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CONFERENCE ABSTRACT

Defining and Evaluating Norms for Health and Social Service (HASS) Needs based on a Simple Segmentation Tool (SST)

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Jia Loon Chong[1]

1: Duke-NUS Medical School, Singapore, Singapore

Introduction

As there is no simple tool for assessing HASS needs we developed the SST based on Lynn et al's "Bridges of Health" framework which allows providers to assign patients into one of 6 health categories, termed Global Impression (GI) segments: GI-1 healthy, GI-2 chronic condition, asymptomatic, GI-3 chronic condition, symptomatic, GI-4 long course of decline, GI-5 limited reserve, and GI-6 short decline before dying. The SST is a validated and practical tool with good inter-rater reliability and predictive validity for emergency department (ED) visits, hospitalization, and mortality.
Our primary objective was to establish HASS norms based on SST inputs and to evaluate concordance between norms and utilization within 3-months post hospital discharge.

Methods

First, 9 experts developed HASS norms for 12 basic services, based on SST elements, using a supervised modified-Delphi methodology. HASS needs fulfilment was deemed essential if the experts attributed an unfilled need to a major adverse event: unplanned hospitalization, ED visit, or death. Second, acute care hospital clinicians assessed all consenting patients. Third, we assigned assessed patients a set of HASS needs based on an algorithm representing expert-defined normative judgements. Fourth, we visited subjects 3-months post discharge to determine the types of HASS utilized. Lastly, we compared HASS utilization with norms to calculate proportion of met needs.

Results

During index hospitalization, majority (445/809, 55%) were in the more severe categories (GI-3,4,5, or 6). Median number of normative HASS needs per individual was 3. Most common needs were care coordination, rehabilitation-type skilled services, and medication management. Median number of needs and percentage of unmet needs increased with GI category, ranging from 0.5 needs, 14% unmet for GI-1, to 5 needs, 73% unmet for GI-6. Evidence did not suggest integrated needs fulfilment: the likelihood that any single need was met was 87%, regardless of required needs.

Discussion

The SST illuminated the volume of HASS needs within this complex patient population. While probability of individual needs met was relatively high (87%, consistent with the "high bar" definition of "need"), probabiliy of all needs met appeared independent of the number of needs. This suggests a relative lack of service needs coordination. Data collection is ongoing to determine the rates of adverse outcomes as a function of unmet needs.

Conclusions

The SST approach identifies opportunities for service improvement, and provides a rationale for developing tailored packages of care to meet unique needs in specific patient clusters. New knowledge generated from this study will enable planners and health care practitioners to make better decisions to benefit Singapore's aging population.

Lessons learned

Clinicians will respond positively to a user-friendly segmentation tool; the SST is a promising core measure relevant to clinical action, health care planning, and program evaluation.

Limitations

The study was performed in a single large acute care hospital in Singapore.

Suggestions for future research

Subsequent research areas include: evaluation of a SST version to identify HASS needs among individuals unexposed to clinical encounters, evaluation of the SST/HASS algorithm approach in other global settings, and testing a strategy which facilitates algorithmic improvements.