Socioeconomic Status and Hospital Readmissions

National Health Policy Forum
June 21, 2013

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Socioeconomic status (SES) affects readmissions

• Patient demographic factors are related to readmissions risk.
  – Non-white race, low education, low income, unemployment associated with pneumonia readmissions
  – Non-white race, low income, unemployment associated with heart failure readmissions

• Hospitals serving vulnerable populations are at greater risk of readmissions penalties.
  – Predominantly minority patient mix
  – Hospitals in counties with low median income
  – Safety-net hospitals

St. Louis region has wide variation in socioeconomic status

• St. Louis City
  – $34,403 median household income
  – 26% persons below poverty
  – Ranked last in state in social and economic health factors

• St. Louis County
  – $58,630 median household income
  – 9.7% persons below poverty
  – Ranked in top quartile within state in social and economic health factors

• St. Charles County
  – $71,458 median household income
  – 4.9% persons below poverty
  – Ranked first in state in social and economic health factors

*U.S. Census (2007-2011); Robert Wood Johnson Foundation, University of Wisconsin Public Health Institute, County Health Rankings and Roadmaps.*
Wide variations in SES also present at neighborhood level

Example: Delmar Boulevard
Immediately North of Delmar Blvd
$18,000 median family income
$73,000 median home value
10% adults with a bachelor’s degree
98% African-American

Immediately South of Delmar Blvd
$50,000 median family income
$335,000 median home value
70% adults with a bachelor’s degree
73% White

Barnes-Jewish Hospital
Key issues related to readmissions prevention and SES

• Neighborhood SES affects calculated readmission rates and penalties.
• Measured SES variables may be proxies for other factors affecting readmission risk.
• Neighborhood SES factors important for readmission prevention.
• Neighborhood SES factors are not captured in standard administrative data.
1. Neighborhood SES affects calculated readmission rates and penalties

• Inclusion of census tract SES factors changed calculated hospital risk-standardized readmission rates
  – Statewide analysis of 2009-2012 Medicare Fee-For-Service discharges for the three conditions currently penalized
  – Substantially smaller differences in readmission rates among hospitals

• Inclusion of census tract SES factors changed readmission penalties
  – Similar proportions of hospitals penalized
  – Significantly smaller average penalty size
Risk-standardized heart failure readmission rates for Missouri hospitals

Adding census tract SES to the model reduced the difference in hospital rates by 47%. Similar results were found for acute myocardial infarction and pneumonia.
2. Measured SES variables may be proxies for other factors

- Example: Hospital closures in St. Louis region by race of zip code residents
St. Louis Metro Area Hospital Closures Over Time by Race of Zip Code Residents

Percent Black

0% - 9.6%  9.7% - 27.1%  27.2% - 44.3%  44.4% - 71.9%  72% - 97.1%

closed hospital
St. Louis Metro Area Hospital Closures Over Time by Race of Zip Code Residents

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[Map showing hospital closures over time with color coding for percent Black]
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Closed hospital
Hospital closures in the St. Louis region have been primarily in areas with high African-American population.
3. Neighborhood SES factors important for readmissions prevention

• Hospital-based interventions address important aspects of the transition from hospital to outpatient setting

• Typical elements include:
  – Patient or caregiver education
  – Discharge planning team
  – Communication with outpatient providers
  – Post-discharge clinical follow-up
  – Dedicated transition provider
  – Medication reconciliation

Rennke S et al., 2013.
3. Neighborhood SES factors important for readmissions prevention

• Hospital-based interventions may vary in ability to address non-medical factors affecting health

• Potentially relevant neighborhood factors affecting health include:
  – Proximity to health care facilities
  – Access to healthy foods
  – Resources for social support
  – Housing type and availability
  – Transportation
3. Neighborhood SES factors important for readmissions prevention

• Involving community partners is important for addressing factors outside traditional hospital role
  – Incorporates local knowledge and relationships
  – Avoids duplication of programs

• Potential challenges
  – Communities may vary in type and scope of existing resources and programs
  – Communities may vary in infrastructure for collaboration across silos
  – Interventions outside clinical domain may be resource intensive but not compensated by existing reimbursement structures
4. Many social factors are not captured in standard administrative data

- Hospital administrative data routinely captures factors such as: age, gender, race, payer
- Information on other patient and neighborhood social factors in different locations or not captured
  - Clinical chart: Health literacy, ability to do daily tasks
  - Case management/social work: Income, social support, barriers to accessing care, resources
  - Public health/community-based organizations: Neighborhood health factors, community-specific resources
- Communities which look similar in SES may differ in ways not captured by administrative data
  - Implications for risk adjustment, intervention dissemination
- Coordination of information across different silos necessary for seamless care
Summary

• Neighborhood SES affects calculated readmission rates and penalties.
• Measured SES variables may be proxies for other factors affecting readmission risk.
• Neighborhood SES factors important for readmission prevention.
• Neighborhood SES factors are not captured in standard administrative data.
References


Acknowledgements

This work is supported by BJC HealthCare and by the Washington University Institute of Clinical and Translational Sciences grant number KL2TR000450 from the National Center for Advancing Translational Sciences (NCATS).

Hospital discharge data provided by the Hospital Industry Data Institute, data company of The Missouri Hospital Association.

Analytic support provided by Mat Reidhead, M.A. VP of Research and Analytics, Missouri Hospital Association, Hospital Industry Data Institute.