Near-Peer Teaching: Methodologies for Improving Acquisition and Retention of General Internal Medicine Knowledge in a Resident Learner Population

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Introduction

• Competence in ambulatory topics is essential for medicine residents, who are dissatisfied with traditional lecture formats. Near-peer teaching improves learner satisfaction, knowledge acquisition and is used in the development of residents as educators.

• The use of near-peer interactive models as a primary means of ambulatory curriculum implementation has not been well elucidated.

• The major aim is to determine if the use of interactive near-peer teaching will result in improved knowledge acquisition, comfort and increased skill development as an educator.

Methods

• Learners will be divided into groups of 6, with equal division of levels. Groups will remain fixed & be assigned 2 topics based on the American Board of Internal Medicine-Certification Exam® (ABIM-CE©). High-yield resources to aid lecture design will be provided (Table 1).

• The curriculum will repeat twice throughout residency. The PGY1s will develop a case presentation, selecting key questions. The PGY2s will create a content-based session and the PGY3s will use evidence-based medicine to answer questions from the case. All portions will be interactive.

• Residents will receive didactics on learning models and their implementation. An attending physician will serve as moderator (Figure 1).

• Residents will complete pre and post ABIM-CE© style question sets and surveys assessing comfort with topic diagnosis and treatment. Audience attendees will complete a survey evaluating quality, learner engagement and effectivenss. Presenters will receive feedback from the survey and attending.

• Satisfaction, self-evaluation as an educator and comfort with literature interpretation will be assessed at 4-month intervals. Knowledge retention will be determined by review of in-training examination (ITE) scores.

Data Analysis

• All data will be de-identified.

• Improvement in subjective and objective measures pre and post the sessions will be evaluated.

• Correlation between subjective and objective measures and relationships to retention will be investigated.

• Qualitative and quantitative measures comfort as an educator will be explored.

• Comfort will be measured on a 5-point Likert scale.

• Paired samples t-tests will be used for pre and post comparisons and bivariate correlations completed using Spearman’s rho.

Table 1

<table>
<thead>
<tr>
<th>Topic</th>
<th>Reference</th>
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</thead>
<tbody>
<tr>
<td>Heart Failure</td>
<td>1. 2017 ACC/AHA/HFSA Guidelines</td>
</tr>
<tr>
<td></td>
<td>2. NEJM Rotation Prep</td>
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<td></td>
<td>3. UpToDate</td>
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<tr>
<td>Cardiovascular</td>
<td>1. Lipid Management Hopkins PEAC¹</td>
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<tr>
<td>complications</td>
<td>2. CAD/ACS NEJM Resident 360 Rotation Prep</td>
</tr>
<tr>
<td>(Stroke, ACS)</td>
<td>3. Stroke NEJM Resident 360 Rotation Prep</td>
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<td>and lipid disorders</td>
<td></td>
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<tr>
<td>Asthma and COPD</td>
<td>1. Asthma Diagnosis, Classification, and Management Hopkins PEAC</td>
</tr>
<tr>
<td></td>
<td>2. GOLD COPD Guidelines</td>
</tr>
<tr>
<td></td>
<td>3. GINA Asthma Guidelines</td>
</tr>
<tr>
<td></td>
<td>4. COPD and Asthma NEJM Resident 360 Rotation Prep</td>
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</tbody>
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¹ : Johns Hopkins Physician Education & Assessment Center

Table with high-yield resources for lecture design.

Results

• Project Ongoing.

• We expect increased learner engagement via near-peer teaching will result in significant improvements in topic comfort and competency.

• Results will be sustained for both the presenters and the attendees.

• We anticipate high levels of learner satisfaction and continual improvement in educational skills as assessed by self-reflection and audience survey.

• We expect improved performance and knowledge retention on ambulatory topics covered in the ITE and increased comfort with interpretation of primary literature.

Conclusion

• Adult learning theory supports the use of supervised interactive near-peer teaching.

• Using this as a novel primary model for ambulatory curriculum delivery will result in improved learner engagement, satisfaction, knowledge acquisition, retention, comfort and increased skill development as an educator.

References