**General Comments**:

This study was published as a short report in the Journal of Infection Prevention in 2016. It observationally examines how hand hygiene adherence among physicians and nurses from two ID units in a hospital in Florence, Italy, one of which previously received hand hygiene education and appointed leaders to promote hand hygiene adherence, is impacted by the merging of these two units. After the merger, focus groups were also conducted with doctors and nurses, respectively, to determine perceptions of hand hygiene and barriers to hand hygiene adherence. I thought it was really smart of the authors to couple their observational studies with separate focus groups in order to provide more context for discrepancies in hand hygiene adherence. I also thought that this study was written in a way that was easy to digest, which was great, but it would benefit from some small additions and revisions. Overall, I think this study is very interesting and certainly has implications for reducing healthcare-associated infections.

**Abstract**:

Overall, the abstract does summarize the article fairly well. In the background, I would suggest adding a statistic about the rate of HAIs as they related to hand hygiene to make the scope of the issue clearer rather than just saying “they are common and harmful to patients.” I also think the methods section would be stronger if it were a bit more specific and broken down into one or two more sentences. However, the results and conclusion sections are written well.

**Introduction**:

The review of literature is properly sourced and does a decent job of providing enough background information to understand and justify the research question. As mentioned previously, it might be more beneficial to include a statistic here to contextualize the issues instead of vaguely saying that there has been “an abrupt and notable increase in the proportion of carbapenem-resistant *Klebsiella pneumoniae*.” However, this section provides a good overview of the hand hygiene intervention (in concordance with the WHO Five Moments of Hand Hygiene) conducted at this hospital in previous years. I like that they monitored hand hygiene adherence over this time frame, but it might also have been beneficial to see statistics on how the rates of HAIs changed as a result of this intervention as well. Lastly, the research question is clear, but I think they could have been more direct as to how this research responds to a gap(s) in the literature. For instance, I would suggest they highlight their focus group efforts more since that data contributes a better understanding of how doctors and nurses feel about hand hygiene adherence and could inform future hand hygiene interventions to reduce HAIs.

**Methods**:

Overall, I thought the methods section was very straightforward, but that it could have been more informative. I like the overarching idea of comparing the two ID units hand hygiene adherence rates before and after merging, but I would have liked to know more about the doctors and nurses in each unit. For instance, do they both do the same work and serve the same populations? Do the staff in unit 1 and unit 2 have equivalent years of training or are there more/less trainees in one of the units? Basically, I would have liked to know that the two units are equally staffed and qualified (with the exception of skills/knowledge gained from the intervention) to rule out that individuals themselves weren’t influencing adherence rates. One strength to this study is that a single person observed and collected data on adherence and that they utilized the same methods as their previous assessment. Additionally, they provided a strong “case definition” for proper hand hygiene prior to contact with patients, though it might also be a drawback that they only looked at the first of the Five Moments of Hand Hygiene. Also, I was slightly confused as to whether or not the providers new they were being observed because the methods section has a statement that says the “providers were informed…”, but the discussion section says that the “focus of the observation was not disclosed to providers….” This should be clarified.

As I previously mentioned, I really like that the focus groups were conducted in addition to the observational studies. I also thought that having separate focus groups for doctors and nurses was a strength to this study. However, I wish the authors had provided a little bit more information about the focus groups (e.g. when, where, and how long were they, what questions were asked as prompts, who attended, how were they contacted, and was there a good mix of individuals from units 1 and 2?). I also wonder what, if any, effect the director of the combined unit (who was also the director of unit 1, which received the intervention) being the focus group moderator had on the focus group discussion. In other words, were doctors and nurses potentially inclined to speak favorably rather than honestly? Also, would they have brought up any other feelings about hand hygiene or improving adherence if there were a third-party moderator?

Lastly, the statistical analytic plan for this study appears to be straightforward and sound. They used Pearson χ2 testing with two-tailed P</= 0.05 being statistically significant). I would have liked to know more about how the focus group data were analyzed, though.

**Results**:

Overall, the results are interesting as well as clear and comprehensive. My first suggestion for this section, however, is to re-write the first paragraph because it is a bit hard to follow with all the years and numbers. The last two sentences are good, though! The focus group section is written well and provides great data about doctors’ and nurses’ perceptions of hand hygiene and how to improve adherence. I would, however, suggest that the authors be more specific. For instance, what exactly did the doctors and nurses mean when they mentioned “lack of education?” This is where it might be interesting to know who attended the focus groups because doctors and nurses from unit 1 did received education on hand hygiene. You might expect that those from unit 2 would say this, since they didn’t receive the intervention. If those from unit 1 are also saying they need more education, you might want to know what additional education they would have liked to receive or thought they needed. Additionally, what did nurses mean when they said “expectations were unclear” and why might they be unwilling to assign leaders to enforce hand hygiene adherence? These are things the authors might want to tease out in the methods or further address in the discussion.

The results do cohere to the research question they put forth at the beginning of the paper, however, I felt like the research question focused more on the statistics (i.e. hand hygiene adherence rates pre- and post-merger). What was more interesting here, and what really contributes to gaps in the literature however, was the focus group data. I think that the authors should consider reframing the research question so that it also specifically addresses how perceptions of hand hygiene among doctors and nurses might influence hand hygiene adherence.

Overall, I like Figure 1. It is clear and precise and directly relates to the results and the research question. I think it would have been interesting if they had delineated between providers of unit 1 and unit 2 after the merger as well to account for increases and decreases in adherence by unit. I would have also liked to see a table or figure that summarizes the data from the focus groups (e.g. main themes, quotes, etc.).

**Discussion**:

Overall, the discussion section does appropriately contextualize the findings, clearly states some of the study’s limitations, and mentions its public health significance. This article clearly adds to the existing literature, but I wish the authors would have more confidently stated how earlier in the study as well. Contrary to most studies, this study shows nurses as having lower overall compliance than doctors. To explain this, they pointed out that after the merger nurses did not have a unit leader to promote hand hygiene adherence. Additionally, the hospital failed to provide regular monitoring of hand hygiene and feedback about how to improve adherence. From this study, the authors are able to say that sustainable hand hygiene adherence interventions need to focus on provider education, targeted behavioral change, and accountability, which can be established by identifying unit leaders to promote and monitor hand hygiene adherence.

Overall recommendation for this manuscript – Provisional acceptance (some minor changes required)