Case-Based Learning in Family Medicine Residency Training
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Introduction
• BUMC-SC Family Medicine Residency is a university-based residency program, serving a diverse population of patients in Southern Arizona.
• Through surveys of our family medicine residents, a lack of formal teaching on the inpatient medical service was identified:

Hypothesis: Case based learning would help residents learn in an environment similar to their work environment and having a case database of common inpatient family medicine problems would help facilitate better teaching by attending physicians.

Methods
• Designed a case-based teaching module to be used by faculty as a teaching guide or as a self-study module for residents
• Selected Acute Renal Failure as a commonly encountered inpatient family medicine problem
• Designed a case to teach the basics of acute renal failure
• During a didactic session with 17 residents, each of the residents was given a 3 question pre-test
• Residents were then divided into 2 groups, with each group having equal numbers of 1st, 2nd, and 3rd year residents
• Group A: 8 participants reviewed and discussed the case as a group, with an inpatient attending physician facilitator
• Group B: 9 participants reviewed the case individually
• After case: the same 3-question post-test was given to participants in each group

Results
Group A:
• Average number of questions missed on the pre-test was 0.625
• Average number of questions missed on the post-test was 0.375
• 40% improvement in score for the overall group

Group B:
• Average number of questions missed was 1.11 on the pre-test
• Average number of questions missed on the post-test was 0.67
• 60% improvement for the overall group

Combined Data:
• Both groups showed improvement after having reviewed the case
• Feedback from both groups indicated that some points were emphasized in the explanation of the case, but were not elucidated during the case or in any of the questions
• Participants asked that we incorporate additional questions to make those points more concrete
• Overall, the activity was well received by both the residents and the faculty participant

Conclusions
• Case-based learning is a feasible, acceptable and effective approach to teaching common inpatient medicine topics
• Cases can be taught in a group setting with a faculty facilitator or through self-study
• Education of residents could be improved by having a variety of common cases available for residents for self-learning as well as for attending physicians to lead discussions
• Having a database of common inpatient medicine cases would be beneficial for both faculty facilitators and residents

References
3. Hoffman, Kimberly PhD; Hosokawa, Michael EGD; Blake, Robert Jr MD; Headrick, Linda MD, MS; Johnson, Gina. "Problem-Based Learning Outcomes: Ten Years of Experience at the University of Missouri—Columbia School of Medicine." Academic Medicine 81.7 (2006): 617-625.