Impact of Novice and Advanced Assistants on Clinical Efficiency of Emergency Physicians


**Background:** EM physicians operate as a team with assistance from students, physician assistants (PA), residents and other health care providers. A concern is how novice and advanced assistants impact the clinical efficiency of physicians.

**Study objective:** We hypothesize that advanced assistants will positively impact inefficient physicians more than efficient physicians, while novice assistants will negatively impact inefficient physicians more than efficient physicians.

**Methods:** This was a retrospective review of EM attending physicians’ clinical efficiency with no assistant, a novice assistant (medical/PA students or EM interns), or an advanced assistant (PA or EM residents). The ED electronic medical record was reviewed for a year at an urban level 1 trauma center with a new EM residency. Clinical efficiency was defined as ED length of stay (LOS) for discharged patients. Mixed linear models compared log-transformed LOS between patient visits with and without assistants, on average, and differences in these effects among physicians.

**Results:** Nineteen physicians covering a total of 44,839 discharged patient visits were included for analysis. With novice assistants, LOS was 60% longer (95% CI: 44%, 77%) compared to no assistant, with similar results for 17 of the 19 physicians, while 2 physicians had essentially no change. LOS with advanced assistants was not different from no change (95% CI: -11%, 8%); however, there was significant variation among physicians. 6 physicians saw significant increases, 4 saw significant decreases, and 10 saw no change in their LOS. The 6 physicians with significant increases also had some of the shortest median LOS with no assistants, while those with decreases were physicians who had the longest median LOS with no assistants.

**Conclusion:** Novice assistants almost uniformly reduced attending physician efficiency, while advanced assistants decreased the differences between more and less efficient physicians.