Evaluating the effectiveness of a Measurement for Improvement course in support of front-line managers delivering local improvement projects

With acknowledgements to the NHS Scotland staff who participated in the programme and provided evaluation data. Contact: Emma Levy, Training and Research Officer, NHS Education for Scotland: emma.levy@nes.scot.nhs.uk

What are we trying to accomplish?

For NHS Scotland, development of the workforce is a priority area for action in pursuit of high quality sustainable health services. Needs analysis carried out by the QI Hub identified a significant gap in knowledge and skills in relation to measurement for improvement. The aim of this project was to work towards a culture in which front-line healthcare staff carry out local improvement projects using evidence-based improvement science.

What change can we make that will result in improvement?

The change idea was to use a systematic approach to evaluation of measurement for improvement education, to drive improvements in:
- Knowledge, skill and confidence in measurement for improvement
- Application of this knowledge and skill to local improvement projects
- Healthcare services addressed by these local projects

We predicted that planning for impact using Kirkpatrick Level 4 methodology would be an effective approach.

How will we know that a change is an improvement?

The logic model developed for this educational initiative demonstrates how effectively measurement for improvement and planning for impact complement each other. The focus of measurement for improvement is on Intermediate and Ultimate outcomes in process measures and outcome measures, as well as balancing measures.

The planning for impact approach used here provided a framework to measure Outputs and Initial Outcomes, and so gain more understanding of any association between inputs and higher level outcomes.

Impact assessment planning

The evaluation was carried out by NES, and planning for impact (using ROI methodology) took place in tandem with development of the educational programme.

The evaluation methodology used was based on the Kirkpatrick 4-level training evaluation model, which has been developed by Kirkpatrick into a 6-level model. By collecting data at all levels before the highest, a chain of impact can be shown to link the levels. With this chain of impact in place, it is possible to demonstrate that benefits at higher levels are associated with lower levels, activities and inputs. Evaluation was planned from Level 4 to Level 1.

Do

A mixed methods approach was used to collect quantitative and qualitative data from programme participants from before Workshop 1 (Baseline) to four months following Workshop 2.

- Level 1: Evaluation form and action plan at the end of each workshop.
- Level 2: Baseline and post-course multiple choice test at each workshop.
- Level 3: Baseline data was collected via online self-assessment questionnaire before the first workshop. Online questionnaires were used at 3 stages at 2 month intervals.
- Level 4: Data would be included in project documents submitted in response to Level 3 questionnaires.

In the absence of evaluation data from similar educational initiatives to set a benchmark, impact objectives were set high at Level 1 and 2, with the expectation that impact would diminish at higher levels.

Balancing measures were identified through questions on barriers and enablers of transfer of learning to the workplace (Level 3), and questions on unanticipated consequences that participants or their colleagues had experienced, and other observations about the programme (Level 1).

Study

- Level 3: Work practice and Level 4: Organisational outcomes
- Returned questionnaires indicated that some respondents were working on improvement projects. However, these were rarely accompanied by project documents to provide objective evidence of work practices that supported improvement projects.

Level 2: Knowledge, skill and confidence

Objectives

For 80% of respondents to achieve at least 80% scores in the post-test.

- For 80% of respondents to increase their test score by at least 40% (pre-test to post-test)

Results were well below the objectives. However, following changes, in Cohort 2 37% of respondents achieved 80% correct scores.

Percentage of respondents achieving % correct scores in objective Post-test

<table>
<thead>
<tr>
<th>Cohort</th>
<th>40 - 49%</th>
<th>50 - 69%</th>
<th>70 - 79%</th>
<th>80 - 99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohort 1</td>
<td>30%</td>
<td>27%</td>
<td>27%</td>
<td>9%</td>
</tr>
<tr>
<td>Cohort 2</td>
<td>10%</td>
<td>20%</td>
<td>12%</td>
<td>58%</td>
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</tbody>
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Qualitative responses included:

- The course was excellent and I came out feeling I had a better grasp of run charts.
- Speed of evaluation questions too high.
- Quick pace. Maybe make it longer as a lot of information to take in.
- I really enjoyed the day, I did a driver diagram, prioritised ideas and started on PDSA and would have got nowhere near that before.

Act

Results demonstrated high levels of engagement and learning, and intent to apply learning, but difficulties in transferring the learning to the workplace, associated with a number of barriers identified by the respondents.

Lessons learned: Skills for Improvement

- To increase engagement:
  - a different approach is needed to select participants
  - participants must join the programme with an idea agreed for their workplace

- Collaboration with local improvement advisors and faculty is needed to support transfer of learning to the workplace.

- Course participants must identify and agree with key stakeholders an idea for their improvement project, before taking part in the programme.

- The relative isolation that some front-line staff feel when attempting to carry out their workplace projects could be alleviated by encouraging participation in the programme by work teams of 2 or 3 people.

Lesson learned: Planning for impact with ROI evaluation methodology

- The transition time of the Level 2 objective test slides was too fast and may not have allowed participants to demonstrate their knowledge and skill.

- Closer engagement is needed with local boards to enable collection of Level 3 data to identify whether course participants are doing anything differently at work, and to establish a chain of impact between the educational programme and service outcomes.

- Tracking and reporting on results as early as possible allows action to be taken within the programme to increase the likelihood of achieving the desired outcomes (for example, revising content from Workshop 1 in Workshop 2).

Next Steps

This evaluation has so far informed development of two programmes: a revision of the pilot Skills for Improvement Measurement, and a more in-depth improvement science programme. The focus of revisions is on using different approaches to support transfer of learning to the workplace.

- To reduce the intensity and perception of pace in the workshops, encourage participants to work through more QI Hub website e-modules before attending Workshop 1.

- Add an introductory webinar to orient participants to the course.

- Schedule a longer gap between the workshops, to allow participants to progress further with their projects before returning for Workshop 2.

- Develop a resource bank of examples of improvement project materials (such as driver diagrams, run charts), so that for each cohort examples can be included that are more directly relevant to the specific participants attending.

- Work in partnership with organisations across NHS Scotland to support improvement clinics.

- Engage partners in planning for impact from the earliest stages of consultation.

Post script

Following completion of the second cohort, run charts are being used to support analysis of evaluation data. For example, for Workshop 1:

- To support analysis of evaluation data. For example, for Workshop 1:
  - Figure 1: Changes in confidence to apply learning.