV01)

I think one of the, by having this dashboard, it [...] concentrates the minds of those who, you know, in the management team [...] to have a process for [measurement]. [...] It's partly about accessing the information, partly about

having processes in place and actually having people with the time and the interest and the understanding to develop those processes (IV12)

The process of implementing the dashboard also highlighted gaps in responsibilities for education across the trust, and drove the appointment of CMG leads for education where these were not in place. By ensuring that CMG leads were appointed, this acted not only to improve data collection processes and engagement with the dashboard, but also to improve the infrastructure for assuring education quality across the trust.

And it's certainly helped drive the appointment of CMG education leads by highlighting who has and who didn't have those roles in post and that gave the clinical directors, they could see then, so when everybody has [an education lead] apart from one, they move to change not to be the outlier. Nobody likes to be the outlier (IV01)

What are the challenges in compiling the dashboard?

Data reporting

Staff had to engage in seeking and reporting data as part of their normal role. In some cases this could be time consuming and onerous – even though data existed it was not always easily accessible, as described by the CMG lead.

I know roughly the teams in clinical support, which ones are educational supervisors, which ones are clinical supervisors. Because I maintain my own [...] spreadsheet. [...] And it was a matter of e-mailing each and every individual, chasing up and finding out can you provide me with written evidence [of training]. And that's how I did it. Because there's no other way to find out [...] I pretty much did it in a very time consuming way I must say. (IV14)

CGM leads suggested that lack of admin support made it challenging for them to compile data for the dashboard.

For the last 18 months or so, there are certain data that I just can't get hold of [...] because we haven't, we didn't have a [junior doctors administrator] [...] and we didn't really have anybody working out, for example percentages of attendance, all sorts of things that are key. (IV12)

In addition, getting engagement for data collection across the CMG was sometimes seen as challenging – education leads within the CMG felt they could more easily get the information about their own specialty than others within the CMG with which they were less closely engaged.

In terms of the other challenges, I think getting engagement. So for [EQLs'] own specialties we know what's going on, but for the other specialties it can sometimes be a bit of a challenge. (IV02)

The education team felt that the commitment to the dashboard varied across the CMG leads leading to variable quality, completeness and reliability of data; this was attributed to lack of time for the clinical education leads due to having multiple different responsibilities and duties.

There's a variance in the commitment from the people who are doing the CMG leads [...] some of them are absolutely brilliant [...] they have folders [...] so they'll

put attendance lists in there, sign-in sheets, some of them are brilliant. Others I don't get any of that, and I just get a load of colours and think "not really sure how you've got this?" (IV04)

Getting dashboards updated could be frustrated by difficulty in getting staff to prioritise measurement. The perception was that staff were concerned with 'doing' - delivering care and education; measurement and evidencing the quality of their service were seen as secondary and less important tasks, with measuring education quality a particularly low priority.

Doing, you know, being part of a team, or delivering a service for the CMGs is much more important than justifying a service. So if you said "do you do that?" they'd probably say "yep". "Well can you tell me how've you measured that"? "Well we don't, we just know we do it." So I think they don't measure things, other than that they have to measure. And education isn't always in their forefront of measuring. (IV06)

Reliability and validity of the data

Ensuring up to date data was particularly challenging given that junior doctors rotated around specialties and between hospitals. The rotation of doctors, with new cohorts joining at regular intervals, could make it difficult to report meaningful data. Potentially, changes in RAG ratings could reflect changes in the cohort rather than underlying changes in the quality of the education environment, so timing of the update of the dashboard was seen as important.

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. (IV04)

Interviewees also argued that some aspects of the dashboard could be measured more rigorously than others, leading to the validity of some of the indicator data being questioned.

There's a danger that one or two of the questions are slightly difficult to quantify [...] things like trainees are supported to access study leave, well, they might be sometimes, they might not be other times. Whereas other things [like] the overall trainee satisfaction score, which comes from surveys is a much more quantitative thing. (IV03)

There was seen to be a risk of CMG leads filling in the dashboard based on their perceptions or assumptions, rather than basing their RAG rating on actual data - or using the dashboard for leverage to draw attention to issues that were on their agenda. Having a way of validating data, particularly if CMG leads were estimating rather than providing data to back up their RAG rating on the dashboard, was seen as important.

The CMG leads [...] don't [always] have information at their fingertips. [...] If people just put a colour in some of the boxes, then we didn't know [if this was accurate]. They were supposed to put their evidence in as well, to say I know this is green because I've got records of the trainees' timetabled clinics and I know that they've all been, but that's quite onerous, so we just decided that to get over that barrier we'd ask the trainees. [...] If the supervisors say for example trainee attendance is green [...] and then actually when we get the survey back from the trainees it's not, it's not sort of more than 85 percent, or 70, I can't remember, we

then say, we make it amber, and then I'll contact the CMG lead and say "you thought this was green, this is what the trainees are saying, could you just have a look at it"? (IV04)

Involvement and engagement

The dashboard was developed and driven by the central education team at the trust, and their role was absolutely critical in ensuring the dashboard was updated, feedback, and discussed at board and CMG level. Buy-in by the executives at trust level was also seen as critical

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 which is actually interested (IV05)

The education quality lead role within CMGs was seen important for compiling and acting on dashboard data, but, more broadly, these leads had a role in embedding a focus on education quality in daily business across the hospital.

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, for example looks at the quality of induction, [...] whether trainees are getting to their training [...] all those issues that are indicators on the dashboard [...] and those people then are embedded in the boards of those clinical management groups, to try and make sure that training their doctors has a high, you know, profile and agenda within that management group. (IV05)

A sense of ownership of the dashboards by the CMGs was seen as important, and a willingness to engage in actively using the dashboard to manage the quality of their education. Not all CMGs were seen as equally engaged in using the dashboard for improvement, meaning a strong drive from the central education team was often required.

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. (IV01)

[I'm not sure] how much it's reviewed [by CMGs], and how strong the actions coming out of it are [...] I think there's a bit of a sense that the central team are having to sort of nag the CMGs to use this as an active tool for improvement (IV03)

The central education team, and the trust CEO, had a clear vision of how the dashboard could be used to drive quality but if CMG education quality leads did not see how it was being used by the trust to inform decision-making, or did not perceive that support was filtering down to enable them to address the identified problems, they could end up seeing it as a tick box exercise and their engagement in the process of updating the dashboard could wane, as this quote from an EQL illustrates.

When there are concerns raised, I don't know to what extent it is going to be handled and looked into. [...] I have not had a single contact from say the [senior management] or anybody, to say that there is a problem, is there anything we could do?...that would have been fantastic [...] it has to be a two-way process,

where if there are problems, from the same people who are being trained delivering the service, I think there should be some support to address it [...] The dashboard, I think most of it is like a tick box exercise. (IV014)

Overall, however, interviewees felt, in terms of reviewing and responding to the dashboard, engagement was not so much of a problem; the main problem, particularly for the CMGs, was one of lack of time and time and conflicting priorities that compromised people's ability to act on the issues flagged up by the dashboard.

The only resistance is the usual one of just time and competing priorities [...] people are used to dashboards, we use them for all sorts of things here, our whole quality performance report [...] So I think it's not so much engaging with the dashboard, it's about finding the time to engage with the issues the dashboard is talking about. (IV03)

I don't think there's a resistance, but I don't know whether it's one of those, there's quite a lot of other things to do [...] I don't think education is right at the top of the forefront for the CMGs. (IV06)

Making sense of the data

The dashboard was seen as limited in that although it included indicators of the delivery of important elements of education provision, it could not provide insight into the quality of this provision, the work going on behind the data to drive improvement, or the direction of travel.

Where we've got say percentage trainee and departmental induction, that's a quantity, but it doesn't say that the induction's any good. So if there was some way of putting a quality for each of those. So there is a medical education lead. It would be really good to say there is an effective medical education lead. You know, so I think the limitations of the requirements are that they're measurable because they're numbers or yes/no, but they don't actually measure the quality behind it. (IV04)

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" (IV09)

Dashboard data was seen as useful in highlighting areas where there may be problems, but not necessarily providing insight into the reasons for these problems, or indicating what steps could be taken to improve quality in that areas of education provision. This was where the narrative behind the dashboard data was seen as important.

If we don't know why we're getting a red [...] then it's very very difficult then to work out what to do about it. (IV02)

What it can't do is get under some of the more softer or cultural issues [...] and that of course is where a narrative report can be more flexible. (IV03)

There were also issues to do with the granularity of the data. The team had taken the decision to report at the level of CMG, this was seen as providing a level of granularity that would provide useful information that could be acted on, without ending up with far too much detail. However, there was

a feeling that this level of reporting of the data could mask differences between specialties with a CMG.

The other thing is, which I think it's, it's, is probably a more serious limitation, is that it operates at CMG level which is a collection of specialties or services, whereas actually, in my experience, within the same CMG you can easily have a service or specialty which is fantastic at education and another one that's terrible. [...] All you're seeing [in the EQD] is an aggregated picture at CMG level (IV03)

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. (IV07)

Optimising the dashboard

Interviewees agreed that the indicators included in the dashboard are important indicators of education quality. The view was that the number of indicators was about right. Suggestions for change included adding a general question based on the GMC survey, similar to the 'friends and family' test, about whether trainees would recommend the post to a friend; and removing the indicator on study leave which was seen as not being fully within control of the trust. Some interviewees also suggested that including undergraduates, and nursing students, would enhance the value of the data as long as the perspectives of these groups were kept as distinct rather than merged together.

I think the one question which is always very telling for me is would I recommend this post to a friend. (IV02)

The study leave one, trainees are supported to access study leave [...] I'd probably quite like to remove that, because the study leave process is not entirely ours, it's cross management with Health Education England, and therefore sometimes we get, the sort of trainees are unhappy about study leave, and when we drill down to it it's not us. So that's a bit of a red herring sometimes (IV04)

Another issue highlighted by interviewees was that the dashboard would be improved if data was included to show the total number of medical students and trainees in each CMG. This was seen as important as an indicator of the amount of education going on in each area, and as an important factor in interpreting the data. This information about number of students and trainees was seen as best compiled and entered centrally by the education department.

I like to have a figure next to percentage so percentage trainee attendance at departmental induction for example is a bit meaningless because I don't know whether they've got ten trainees or 100 trainees it's just putting some context round it (IV09)

Across the top of the dashboard you [could] have number of consultants in CMG, and then you have number of higher and cores trainees in CMG, number of foundation doctors in trainee in CMG. Number of staff grades in CMG. And the last section being approximate number of medical students allocated to CMG [...] So I think it would be useful to have an idea at the top, certainly for people in the

trust to look at, to get a feel that actually there's a certain amount of educational work being done in this department that's a lot more than in another. (IV13)

The need for awareness-raising to make sure people were aware of the dashboard and understood its purpose and value was highlighted as important for the dashboard to have impact.

[The dashboard would be more useful for driving quality of education] if people understood the relevance of it, and the importance of it. [...] I suppose if you have some showcase, learning sessions on it [...] within the CMGs [...] and that would maybe support the education leads as well. (IV06)

A particular issue for the CMG leads was seen to be the problem of identifying when a new consultant joined the department, and ensuring that the new consultant met and was briefed by the education lead around expectations of them as a clinical supervisor.

I think the most important thing is to have a very robust central database, and then give the CMG educational leads access to the central database. [The problem] is still finding out who are the new members that join the departments. [...] [Perhaps] every time a new consultant is appointed to the trust, in their induction there [should be] something to say that you need to let your CMG educational lead know that you have joined the CMG [...] It is also something that might be helpful for the new consultants who come and meet up with the educational lead, to sort of share the trust's expectation from a new consultant [...] as a clinical supervisor. (IV14)

The possibility to benchmark data against other, similar, trusts was also seen as having the potential to increase the value of the dashboard.

Benchmarking against another trust. [...] I think you'd probably have to pick one like [Location], which is similar in size to this one. (IV07)

Discussion

This study, involving interviews with 14 stakeholders involved in designing, compiling and using the EQD, has highlighted the value of a dashboard approach for monitoring and improving the quality of education provision within a teaching hospital. Having a dashboard enabled the trust to proactively monitor the quality of their education provision internally as well as provide evidence to external bodies. The dashboard format was seen as useful in engaging managers and executives in thinking about education quality, as the dashboard format was something they were familiar with through the widespread use of dashboards for clinical quality indicators; as such it helped raise the profile of the issue of education quality. By making visible areas of weakness it was seen as a useful tool for arguing for investment of trust resources in education. Comparative data across CMGs was seen as particularly useful in driving improvement both through highlighting to CMGs areas in which they were performing less well than their colleagues, and through promoting the sharing of good practice.

At a departmental level, the dashboard helped raised awareness of issues and highlighted differences in performance between clinical management groups. At a Trust level, the pilot dashboard enabled education and training issues to be highlighted in a visual manner to key Boards and committees, who supported fairly rapid change to improve performance.

Key unintended positive consequences of the dashboard were the improvement of the quality of data capture and recording on education quality, and strengthening of the education infrastructure within the trust.

The time and the commitment of the core education team to maintaining the dashboard, the engagement of senior member of the board, and the appointment of an education quality manager and EQLs within each CMG with funded time in their job plans were seen as critical to make it work, in other words, it was important to establish an infrastructure for data submission and compilation, and to gain engagement between clinical service and training in order that dashboard data would be likely to be acted on.

Validity and reliability of dashboard data was raised as an issue, in part reflecting practical challenges of data capture; there were also, however, more fundamental questions around the extent to which some of the indicators involved a degree of subjectivity, and also whether RAG ratings provided by CMG leads could reflect varying motivations including using the dashboard to flag up issues that were on their own agenda. The dashboard was designed for both internal improvement (at both CMG and trust level) and external assurance, and there is the potential for these purposes to be in tension both in terms of the nature of data that is required for each purpose, and the drivers and incentives that could influence reporting.¹⁰ There was a feeling that data which was routinely collected and recorded, compiled centrally, or accessed through more rigorous means (e.g. via the trainee survey) was of greatest value.

Scoring using a red-amber-green rating system created some difficulties. Because metrics were averaged across departments, results sometimes averaged out to 'amber', masking variation at a more fine-grained level of service. While presenting the data at CMG level was seen to work well in terms of making the dashboard accessible and relevant, there were suggestions of the need to be able to drill down within CMGs to identify differences between specialities which may be masked by CMG level ratings.

Certain metrics were seen as difficult to grade objectively. For example, where the quality of education and training delivered is traditionally high, there is the potential for trainees to be more likely to be report dissatisfaction if there is a change, despite the standard still being high. This may be 'misrepresented' as a red rating. EQLs also acknowledged that accountability of reporting could lead to a fear of 'admitting to' red graded metrics, but the EQD team have been keen to encourage open reporting and to stress that this is not a punitive exercise.

Statutory and Mandatory training Compliance and Identification of Funding Streams education (expenditure) remain poorly completed metrics. We speculate that this may be because these two metrics are complex and heavily reliant on other systems and people to be completed, and are to some extent beyond the EQLs' control at present - although this is an area to explore further.

Interviewees pointed to the limitations of dashboards in that they did not give access to more nuanced information about the quality of education provision or the narrative behind the RAG rating, including issues of how to improve on poor ratings. Dashboards can be misleading, particularly because they provide only a snapshot in time rather than data trends; an understanding of the context and trends behind the RAG rating is critical.^{11,12}

A number of suggestions were given for improving the dashboard, these included adding information to the dashboard about numbers of trainees and core staff in each CMG, and improving awareness of the dashboard and linking CMG education leads with newly appointed consultants.

Engagement with the dashboard was not uniform across CMGs and this is something that could be addressed.

There is a need to regularly review metrics and change key metrics to continue to drive performance. Even during the relative short pilot period the team identified the need to amend one or two metrics to keep driving performance. The dashboard will be reviewed annually in an attempt to react to change, stay relevant and keep the EQLs and CMGs engaged in the process. In the future a strategic map approach will be used with weighting of metrics according to priority.

Strengths and limitations

The study is limited in that it studies the use of an education quality dashboard in a single trust. We did, however, interview a purposive, diverse sample of stakeholders involved in designing, compiling, and using the dashboard in a range of capacities. We used systematic analysis methods and checked across the data set for disconfirming cases for the emerging themes.

Conclusions

Overall the EQD was seen as valuable and impactful by interviewees. The possibility for spreading the dashboard was seen as positive, with a view that there would be value in being able to benchmark against other trusts, although lessons could be learned from problems identified in the use of maternity dashboards across different trusts including problems arising from a lack of shared indicators, and the need for agreed and clearly specified definitions for data collection.⁵

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Appendix 1: Topic guide

Topic guide V1 3/8/2016

Introduction

This project is looking at the use of the Education Quality Dashboard. We would like to ask you about your involvement with the dashboard, your views on the value of the dashboard for driving education quality, and how it could be improved.

Everything you tell us remains within the research team and will be anonymised.

Check consent, remind about recording and check all ok.

Opening

Can you tell me about your role in this organisation?

How long have you been in that role?

What are your main responsibilities?

The Education Quality Dashboard

Can you tell me about your involvement with the Education Quality Dashboard? In what ways have you been involved in compiling the data, reporting, or using the dashboard?

How is data collected and compiled for the dashboard? Who is involved? What are the challenges in collecting data for the dashboard and compiling the dashboard? How often is it updated?

Can you tell me about how the dashboard is used in the trust, in what different ways is it used, and by whom?

Who gets to see the dashboard in the trust, how is it shared? Is it shared with University / Deanery? Is it publicly available (e.g. on the trust website)?

How do people respond to dashboard data, to what extent do people within the trust see it as useful? Why? Is there any resistance to engaging with it?

What do you see as the value of the dashboard? What has the data shown, and what have you learned from it?

Have any changes to the organisation or delivery of education in the trust been made as a result of the dashboard? What are they and why? Have there been any other changes around reporting and accountability? What evidence is there that the changes have made a difference?

Have there been any unintended consequences of introducing the dashboard, either positive or negative?

In your opinion, to what extent does the dashboard play a role in driving the quality of education provision in the trust? Why?

What do you think are the key things that are required to make it work well?

Are there any limitations of the dashboard?

What do you think about the indicators included in the dashboard? Are they important indicators of education quality? Is there anything that you would add or remove?

What do you think would make the dashboard more useful for driving the quality of education?

Closing

Is there anything you would like to add about the Education Quality Dashboard?

Thank you for talking to me today.

Figures

Figure 1: Revised Education Quality Dashboard domains and metrics showing which were considered “leading” and “lagging”.

Requirement	Evidence	Leading or Lagging
Safe Learning Environment		
% CMG trainees with an identified Clinical Supervisor	Documented allocated supervisor. Documented process for allocation of supervisors	Lagging
% trainee attendance at Departmental induction	Induction records	Lagging
Formal, timetabled handover process in place BEFORE and AFTER Nights	Documented handover. Rota includes handover time	Lagging
% trainees completed UHL mandatory training	Mandatory Training Data	Lagging
Governance and Quality		
There is a Medical Education Lead in the CMG		Leading
Overall trainee satisfaction	GMC Training Survey, UHL survey	Lagging
Evidence that Education and Training Issues are integrated into CMG Governance processes	CMG Board Meeting minutes	Leading
Workforce plans are in place to manage shortfalls or changes in the medical workforce	Workforce plans. CMG Medical Workforce meetings	Leading
Support and development of trainees		
Junior doctor forum in CMG and CMG rep on UHL DITC	List of DITC representatives. Minutes of JD forums	Leading
Foundation trainees able to attend at least 70% of education sessions	Bleep free policy documented, rota enables 70% attendance, attendance records	Lagging
Core and Higher level trainees able to attend at least 70% teaching sessions,	Bleep free policy documented, rota enables 70% attendance, response to UHL survey	Lagging
Core and Higher level trainees timetabled access to theatre and out-patient clinics	Response to UHL survey, rotas enable attendance	Lagging
Trainees are supported to access study leave	Response to UHL survey, study leave reports for CMG	Lagging
Trainer/Mentor Support		
Supervisors trained for role (%)	DCE database	Lagging
Consultants with educational roles, have roles embedded within job plans (%)	Job planning reports	Leading
Education Facilities		
Trainees and trainers have access to local educational resources	GMC Survey, Audit of seminar rooms. Library statistics.	Lagging
Funding Streams		
Educational funding streams are identified within the CMG	Financial Reports	Lagging

CMG = Clinical Management Lead. DITC = Doctors in Training Committee. DCE = Director of Clinical Education.

Figure 2: Initial completion rate for each metric compared to completion rate by end of the pilot period

Metric and Domain	% completed at start of pilot	% completed at end of pilot
Safe Learning Environment		
% CMG trainees with an identified Clinical Supervisor	57%	100%
% trainee attendance at Departmental induction	57%	100%
Formal, timetabled handover process in place BEFORE and AFTER Nights	57%	100%
% trainees completed UHL mandatory training	21%	87.5%
Governance and Quality		
There is a Medical Education Lead in the CMG	100%	100%
Overall trainee satisfaction	100% (data collected centrally)	100%
Evidence that Education and Training Issues are integrated into CMG Governance processes	21%	100%
Workforce plans are in place to manage shortfalls or changes in the medical workforce	14%	100%
Support and development of trainees		
Junior doctor forum in CMG and CMG rep on UHL DITC	92%	100%
Foundation trainees able to attend at least 70% of education sessions	100% (data collected centrally)	100%
Core and Higher level trainees able to attend at least 70% teaching sessions,	57%	100%
Core and Higher level trainees timetabled access to theatre and out-patient clinics	43%	100%
Trainees are supported to access study leave	57%	100%
Trainer/Mentor Support		
Supervisors trained for role (%)	42%	100%
Consultants with educational roles, have roles embedded within job plans (%)	7%	100%
Education Facilities		
Trainees and trainers have access to local educational resources	21%	87.5%
Funding Streams		
Educational funding streams are identified within the CMG	0%	87.5%

Figure 3: Completed dashboard for March 2017

Requirement	1	2	3	4	5	6	7
Safe Learning Environment							
% CMG trainees with an identified Clinical Supervisor							
% trainee attendance at Departmental induction							
Formal, timetabled handover process in place BEFORE and AFTER Nights							
% trainees completed UHL mandatory training							
Governance and Quality							
There is a Medical Education Lead in the CMG							
Overall trainee satisfaction							
Evidence that Education and Training issues are integrated into CMG Governance processes							
Workforce plans are in place to manage shortfalls or changes in the medical workforce							
Support and development of trainees							
Junior doctor forum in CMG and CMG rep on UHL Doctors in Training committee							
% Foundation trainees able to attend at least 70% of education sessions	FY1- 47.5% FY2- 55%	FY1- 75% FY2- 100%	FY1- 58% FY2- 79%	FY1-67% FY2-100%	FY1-100% FY2- 94%	FY1-73% FY2- 80%	FY1- 64% FY2- 81%
Core and Higher level trainees able to attend at least 70% teaching sessions,							
Core and Higher level trainees have timetabled access to required theatre lists and out-patient clinics							
Trainees are supported to access study leave							
Trainer/Mentor Support							
Supervisors trained for role (%)							
Consultants with educational roles, have these roles embedded within job plans (%) including those in wider organisation/LETB and Medical School							
Education Facilities							
Trainees and trainers have access local educational resources							
Funding Streams							
Educational funding streams are identified within the CMG							

Note: Numbers in row 1 refer to CMG areas.