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Peer Observations: Enhancing Teaching Behaviors

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Peer Observations: Enhancing Teaching Behaviors

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on behalf of the
Education Strategy Committee
Division of Hospital Medicine
Department of Internal Medicine

March 18, 2019
Division of Hospital Medicine
Education Strategy Committee

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BACKGROUND

• Varying degrees of experience and training
• Evaluations from students and residents
  ▪ Feedback is grouped for anonymity
  ▪ Separated by months: some only see once a year
    ▪ Lack specificity, may be biased
    ▪ Learners may lack framework
• Potential solution: Peer observation and feedback
OBJECTIVES

1. Examine if peer observation with feedback results in improved teaching behaviors
2. Determine if observers and teachers found observation and feedback useful
3. Determine if the comfort with peer observation improved for observers and teachers after observation
METHODS

• Participants:
  - Teachers: Academic hospitalists on wards or consults
  - Observers: Peer academic hospitalists

• Setting:
  - Morning rounds on medicine wards
  - During medicine consult rounds

• Timing:
  - Once/week for each teacher
  - Approximately 1 hour
METHODS

• Peer observation process
  ▪ Observers determined by availability
  ▪ No teacher had same observer for consecutive observations
  ▪ Teams notified in advance
  ▪ Same-day post-observation feedback session
  ▪ Confidentiality of prior observations maintained

• Surveys
  ▪ Peer Observation and Feedback Tool
  ▪ Surveys of Teacher and Observer Perceptions
METHODS – Survey Development

Stanford Faculty Development Program

• 7 domains of effective clinical teaching
  • Learning climate
  • Control of session
  • Communication of goals
  • Promotion of understanding and retention
  • Evaluation
  • Feedback
  • Promotion of self-directed learning

• Used effectively to create evaluation tools for clinical teaching

March 18, 2019
<table>
<thead>
<tr>
<th>Teaching Observation Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider being Observed:</td>
</tr>
<tr>
<td>Provider Observing:</td>
</tr>
<tr>
<td>Date of Observation:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teaching Behaviors</th>
<th>Observed</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shows interest through body language, uses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>animated voice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Looks at and listens to learners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does not monopolize discussion, does not interrupt unnecessarily</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses learners' names</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invites learners to express opinions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recognizes clinical ambiguity, open to others' ideas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invites learners to bring up limitations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acknowledges own limitations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adapts leadership style to educational purposes (MS3, MS4, R1, R2, R3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does not digress, keeps on topic</td>
<td></td>
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<tr>
<td>Calls attention to time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriately paces conversation with patient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses examples (e.g., cases, self as model) and analogies</td>
<td></td>
<td></td>
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<tr>
<td>Defines any new terms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responds adequately to learners' questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has learners reformulate material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provides a chance for skill practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assigns/discusses literature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suggests expert consultations (appropriate, timely)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asks questions to stimulate reflection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observes learners' performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asks fundamental recall questions (requires recall of scientific/medical information, skills, or attitudes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asks fundamental analysis/synthesis questions (requires demonstration of understanding)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asks applied questions at recall or analysis/synthesis levels (requires application to a specific patient example or case)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asks learner to self-assess</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tells learner that performance is correct or incorrect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If agrees or disagrees with learners' opinions, gives reasons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses nonverbal cues like nodding</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Number of Participants in the group: Residents: ____; Medical Students: ____; Pharmacy: ____; NPs: ____; Others (specify): ______

NF present Yes ☐ No ☐

Number of Patients: (check box separately for each) ☐☐☐☐☐☐☐☐
STATISTICAL METHODS

- **Descriptive statistics**
  - *Continuous variables* = mean (SD)
  - *Categorical variables* = percentages

- **P-values of <0.05 statistically significant**
  - *Continuous variables* = T-test
  - *Categorical variables* = chi-square/Fisher’s exact test

- **Scoring of peer observation tool items**
  - 1 = not observed
  - 2 = sometimes observed
  - 3 = consistently observed

- **Teacher/observer surveys**
  - Five-point Likert scale
STATISTICAL METHODS

• **Mixed-linear growth curve models with crossed-design:** association of teaching skills with feedback

• **Crossed-design:** account for 3 types of correlation
  - For the same teacher on separate observations
  - For the same observer scoring a different teacher
  - For the same teacher scored by a different observer

• **Variables for adjustment:** age, gender, and years as attending of teachers and observers

• **Pearson’s correlation:** correlation between domains

• **Cronbach’s alpha:** internal consistency of tool items

All statistical analyses were performed using the Stata.MP version 14 for Windows (StataCorp LP, College Station, Texas)
STATISTICAL METHODS
Crossed-design Mixed Models

Observer 1
Teacher 1
Observer 2
Teacher 2
Observer 3
Teacher 3
## RESULTS

### Study Population Characteristics

<table>
<thead>
<tr>
<th>Variables</th>
<th>(N=27; O=70)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years, mean (SD)</td>
<td>37.5 (4.97)</td>
</tr>
<tr>
<td>Years as Attending, mean (SD)</td>
<td>6.36 (4.17)</td>
</tr>
<tr>
<td>Time spent in minutes, mean (SD)</td>
<td>73.0 (17.26)</td>
</tr>
<tr>
<td>Number of patients, mean (SD)</td>
<td>6.47 (2.38)</td>
</tr>
<tr>
<td>Number of Learners, mean (SD)</td>
<td>4.31 (1.2)</td>
</tr>
</tbody>
</table>
## RESULTS

### Study Population Characteristics

<table>
<thead>
<tr>
<th>Variables</th>
<th>(N= 27; O=70)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Climate, mean (SD)</td>
<td>2.64 (0.32)</td>
</tr>
<tr>
<td>Control of Session, mean (SD)</td>
<td>2.68 (0.33)</td>
</tr>
<tr>
<td>Promotion of Understanding &amp; Retention, mean (SD)</td>
<td>2.13 (0.54)</td>
</tr>
<tr>
<td>Evaluation, mean (SD)</td>
<td>2.26 (0.54)</td>
</tr>
<tr>
<td>Feedback, mean (SD)</td>
<td>2.73 (0.37)</td>
</tr>
</tbody>
</table>
## RESULTS

### Correlation between domains of peer observation tool

<table>
<thead>
<tr>
<th>Domain</th>
<th>LC</th>
<th>CS</th>
<th>PUR</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Climate (LC)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control of Session (CS)</td>
<td>0.39 (&lt;0.001)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promotion of Understanding &amp; Retention (PUR)</td>
<td>0.60 (&lt;0.001)</td>
<td>0.55 (&lt;0.001)</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation (E)</td>
<td>0.31 (&lt;0.001)</td>
<td>0.42 (&lt;0.001)</td>
<td>0.70 (&lt;0.001)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Feedback (F)</td>
<td>0.32 (0.006)</td>
<td>0.27 (&lt;0.001)</td>
<td>0.42 (&lt;0.001)</td>
<td>0.30 (&lt;0.001)</td>
<td>1.00</td>
</tr>
</tbody>
</table>
RESULTS – Key Findings

Effect of Peer Observations on Teaching Skills

- 27 teaching attendings involved
- 70 peer observations
- Observations per teaching attending: range 1-4
- All teaching behavior domains significantly correlated with each other
- Cronbach’s alpha = 0.81
- Statistically significant increase in 2 teaching domain scores
RESULTS – Learning Climate

[Diagram showing a scatter plot with green dots and a line indicating a trend in learning climate based on observation number.]
RESULTS – Promotion of Understanding & Retention

Observation Number

March 18, 2019
RESULTS – Improvement in Teaching Domains

<table>
<thead>
<tr>
<th>Domain</th>
<th>Unadjusted</th>
<th>Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Climate</td>
<td>0.08 [0.02, 0.15]; 0.009</td>
<td>0.09 [0.02, 0.15]; 0.007</td>
</tr>
<tr>
<td>Control of Session</td>
<td>0.04 [-0.01, 0.10]; 0.20</td>
<td>0.04 [-0.01, 0.10]; 0.10</td>
</tr>
<tr>
<td>Understanding/Retention</td>
<td>0.09 [0.01, 0.17]; 0.01</td>
<td>0.09 [0.02, 0.17]; 0.01</td>
</tr>
<tr>
<td>Evaluation</td>
<td>0.05 [-0.04, 0.16]; 0.20</td>
<td>0.05 [-0.04, 0.16]; 0.20</td>
</tr>
<tr>
<td>Feedback</td>
<td>-0.01 [-0.07, 0.07]; 0.90</td>
<td>0.002 [-0.06, 0.07]; 0.90</td>
</tr>
</tbody>
</table>
RESULTS

Surveys of Teacher Perceptions:
• Teaching attendings: 49 surveys
• Comfort level with observation: 79% 'very' or 'somewhat' comfortable
• Comfortable with future observations: 90%
• Feedback by observer: 'very' or 'somewhat' helpful in 92%

Surveys of Observer Perceptions:
• Peer observers: 33 surveys
• Completing tool: 'very' or 'somewhat' easy in 100%
• Providing feedback to peers: 'very' or 'somewhat' easy in 94%
• Valuable experience: 'very' or 'somewhat' helpful in 88%
STRENGTHS

• Limited observer bias: avoided same teacher-observer pairings
• Longitudinal study: assessed effect of feedback
• Objective tool used for observation and in guiding feedback
• Objective endpoint: observed teaching behaviors
LIMITATIONS

• "Not observed" category did not distinguish between
  ▪ Opportunity existed, but teacher did not demonstrate behavior
  ▪ No opportunity to demonstrate behavior
• Potential for Hawthorne effect: less likely over multiple observations
• Observer time commitment: questionable feasibility in heavily RVU-focused environment
CONCLUSION

• Feasible in bedside clinical teaching setting
• Result in significant and positive improvement in teaching behaviors
• Both teachers and observers found value in observation sessions
• Unmeasured benefits:
  ▪ Contributed to culture of learning among faculty
  ▪ Shared mental model of good clinical teacher
REFERENCES


Questions?

Thank you!