The purpose, design and use of balancing measures in quality and safety improvement

The Scottish Improvement Science Collaborating Centre (SISCC), led by the University of Dundee with NHS Tayside, aims to improve health and care by developing the evidence base for sustainable, large-scale improvement in health and social care. The SISCC brings together researchers, NHS staff, policy makers, educators, and the third sector from across Scotland and internationally in a coordinated and coherent way, to add value to existing investment and deliver a ‘step change’ in improvement knowledge and practice, and maximise benefit for Scotland and beyond. This study is part of ‘Improvement Science Methods’ Research theme which examines the use of measurement in health and social care quality improvement and beyond.

Research background

Work to systematically improve the quality of health and social care has steadily grown in scope and scale, but it is increasingly recognised that improvements can have consequences beyond their intended effects. The development of ‘balancing measures’ (which assist in identifying, measuring and monitoring unintended consequences) is important as they can support local teams to assess and improve care and to evaluate overall effectiveness of ‘balancing measures’ has not been widely used within the health and social care context can support local teams to assess and improve care and to evaluate overall effectiveness.

Aims

This poster presents preliminary findings based on a study conducted as part of a three-phased consultation process which seeks to explore the purpose, design and use of balancing measures in the Scottish health and social care quality improvement context and internationally.

Data collection

15 participants were identified through personal networks and public databases. Snowball sampling was used in an attempt to increase recruitment. Participants came from a wide range of organisations across Scotland, England and the United States, including academics, commissioners and providers of health and social care services, improvement advisors, policy-makers and regulators, voluntary and community groups. Semi-structured interviews were conducted by phone and face to face, and took on average an hour to complete. Data were audio-recorded and transcribed.

Data analysis

Framework approach was used to identify themes and develop conceptual schemes, drawing on the Diffusion of Innovations Theory (Rogers, 1995, Ash et al. 2006, 2007, 2011) and highlighting the complex relationships across and among different types of consequences of quality improvement (anticipated or unanticipated and desirable or undesirable). Responses were summarized to identify essential elements for comparison and mapped according to the key concepts included in the framework:

- Anticipated
- Unanticipated

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Figure 1-Balancing measures conceptual framework (Adapted after Rogers, 1995, Ash et al. 2006, 2007, 2011)

Results

Anticipated undesirable consequences (trade-offs)

For most participants, balancing measures were usually designed to capture anticipated undesirable consequences of quality improvement (defined as ‘potential negative consequences,’ ‘knock-off effects,’ ‘adverse effects,’ ‘negative side effects’ or ‘dangerous consequences elsewhere in the system’). For instance, ‘introducing the care bundles to prevent ventilator-associated pneumonia aimed at reducing the time patients spend on a ventilator after surgery. However, the risk of an increased frequency of unplanned reintubations was anticipated and confirmed. ‘Work to increase rates of early discharge and reduce length of stay led to patients being discharged into inappropriate conditions and environments which in turn caused an anticipated increase in readmission rates and associated costs’.

Unanticipated desirable consequences (serendipities)

Only three participants explicitly referred to unanticipated desirable consequences and defined them as being ‘positive consequences of actions that were not initially expected’ (serendipities). Serendipities were seen as having an important value, usually when unexpected benefits were identified, replicated or promoted. For instance, ‘a quality improvement initiative aimed at improving writing and reading skills in secondary schools led to an unanticipated reduction in absence rates as a result of better students’ engagement with different activities across the school. Teachers also reported improvements in classroom atmosphere, externalised behaviour and overall attitudes towards learning’.

Unanticipated undesirable (‘classic’ negative unintended consequences)

Classic negative unintended consequences are not expected and not normally considered alongside goals from the start of improvement. Some participants questioned whether such measurement is possible and highlighted two important questions: how and by whom could or should unanticipated undesirable consequences be initially detected and measured after the implementation of a new improvement project?

Current measurement practices

All participants agreed that measuring unintended consequences is challenging and could be improved. Responses given as to why these problems exist were voluminous and diverse. Firstly they described various methodological challenges related to identifying and quantifying intangibles and the use of qualitative and quantitative tools in measuring potential consequences. This often requires additional data collection which leads to burnout, loss of morale and disenagement. Nevertheless, there were several suggestions that improved use of routine data, better capabilities in electronic record systems and embedding measurement in the workflow can reduce staff resistance to change and create ownership of data.

Preliminary conclusions and next steps

The findings suggest that current understanding of the complete spectrum of unintended consequences remains in its early stage, lacking consistency and rigour. This can be partly attributed to an extensive improvement focus on process measures, the ‘good enough’ existing measurement practices and the lack of research into the conceptual models upon which measurement is currently based. A stakeholders’ workshop and a formal consensus study will be carried out to provide clarity in the meaning, scope and application of balancing measures in improvement projects, potentially influencing future use of these measures and accelerating patient safety progress.