Milestone-Based Assessments Are Superior to Likert-Type Assessments in Illustrating Trainee Progression

Reference:
Bartlett KW¹, Whicker SA², Bookman J³, Narayan AP¹, Staples, BB¹, Hering H¹, McGann KA⁴. Milestone-Based Assessments Are Superior to Likert-Type Assessments in Illustrating Trainee Progression. Journal of Graduate Medical Education. 2015 Mar;7 (1):75-80

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Tags
Clinical domain
Medical Expert
Communicator

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Background
Worldwide there is a growing concern & dissatisfaction with the assessment systems we have been using in the health professions: ad hoc, unreliable, often not valid in any sense.

In response, there has been a move to new educational technologies and approaches: "programmatic assessment" [see the work of Schuwirth & van der Vleuten, such as Med Ed 2005] and competency based medical education in the form of milestones and EPAs (Entrustable Professional Activities). However, little evidence is available about the role of milestones or EPAs in assessment.

Purpose
Fast out of the gate arrives Bartlett's group from Duke in the US. They set out to "determine if milestone-based assessments better stratify trainees than Likert-type assessments".
**Type of paper**

Research: Observational Database study

**Key Points on the Methods**

This study took place in a Pediatrics training program in the US. I found the authors’ description of their methods complex, and difficult to understand...Essentially, they decided that 3 of the new milestones deployed as part of the American Board of Pediatrics’ response to the new ACGME system were essentially identical to 3 of their "old" Likert-based assessment forms. The 3 domains involved data gathering at the bedside, MD-patient communication skills, and plan formulation from a clinical encounter. They then looked at 2 research questions:

1) For the first 7 months of rotations in these 3 domains, how did the mean scores of the new (2013) PGY1 "milestone" cohort compare to the previous (2012) cohort in PGY1?

2) Comparing all the mean assessment scores achieved by all the residents in 2012 (using Likert tools) and all the residents in 2013 (using milestones tools), which were more discriminating by PGY?

They also took pains to compare various characteristics of the 2 cohort years to show that they were similar in other ways. Notably, the "milestones" phase involved intensive faculty development in assessment.

**Key Outcomes**

1. The mean scores on Likert instruments were significantly higher in 2012 than with the milestones in 2013, with a positive p value

2. The mean scores by PGY1 year in the Likert phase did not discriminate between years, while the milestones seemed to

**Key Conclusions**

The authors conclude that "milestones are better", because they show progression of competence.

Unfortunately the entire study has some major threats to validity & generalizability, Including:

1. Single site, single program
2. only 7 months of data after launch of a major change
3. One cohort had faculty development that may account for any signal
4. The biggie: the way the "milestones" are used, were essentially like a Likert scale themselves, so this may be an odd comparison. My impression is that this is really an observation of some mean scores on 2 different Likert based instruments.
Having said this, full kudos for being scholarly about the change to a new system. There may be some signal here about progression (validity evidence for the concept of milestones, but more study is needed).

Spare Keys – other take home points for clinician educators

1. Kudos to the authors for being scholarly about the change they implemented. Sharing early results allows for others to build on the work

2. Early publications experience a leniency bias in editors who are keen to host cutting edge work, so get out there with your change

Shout out

JGME is a great, rapidly emerging MedEd journal. You should read it. A shout out to EIC Gail Sullivan & Managing Editor Ingrid Philibert for the good work so far.