



Comparison of resident self, peer and faculty evaluation A retrospective analysis

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Background and significance

In 2014, the Accreditation Council on Graduate Medical Council (ACGME) pediatric milestone project was implemented. It is an initiative for assessing and reporting resident development and competency in 21 specific milestones under the 6 physician competency domains. These domains include patient care, medical knowledge, practice based learning, interpersonal and communication skills, professionalism and system-based practice.

Morehouse School of Medicine (MSM) Pediatric Residency Program uses an evaluation instrument adapted from Nationwide Children's Hospital, Annual Self Assessment Instrument. It comprises 21 milestones under the 6 ACGME domains with 2 additional milestones under patient care and medical knowledge added by our program. Residents are evaluated using a scale of 1 to 9 in order of increasing competence. Previous studies had hypothesized that sufficient training in evaluation may be a factor in increasing the correlation between faculty and resident evaluations ratings. MSM Pediatric Residency Program trains its faculty and residents on feedback and use of milestone assessment. We therefore decided to compare the ACGME milestone ratings of our residents self, peer and faculty evaluations.

Objective

To compare resident self, peer and faculty evaluations.

Hypothesis

There will be no significant difference in the mean milestone ratings between self, faculty and peer.

There will be positive correlation between resident self and faculty evaluation.

Methods

This was a retrospective analysis. Data was collected for all 17 pediatric residents enrolled in our program. Exemption was obtained from the Morehouse School of Medicine Institutional Review Board. We obtained consent to use the evaluation instrument from the original author at Nationwide Children's Hospital. De-identified data was transcribed directly from the electronic Residency Management Suite – New Innovations (electronic evaluation system) to a Microsoft Excel spreadsheet.

All resident self, peer and faculty evaluations submitted between January and June 2014 corresponding to the second half of the 2013 – 2014 academic year were obtained. We extracted the individual resident self-evaluation score for each of these milestones and the average of all faculty and peer evaluations for the corresponding milestones.

SPSS was used for data analysis. Paired t-test was performed to compare the mean scores for the resident self, faculty and peer under each milestone. Spearman correlation was used to determine the correlation between faculty and resident, peer and resident, and also faculty and peer for each milestone. Statistical significance was considered if p-value was greater than or equal to 0.05.

Figure 1. Medical Knowledge1 Milestone

Level 1	Level 2	Level 3	Level 4	Level 5
Explains basic principles of Evidence-based Medicine (EBM), but relevance is limited by lack of clinical exposure	Recognizes the importance of using current information to care for patients and responds to external prompts to do so; is able to formulate questions with some difficulty, but is not yet efficient with online searching; is starting to learn critical appraisal skills	Able to identify knowledge gaps as learning opportunities; makes an effort to ask answerable questions on a regular basis and is becoming increasingly able to do so; understands varying levels of evidence and can utilize advanced search methods; is able to critically appraise a topic by analyzing the major outcomes, however, may need guidance in understanding the subtleties of the evidence; begins to seek and apply evidence when needed, not just when assigned to do so	Is increasingly self-motivated to learn more, as exhibited by regularly formulating answerable questions; incorporates use of clinical evidence in rounds and teaches fellow learners; is quite capable with advanced searching; is able to critically appraise topics and does so regularly; shares findings with others to try to improve their abilities; practices EBM because of the benefit to the patient and the desire to learn more rather than in response to external prompts	Teaches critical appraisal of topics to others; strives for change at the organizational level as dictated by best current information; is able to easily formulate answerable clinical questions and does so with majority of patients as a habit; is able to effectively and efficiently search and access the literature; is seen by others as a role model for practicing EBM
1	2	3	4	5

2- medical student, 4- Intern, 7- senior, resident 9-attending

Results

Data was collected for all 17 pediatric residents which include 6 PGY1, 6 PGY2 and 5 PGY3. We had 2 missing data points – 1 PGY1 Resident self-Evaluation and 1 PGY 3 Resident self-evaluation.

Chart 1 . Means vs Milestones

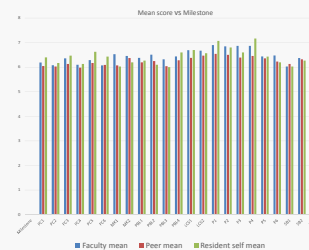


Table 1. Statistically Significant Means

MILESTONES	Spearman correlation	P-value Faculty vs Peer	Spearman correlation	P-value Faculty vs Resident	Spearman correlation	P-value Resident vs Peer
MK1	0.68	0.0025	0.80	0.0004	0.64	0.0104
PBL2	0.73	0.001	0.82	0.0002	0.74	0.0015
P3	0.50	0.0401	0.69	0.0047	0.58	0.0249
P4	0.60	0.0116	0.67	0.0035	0.47	0.0783

Discussion

Our study showed positive correlation between resident and attending evaluation in all the milestones and there was no significant difference in the resident's mean score for patient care, systems based practice and interpersonal and communication skills. This may be because our residents and faculty were trained on how to use this evaluation template and how to give feedback. While there was a statistical difference in the mean score for MK1 and PBL2 for faculty versus resident, P3 and P4 for faculty versus Peer and P4 for resident vs peer, it was interesting to note that the faculty mean was higher than both resident and peer means for all of these milestones. These scores still showed moderate to strong positive correlation as evidenced by upward trend in resident scores in all categories based on level of training.

Table 2: Milestone versus Mean

Milestone	faculty mean(N=17)	faculty SD	peer mean (N=17)	Peer SD	resident mean(N=15)	Resident SD	p-value* for faculty VS peer	p-value* for faculty VS resident	p-value* for resident VS peer
MK1	6.53	1.13	6.07	0.93	6.03	1.25	0.0511	0.0293	0.5301
PBL2	6.51	1.04	6.25	1	6.1	1.23	0.1601	0.0382	0.1961
P3	6.87	0.84	6.39	0.79	6.6	1.12	0.0277	0.1896	0.6045
P4	6.87	0.84	6.46	0.78	7.17	0.84	0.0351	0.1574	0.0072

This raises certain questions: Do residents underestimate their medical knowledge? Are the faculty more confident of their residents than the residents are in themselves? To have a more objective analysis of medical knowledge, it would be good to compare faculty and resident mean scores with corresponding scores on standardized tests.

Limitations

Small class size and single institution studied.

Missing data: 2 resident self evaluations.

Not all faculty completed evaluations on the residents they had supervised.

Next Steps

Compare resident, peer and faculty evaluation with corresponding resident ITE or board scores

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The residents and faculty of Department of Pediatrics, Morehouse School of Medicine

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