Medical Floor staff and Medical Floor Physician. The transparency and ease of understanding of the model will provide all empower all interested stakeholders to take part in process improvement.

Beyond its value in facilitating communication, the computational nature and ease of extendability will allow others to build off the model to understand tangential phenomena. This also means that the model can be improved by integrating real hospital data into the model.

Similarly, the use of machine learning methods and GIS may become important when trying to optimize the system. Machine learning may be important to select a strategy that is best suited to reduce release times. GIS could be used to help define spatial constraints in the model. For example, it may be possible to upload a floor plan of the ICU of interest and use image recognition to define spatial constraints.

Agent Based Modeling of this phenomena has several distinct advantages over alternative simulation methods. First, many model paradigms require extensive data collection and can take years to process the health data in a way suitable for simulation. In addition, health data is notorious for being difficult and lengthy to process. Second, other modeling paradigms like monte carlo simulation or discrete event optimization do not allow interested stake holders to gain insight from the model construction itself. Specifically, interested stakeholders have to rely more on the modelers to have correct assumptions. With ABM, the assumptions are clear and up for debate.

The current model to analyze the operational effectiveness of patient release is often judgement based that depends on expert judgement. While timely, expert judgement often comes feeling and experience rather than a stated assumption. To me, it appears exceedingly clear that Agent Based Modeling will aid in the re-engineering of the patient release workflow.