Using Positive Deviance in Medical Education to Empower Learning

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Physician comment on the conventional mode of lifelong learning from mistakes:

"It is a crime. I'm not sure why or how it gets translated that way, but it is. Medicine has always had this very high ethical standard and to fail that standard is to be guilty. There's some anonymous court that's been set up someplace--I mean Osler or God somewhere at Massachusetts General Hospital-- and you 've been convicted and tried at the same time."

- Christensen. Heart of Darkness. JGIM 1992 PMID 1506949

Observations on from using positive deviance for lifelong learning:

"Interviews revealed enthusiastic support for surgeon-specific outcome reports (SSORs) as a means to improve patient care through awareness of personal outcomes with blinded divisional comparison for similar operations and diseases, and apply the learning objectives to continuous professional development and maintenance of certification."

- Ivanovic. Surgeon-Specific Outcome Reports and Positive Deviance. Ann Thorac Surg. 2015 PMID 26188970

Background

Positive deviance (PD) has been used successfully in clinical care but not applied to medical education. We introduced PD to help residents' tactics to speed the handling outpatient test results, in order to: 1) improve the clinical process, and 2) expose trainees to PD.

Methods

Each resident attended one PD seminars of 7 to 8 residents. During the seminar, residents' opinions were collected with a RedCap survey.

Prior to the seminar, forest plots determined our overall proportion of results handled within 2 days (timely rate, TR), the TR of each resident, and the heterogeneity (I^2) of the group. The forest plots were anonymized and emailed before the seminar to each resident with their own result identified.

Results

Our baseline TR was 52% (range 0% to 97%; I^2 = 85%) with a mean of 7.4 days. In each seminar, after collecting and showing each member's tactics without attribution, 72% and 58% of residents voted to encourage the deviants and all participants, respectively, to identify uniquely successful tactics.

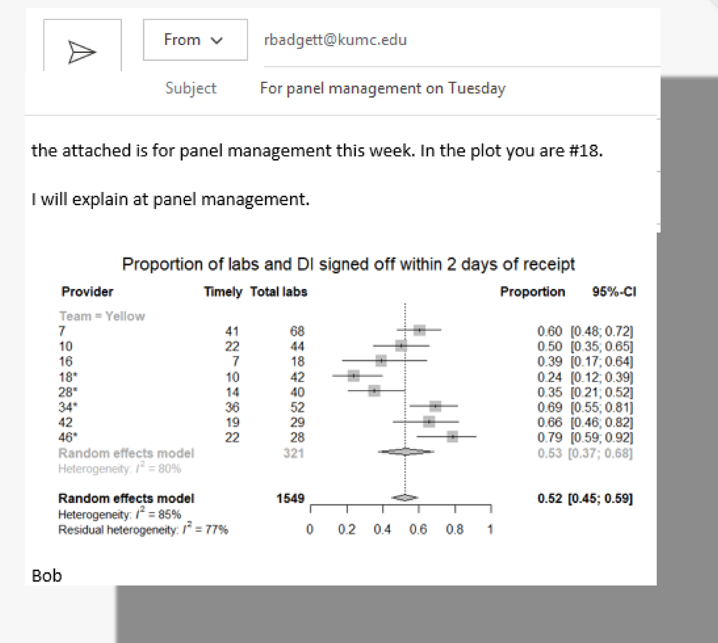
After the seminar, 83% of residents assessed the session positively (p = 0.96 for comparison with the same assessment of other components in our last year-end curriculum survey).

Over the subsequent 10 weeks, a secular increase in performance occurred.

Conclusion

In this initial use of PD to empower learning on a mundane task, the residents received the experience similarly to established components of our curriculum. The finding that 72% of residents encouraged identifying positive deviants suggests that about a quarter of residents were initially uncomfortable with this introduction to PD.

Figure 1. example email to residents the day before the session.


From rbadgett@kumc.edu
Subject For panel management on Tuesday

the attached is for panel management this week. In the plot you are #18.

I will explain at panel management.

Bob

Figure 2. Forest plot of test results turnaround times for all residents (anonymized). This slide was shown to residents when they voted whether to ask the positive deviants to identify themselves and their tactics from Figure 2.

References

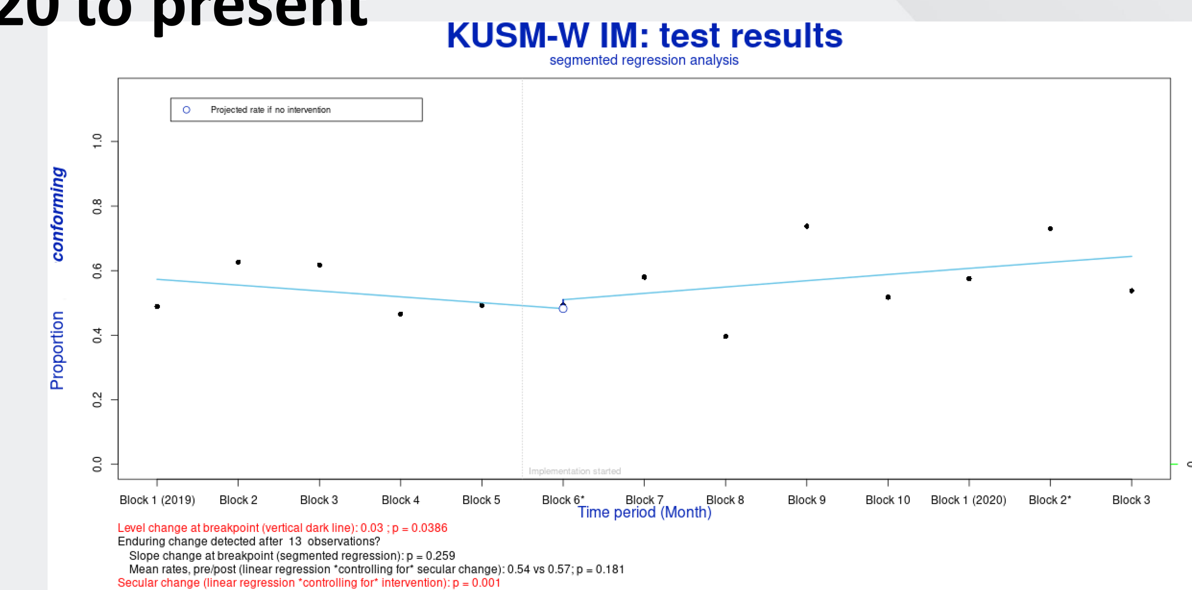
1. Christensen et al. Heart of Darkness. JGIM 1992 PMID 1506949
2. Hazy JK, Uhl-Bien M. Towards operationalizing complexity leadership: How generative, administrative and community-building leadership practices enact organizational outcomes. Leadership. 2015 Feb 1;11(1):79–104.
3. Ivanovic et al. Surgeon-Specific Outcome Reports and Positive Deviance. Ann Thorac Surg. 2015 PMID 26188970

Figure 3. Grid of test result handling tactics submitted at one session. Note this is useless without knowing which tactics belong to the positive deviants.

Team blue

Record ID record_id	What thing(s) do you do in managing test results that you think mos ... use a laptop vs a smartphone tactics
32	-check ecw weekly -based on time availability -kathleen if normal and nothing to do, Call the patient to discuss abnormal results esp if need to redo labs or adjust medication, ask MA to call if can not reach the patient and options discussed with patient in previous visit based on lab results -5 to 20 mins -laptop
33	Using the app to address them with dot phrases programed into iphone. When tests are normal I ask the MA to call patient. If abnormal and require clarification, I do so myself, If need for admission, I do so myself.
34	I unfortunately do not have any specific things that I use to help manage my work flow
35	1- Fix a day per week (my day off) to review ecW 2- NL lab: Katie sends a letter; abNL and needs f-up appointment: MA to notify; critical abNLty and/or anxious patient (or requested by patient): call the patient. 3- Session length: 10-15 mins 4- Smartphone when it allows me to login!
36	I opened the ECW once I got an alert email for lab result, starting by checking the result through by mobile application, then, most of the time, I used my web based ECW to notify the MA to send the result with the instruction if needed
37	- Address eCW notifications as they arrive - send normal/unremarkable labs to Kathleen immediately (takes ~2 mins to review and send) - call the patient/your MA with plan if not (~5-10 mins depending on the problem/action) - smartphone
38	I redownloaded the app and added email. Use alerts to prompt me to check labs, etc. Go to computer lab on fridays. - If negative send a letter, if abnormal but not a big deal I have the MA call, if needing intervention or serious test result I call. 2-5 minutes
40	I used to try and log on to ECW about once a week when off service, but I no longer do this sadly

Figure 4. Test result handling for academic year 2019-2020 to present



Future plans

- In 08/2020 we introduced peer coaching in which senior residents were asked to coach struggling residents. All residents were trained on peer coaching and delivering feedback.