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A Community Hospital Telemedicine Program- Increasing Utilization over a 4 year Period

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Introduction:

ICU telemedicine has proven to be a useful modality to improve access to Intensivist directed care. Previous experience has shown that implementation is not uniform. This study details increasing telemedicine utilization during a 4 year period and outlines program structural changes that improved utilization.

Methods:

The study hospital has a 16 bed medical surgical ICU. It is staffed by a 12 hour day Intensivist program with telemedicine coverage at night. There is a mandatory intensivist consult for all admissions. The telemedicine system utilizes a portable cart that allows visualization of the patient and connectivity to the EMR and PACS systems. Patients seen by telemedicine are managed by direct communication and by order entry into the CPOE system. Data was collected for a four year period. At the beginning of year 4 program structural changes were put in place.

Results:

During the initial 3 year period studied there were a total of 297 new patient seen by the teleintensivist. This increased to 265 in year 4, a 265% increase ($p < .01$). At the beginning of year 4 several structural changes were made to increase utilization and compliance with a mandatory consultation on admission to the ICU of new patients. The following initiative was put in place:

1. A mandatory evening MDR rounds with the ICU charge nurse with "walk rounds" on all critical patients.
2. Immediate activation of the teleintensivist once the decision for ICU admission was made.
3. Case review daily by program medical director and review with physicians, nursing and administration.

The common diagnoses were respiratory 31% of cases in the first 3 years, 39% in year 4. In years 1-3 sepsis 13%, cardiac 12%, neuro 11%. In year 4 neuro 26%, GI 11%, sepsis 8%. ICU LOS during the study was 4.6 days not significantly different from all ICU

admissions (4.4). ICU mortality was 8.8% for the study period vs. 8.4% for all ICU admissions.

Conclusions:

The use of telemedicine in critically ill patients improves outcomes. An improvement in utilization can occur if a strong structural process is put in place to manage ICU admissions.