

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

With acknowledgements to the NHSScotland staff who participated in the programme and provided evaluation data.  
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## What are we trying to accomplish?

For NHSScotland, development of the workforce is a priority area for action in pursuit of high quality sustainable health services<sup>1</sup>. Needs analysis carried out by the QI Hub<sup>2</sup> 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:

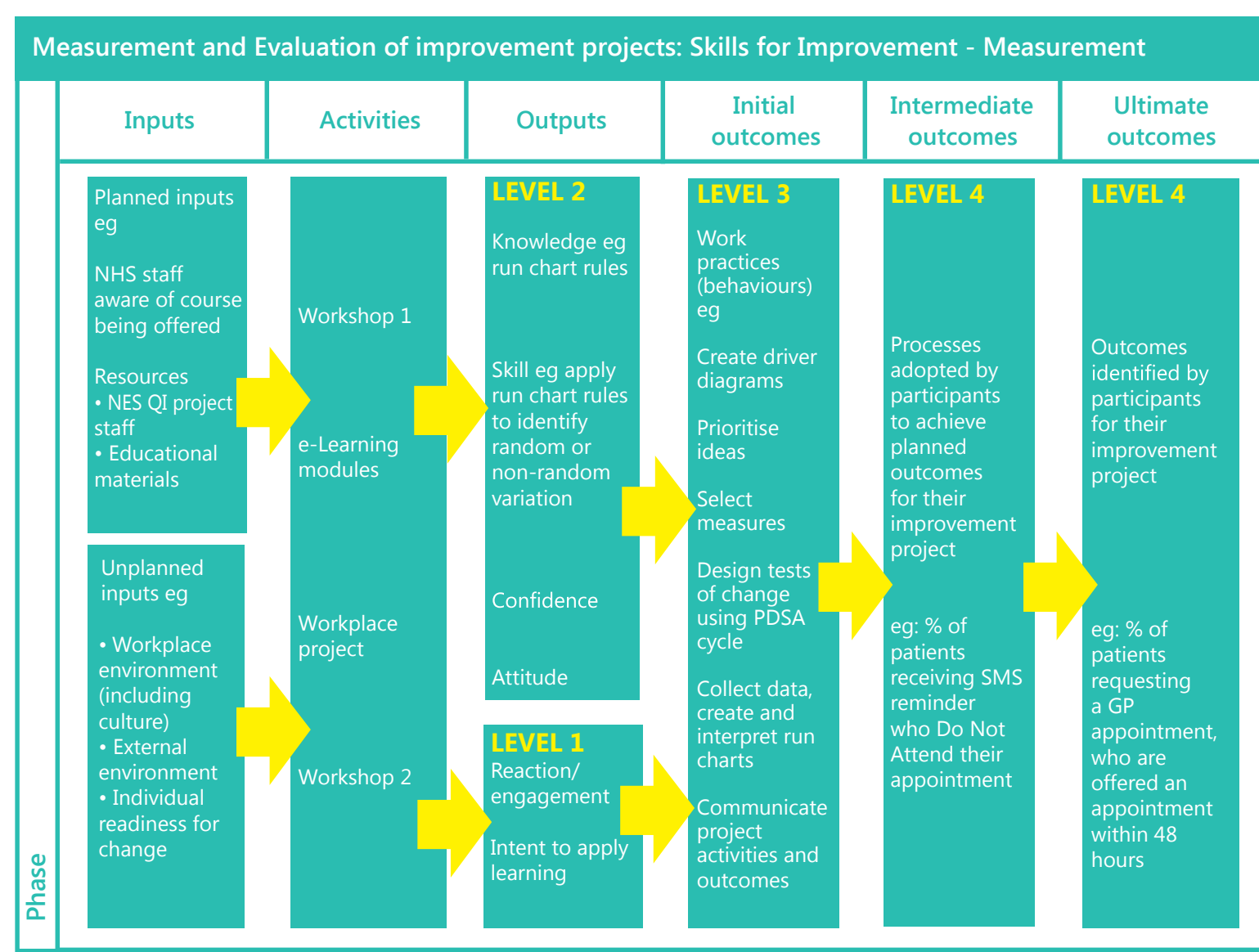
- Knowledge, skill and confidence in measurement for improvement
- Application of this knowledge, skill and confidence to local improvement projects
- Healthcare services addressed by these local projects

We predicted that planning for impact using Return on Investment (ROI) 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 ie 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.



## Plan

**Skills for Improvement: Measurement**  
This new educational programme was developed and delivered by NES in partnership with the QI Hub. It was delivered to a multi-disciplinary group of NHSScotland staff with a role in improvement projects in diverse care settings. It followed a blended approach with 2 one-day workshops, e-learning modules to consolidate learning, and a workplace project.

**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<sup>3</sup>, which has been developed by abdi ltd into a 6-level model. By collecting data at all levels below 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.

<b>Level 1</b> Evaluation form and action plan at the end of each workshop. Online questionnaire following each e-module.
<b>Level 2</b> Baseline and post-course multiple choice test at each workshop.
<b>Level 3</b> Baseline data was collected via online self-assessment questionnaire before the first workshop. Online questionnaires were used at 3 stages at 2 month intervals. Copies of project documents were requested, for assessment against defined standards for improvement project practices.
<b>Level 4</b> 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 only rarely accompanied by project documents to provide objective evidence of work practices that supported improvement projects.

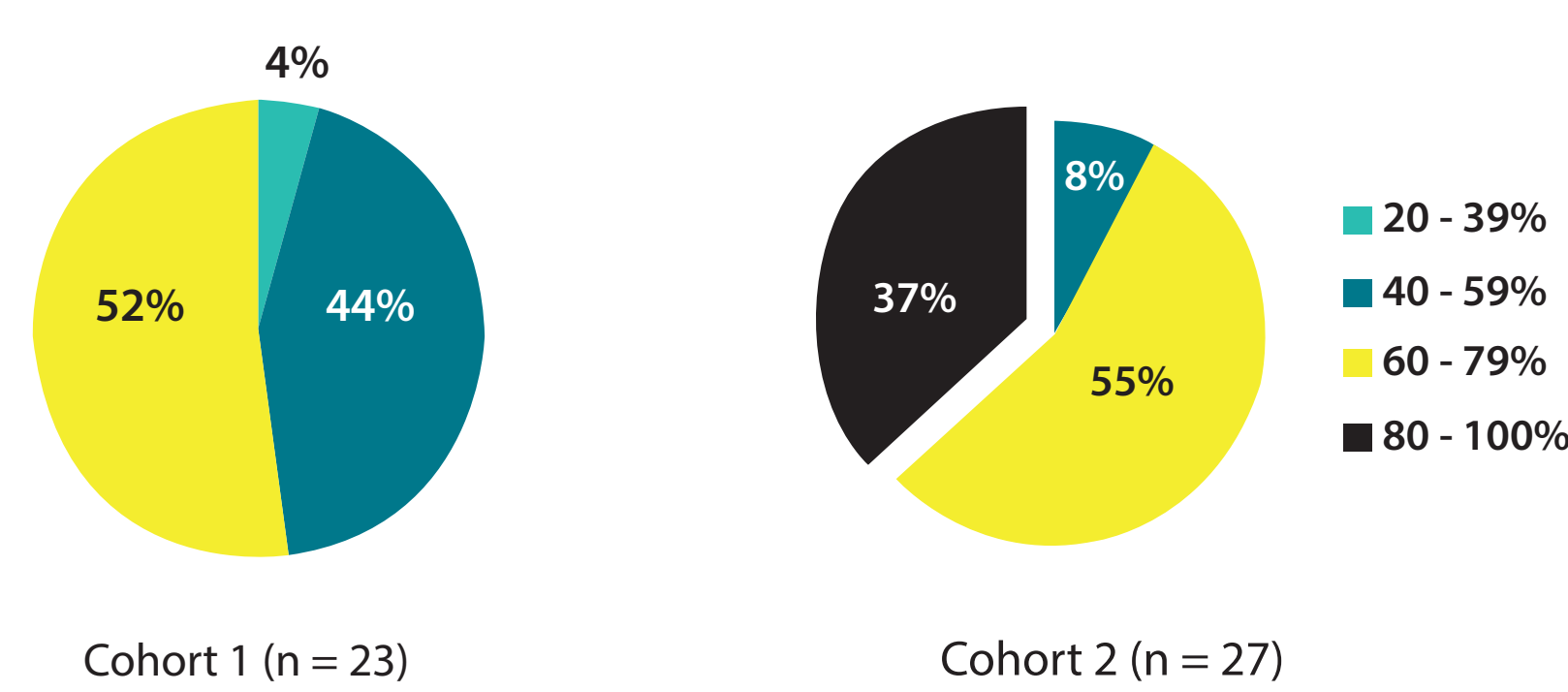
Level 2: Knowledge, skill and confidence

## 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:

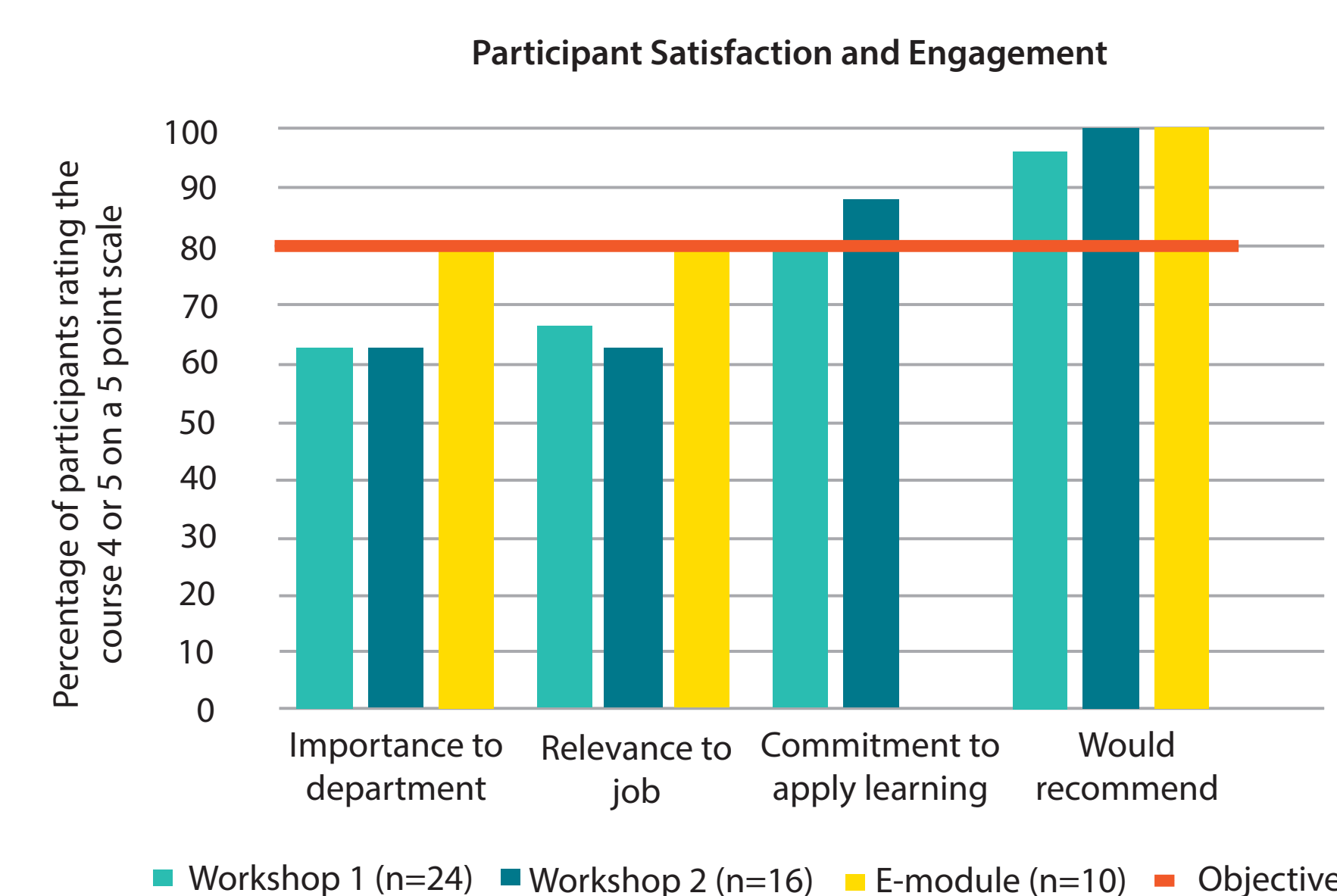
## Percentage of respondents achieving % correct scores in objective Post-test



The second objective provides a check against the scores in the post-test, indicating whether high scores at that stage were due to increased knowledge and skills, or high pre-workshop levels of knowledge and skill. In the first cohort, 21% of respondents achieved an increase in test score of 40% or more. In the second cohort (following changes to the programme), this increased to 41%.

Level 1: Engagement and intent to apply learning

While the first cohort did not meet all the objectives, the impact achieved can now be used as a benchmark, and suggests that the objectives are appropriate.



## 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 selecting participants
  - » participants must join the programme with an idea agreed for their project.
- Closer 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 territorial 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).

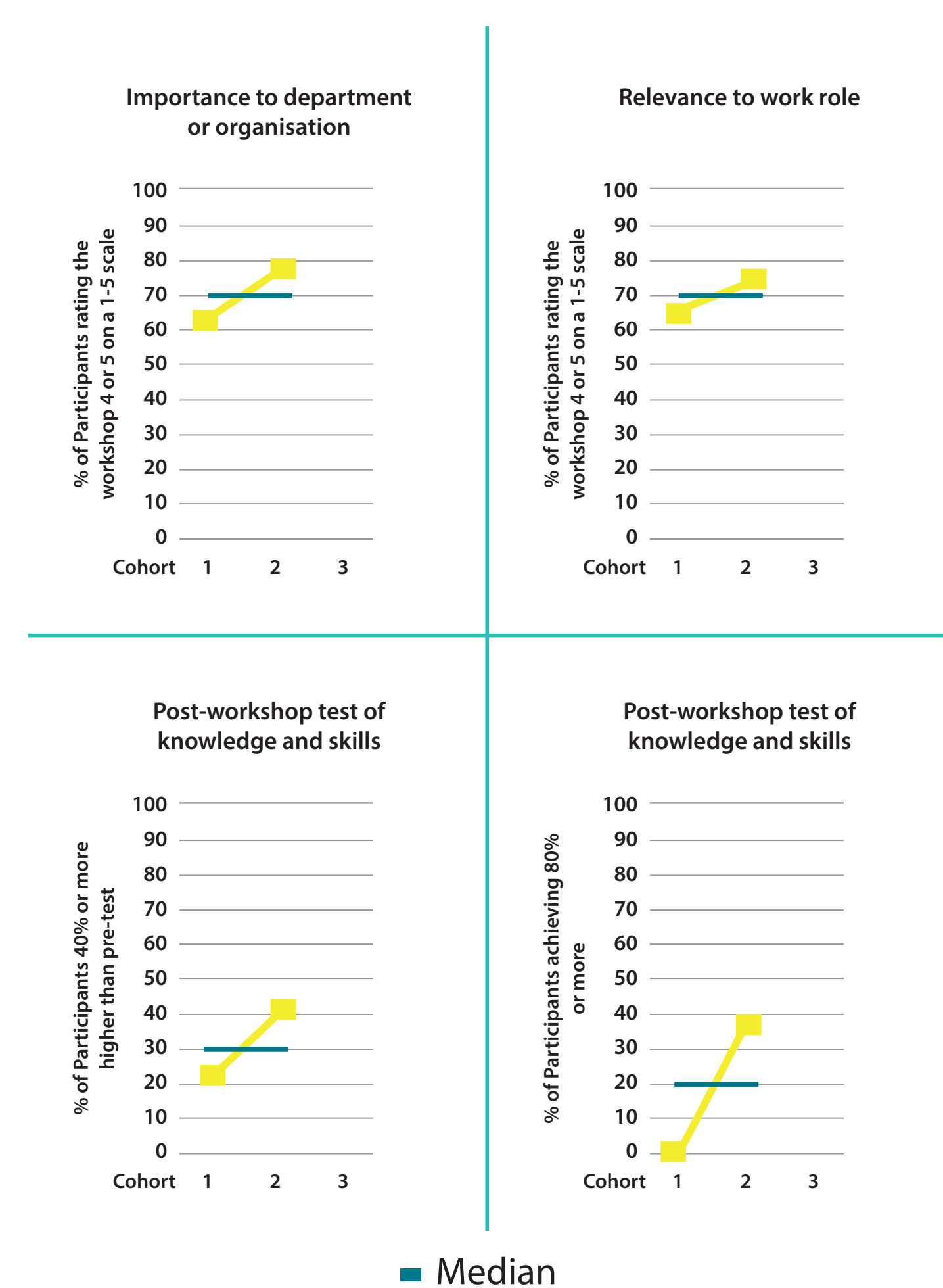
## Next Steps

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 webex 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 NHSScotland 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:



## Recommendation

- This evaluation study provides evidence of the effectiveness of the educational approach used, and provides a model for evaluation of other improvement initiatives.
- A systematic approach to evaluation of improvement education supports planning and delivery of programmes that build capacity and capability in improvement. The planning for impact framework can easily be adapted to evaluating and improving future quality improvement education.
- It may therefore contribute to development of high quality sustainable health services.

## Footnotes

- 1 The Healthcare Quality Strategy (2010), 2020 Workforce Vision (2013), The Scottish Government
- 2 A partnership between NHS Education for Scotland, Healthcare Improvement Scotland, National Services Scotland – Information Services Division, NHS Health Scotland, and the Quality and Efficiency Support Team (Scottish Government)
- 3 www.kirkpatrickpartners.com