

POSTER ABSTRACTS

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Evaluating Care Delivery 07

Developing Measurement Sets to Monitor Emergency Department Crowding

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Background: Emergency department (ED) crowding has become a challenging care delivery issue throughout the U.S., yet we lack valid measures to define and monitor the problem. Our objective was to develop measurement sets that will be useful for monitoring ED crowding.

Methods: We recruited 62 experts with diverse relevant expertise to create and review measures of ED crowding using a modified Delphi consensus process. 113 measures were proposed by the expert panel. A core group of 10 investigators reviewed the initial measures using group consensus methods. The remaining 30 measures were then rated by all 62 experts using a magnitude estimation rating technique on a Website. Each measure was rated for feasibility, affordability, early warning potential, long-term planning potential, operational usefulness, and research potential. The core group then designed two measurement sets for monitoring ED crowding based on reviewer ratings. One set was designed for long-term planning (LTP) needs, and the other was designed to provide early warning (EW) about impending crowding conditions in real time. Each set measures concepts relevant to ED crowding.

Results: Concept [proposed measures]

LTP Measurement Set

1. Demand for ED care [Mean number (#) of patients (pts) per staffed bed hours]
2. Pt complexity [Mean # of pts triaged to each acuity category]
3. ED efficiency [ED throughput time for admitted vs. discharged pts]
4. ED capacity [a) Percent of pts who leave without treatment complete; b) Hours of ED divert]
5. Hospital (HOS) capacity [a) HOS census; b) HOS admission source]
6. HOS admission process [ED boarding time]
7. HOS discharge process [Discharge cycle time]

EW Measurement Set

1. Demand for ED care [# of new pts per hour]
2. Pt complexity [# of new pts by acuity category per hour]
3. ED workload [Percent ED occupancy]
4. ED efficiency [Pt arrival to ED bed placement time]
5. HOS capacity [Supply/demand status report]
6. HOS admission process [ED boarding burden]

Conclusions: A diverse national panel of experts proposes these measurement sets to monitor ED crowding. Rigorous testing is needed to confirm their feasibility, reliability, and value.