

# Components of Care Vary in Importance for Overall Patient-Reported Experience by Type of Hospitalization in the HCAHPS Survey

Marc N. Elliott, PhD  
David E. Kanouse, PhD  
Carol A. Edwards, BA  
Lee H. Hilborne, MPH, MD

RAND

APHA  
Washington, DC  
November 5, 2007

# Background

- Patients are hospitalized for a wide variety of conditions and procedures
- Patient experiences with hospital care may depend on the type of hospitalization

# Research Objective

Determine whether the contributions of composite measures of patient experience to overall hospital ratings on the HCAHPS Survey vary by type of hospitalization

# Analysis Based on 2002-2003 HCAHPS 3 State Pilot

49,812 English- or Spanish-speaking adult patients

- with non-psychiatric primary diagnoses
- discharged to home between December 2002 and January 2003
- after an inpatient admission lasting at least one day
- in 132 general acute care hospitals in three states: NY, MD, AZ

# Construction of 24 Hospitalization Types

- We defined 24 hospitalization types using a combination of
  - major diagnostic category and
  - service line (medical, surgical, or obstetrical)
- Pooling across categories when necessary to achieve adequate sample size ( $n > 180$ )
- Largest 3 categories are:
  - OB/GYN ( $n=4612$ )
  - CIRCULATORY, medical service line ( $n= 2083$ )
  - MUSCULOSKETAL, all service lines ( $n=1858$ )

# Composites Measure Domains

- 6 composites the same as the current HCAHPS instrument, but
  - more items on each composite
  - one composite (\*) is split into separate items on the current survey
  - Communication with nurses
  - Communication with doctors
  - Responsiveness of hospital staff
  - Pain management
  - Communication about medicines
  - Discharge information
  - Cleanliness and quietness of hospital room\*
- Overall 0-10 Hospital Rating was elicited after the items constituting the composites

# **Inferring Importance of Composites to Patient Evaluations of Hospital**

- Directly asking about importance usually elicits responses that all aspects are important
- We infer the implicit importance of each composite to overall patient assessments of hospitalization using a regression model

# Linear Regression Model

- We calculated *simultaneous partial correlations*
  - between composite scores and an overall hospital rating
  - controlling for patient demographics
    - Similar to patient-mix variables described earlier



# Overall importance of composites varies

- Communication with Nurses was the most important composite overall to patient hospital ratings
  - average partial correlation of 0.34 (range 0.17-0.49)
  - statistically significant ( $p < 0.005$ ) and among the three most important for all 24 hospitalization types
- Discharge Information was the least important overall to patient hospital ratings
  - average partial correlation of 0.05
  - statistically significant for 10 of 24 types ( $p < 0.05$ ) and among the three most important for only one ( $r = 0.16$ )

# Importance of Composites Varies by Hospitalization Type

- Partial F-tests of interactions revealed significant ( $p < 0.05$ ) variation in partial correlations by hospitalization type for 5 of 7 composites
  - Largest variations observed for Communication with Nurses, Communication with Doctors, and Pain Management ( $F > 2$ ,  $p < 0.005$ )

For example-

- Urological (Kidney/Urinary tract) Surgery
  - Communication about Medicines, Pain Management, and Communication with Nurses were most important (in that order)
- Infectious disease hospitalizations, such as tuberculosis
  - Communication with Nurses was much more important than the next two (Pain Management and Discharge Information)

# Summary of Composites

After controlling for patient demographics and other aspects of care,

- **Communication with Nurses** is important to overall patient hospital experience
  - for all types of hospitalizations, but
  - especially for some types
- **Responsiveness of Hospital Staff and Cleanliness and Quietness of Hospital Room** are
  - uniformly of moderate importance
- **Communication with Doctors and Pain Management**
  - matter for most types and are
  - especially important for at least six of 24 hospitalization types
- **Communication about Medicines and Discharge Information**
  - matter for half of 24 hospitalization types and
  - are important for a few

# Implications for Measurement

- Varying associations of some aspects of patient experience with overall assessments for certain types of hospitalizations suggest that some items may be difficult to answer for some stays
  - Qualitative research could investigate this possibility in the combinations of domains and hospitalizations identified
  - Quantitative research could test whether the identified hospitalizations improve hospital-level reliability for the composites in question

# Implications for Quality Improvement

- Quality improvement efforts can be targeted to those aspects of patient experience that matter most for each type of hospitalization
  - Would require that a hospital or vendor merge their DRG codes with HCAHPS data
- Hospitals and vendors can engage in similar internal analyses by marrying HCAHPS and administrative data

# Comments?

- [Marc\\_Elliott@rand.org](mailto:Marc_Elliott@rand.org)