The following appeared in a memo from the director of a large group of hospitals. "In a laboratory study of liquid antibacterial hand soaps, a concentrated solution of UltraClean produced a 40 percent greater reduction in the bacteria population than did the liquid hand soaps currently used in our hospitals. During a subsequent test of UltraClean at our hospital in Workby, that hospital reported significantly fewer cases of patient infection than did any of the other hospitals in our group. Therefore, to prevent serious patient infections, we should supply UltraClean at all hand-washing stations throughout our hospital system."  
Write a response in which you examine the stated and/or unstated assumptions of the argument. Be sure to explain how the argument depends on these assumptions and what the implications are for the argument if the assumptions prove unwarranted.

Essay Response:

The director reaches the conclusion that UltraClean must be used at all hand-washing stations throughout their hospital system to prevent serious patient infections. This conclusion is based on the premise that UltraClean performed better than the existing hand soaps in reducing bacteria populations, and that its use led to a lower number of reported infections. However, the argument fails to address three unstated assumptions, which, if false, could drastically impact the veracity of the director’s logic.

First, the director makes the assumption that the laboratory study was performed in a fair manner, and that the 40% greater reduction in bacteria populations is a significant figure. It may be the case that the bacteria cultures subjected to the test were not representative of the bacteria that leads to infections when transmitted. A related possibility is that the bacteria used in tests were ones that did cause infections, but not to a serious degree. In this case, the director’s claim that serious infections could be prevented using UltraClean would be false. It may also be the case that the ‘concentrated’ solution of UltraClean used by the study was diluted for use in hospitals, and hence may not provide the same ‘40%’ effect for patients. If any of these statements are found to be true, then the laboratory study would not be a reliable source of information in justifying the supply of UltraClean to all hospitals. In fact, it may then be possible that infections could increase with the supposed withdrawal of other, more effective antibacterials.

Second, the argument assumes that the lower numbers of reported infections are significant, and that this information is accurate, and is a cause of UltraClean. There is a chance that the ‘lower’ numbers are just single-digit reductions, or that the hospital in Workby failed to report accurate numbers in their reports. The hospital’s reports were not stated to have contained information on the exact cases of infections: Perhaps, most of the reported cases of serious infections were despite the use of UltraClean. Without a comprehensive study to assess exact cases and the potential positive/negative correlation between the use of UltraClean and the number of infections, we cannot conclude with certainty that the UltraClean solution was responsible for the lower numbers of infections.

Finally, the argument fails to consider if there is any other cause for infections, and if the use of UltraClean would surely mitigate them all. It is a possibility that the majority of infection cases are related to viruses or other non-bacterial sources. In this case, even if the laboratory study’s results were true and its conclusions were valid, it would not matter at all – UltraClean may fail to prevent viral infections, which could be more severe. Perhaps, other soaps do a better all-round job of preventing a wide variety of infections, while UltraClean is only good at resolving a single class of these infections. In this case, the argument falls apart, due to its inadequacy in considering any of these possibilities.

In conclusion, the argument, as it stands currently, is considerably flawed, and fails to address multiple unstated assumptions that it makes along the way. The director should provide substantiative evidence, with perhaps a more comprehensive laboratory study, that truly depicts that the potential correlation between UltraClean and declining infection rates also applies to its effect in combating these infections. If the director can prove that UltraClean is better than existing soaps in more ways than not, then they can draft a better argument.