PROJECT TITLE: The Impact of Goals of Treatment on Mortality Outcomes

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The Problem:
Sixty percent of Americans die in acute care hospitals - hospitals we, Sound Physicians, work in. Even though "nothing can be said to be certain, except death and taxes", we in healthcare must focus on mortality as one of measurements of care – it's appropriateness, inevitability, and nature. All these components are patient-centered. However, identification of the goals of care and patient's wishes in the ICU frequently happens after several days of aggressive, uncomfortable and costly interventions. We hypothesized that identification of goals of treatments earlier will not increase mortality and will provide patients and families with patient-centered compassionate care.

Project Goals:
The project was designed as a retrospective chart review. We collected demographic and outcomes data on all consecutive admissions to our ICU for Q2 2012, 2014 and 2016. We chose to compare the data from the same quarter to eliminate seasonal variation in admission diagnoses. We chose 2012, 2014, and 2016 because of changes that took place in how our ICU was run:

- In 2012, ICU coverage was provided by a local Pulmonary Critical Care group.
- By 2014, The Intensivist Group (TIG) became the provider of critical care services, focusing on a Multiprofessional Critical Care model practicing "Right Care, Right Now".
- In 2016, the hospital started a Palliative Care service.

The outcomes compared were: 1) mortality rates, 2) ICU LOS, 3) Hospital Length of Stay (HLOS).

Actions Taken:
With the change to TIG as the providers and the later addition of Palliative consultations, there were three main differences in ICU coverage:

1. Goals of care were identified immediately upon admission to ICU.
2. Intensivists were physically present in the Unit or readily available.
3. Daily meetings took place with families of seriously ill patients.

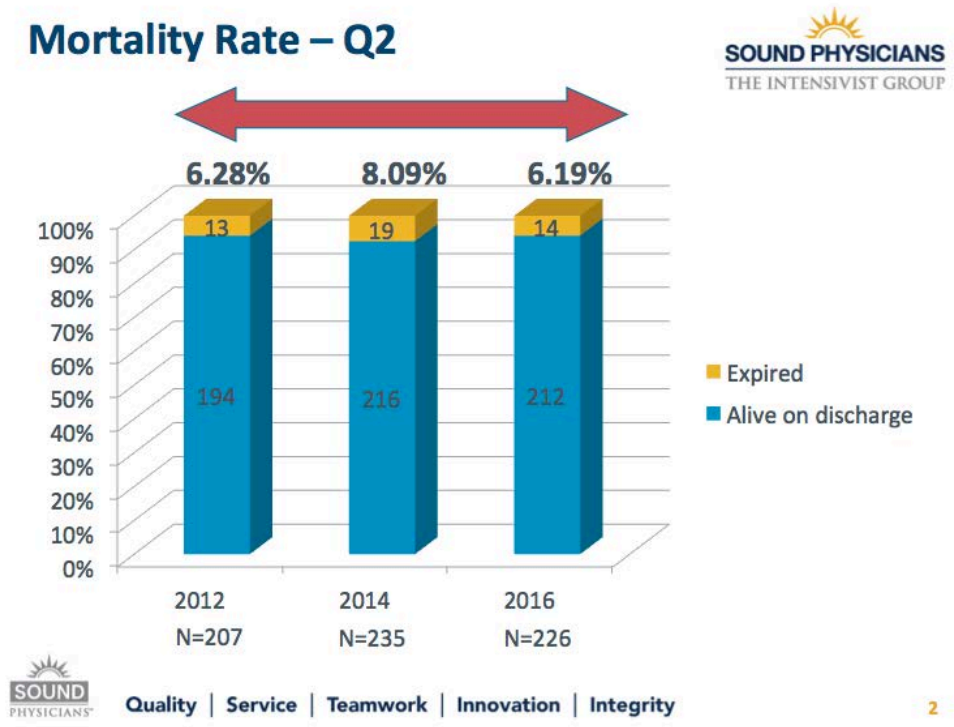
Results:

- The number of ICU admissions in 2012, 2014 and 2016 were 207, 235 and 226 respectively. The mortality rate in 2012 was 6.28%, compared to 8.09% in 2014, and 6.19% in 2016. This difference was not statistically significant (p-value 0.82). *(See Graph 1)*
- We compared ICU LOS and overall hospital LOS for the expired patients. In 2012, before TIG, the ICU LOS of expired patients was 3.7 days with the overall HLOS of 7.2. In 2014, the ICU LOS of expired patients decreased to 2.4 days, while the HLOS decreased to 3.8 days. This trend continues into 2016; the ICU LOS of expired patients was 2.07 days, and a more drastic decrease in overall HLOS from 7.2 days in 2012 to 2.33 days in 2016 – a statistically significant difference of almost a full 5 days. *(See Graph 2)*

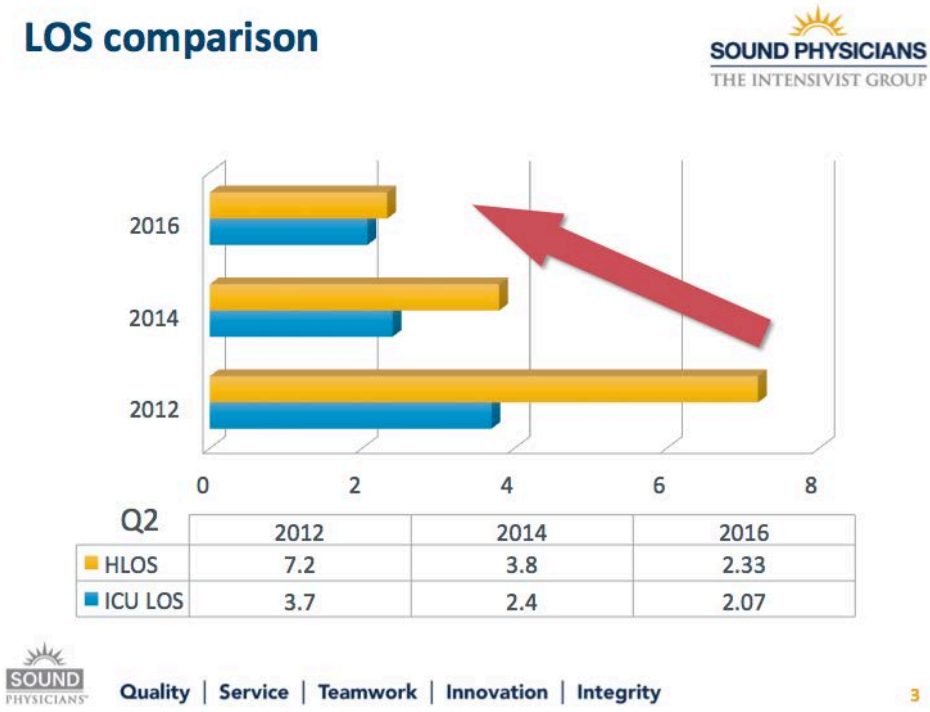
Lessons Learned:
As expected, the admission and mortality rates were similar. Identifying goals of care and listening to the patients and their families did not increase the mortality rates. However, the striking difference was in the LOS of expired patients. It is clear that Intensivist-led model and Palliative care consultations showed a considerably shorter LOS. In other words, the patients who could not recover and had irreversible physiology were allowed to die sooner. The implications are tremendous if we take into consideration not just the cost savings, but more importantly - the human factor - decreased pain and suffering for the patient and family. As a matter of fact, the rate of patients who expired on comfort care rose from 61.6% in 2012 to 94.7% in 2014 and to 100% in 2016. Our study indicates that a patient-centered Intensivist-led ICU model is the foundation of compassionate care. *(See Graph 3)*

Lesson learned:
In some instances we cannot reverse the life trajectory and patients will die. However, death should never be painful. We, physicians, have full control over that. Paraphrasing Shakespeare "*the fault is not in (patients') stars, but in ourselves*".

Graph 1: Q2 Mortality Rate



Graph 2: LOS Comparison



Graph 3: Data on All Expired Patients