Cost of Disparity Analysis

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Objectives

- Describe cost of disparities in the US

- Describe Connecticut's disparities analysis

- Discuss application of the results & next steps

Acknowledgments

- Original Analysis
  - David A. Mann MD, PhD. *Cost of Disparity Analysis & Using Disparity Data for Policy* presented on May 14, 2013 at the Connecticut DPH.
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  - Population Health Statistics & Surveillance Epidemiologists
  - Community Health & Prevention Section Epidemiologists & Program Staff

The Economic Burden of Health Inequalities in the United States

- Published September 2009 (www.jointcenter.org)
- The Joint Center for Political & Economic Studies
- Investigators: LaVeist, Gaskin & Richard
- From 2003-2006 there were $229.4 billion in direct medical costs from minority disparities
  - $57.35 billion/year
- 30.6% of direct costs for African Americans, Asians & Hispanics were due to disparities

Estimate Connecticut's share of the $57.35B

- Used population statistics
- The cost of the disparity for the Black population in Connecticut should be between $550 million and $650 million a year

Acute Care Hospital Inpatient Discharge Database (HIDD)

- All 31 acute care hospitals are required by law to submit inpatient discharge data to OHCA
- Information taken from medical record abstracts and hospital bills
- *Data coded for billing purposes not for surveillance*
- Hospitalizations: discharges from the hospital
  - Number of discharges not unduplicated patients
- 2011 data

Calculating the Frequency Disparity

1. Calculate the ratio of the Black Hospital Discharge Rate to White Hospital Discharge Rate (in each age group)

2. Calculate Black % Excess (in each age group):

$$\frac{\text{Black to White Hospital Discharge Rate Ratio} - 1}{\text{Black to White Hospital Discharge Rate Ratio}}$$

3. Calculate the Black excess hospital charges (in each age group & sum):

Black % Excess x Black Total Charges

Frequency Disparity - CT

- The excess charges from more hospital discharges among Black residents (frequency disparity) is

$588 million

Severity Disparity - CT

- Average charges of Black hospitalizations are higher than the average charges for Whites
- Difference in average charges multiplied by the non-excess Black discharges
  - Non-excess Black discharges = White discharge rate
  - $3,295 x (11,358 discharges per 100,000 population)

$37 million

Black Total Excess Charges - CT

- Frequency Disparity + Severity Disparity
  - $588 million + $37 million

> **$625 Million in excess charges**
> **36% of Black total charges**

Hospital Charges vs. Cost

- Results are excess in hospital charges, not the actual cost of the hospitalization
- The amount of money a hospital charges the payer for services or supplies
    - Hospital charges may not include physician fees
- Charges are usually more than payments

Hospital Charges vs. Cost

- Hospital Ratio of Cost to Charge (RCC)
  - Ratio of total operating expense to the total of gross patient charges plus other operating revenue
  - A lower ratio is more favorable, since it indicates a greater difference between the cost and charges billed for providing patient services
  - 2011 Connecticut RCC = 0.38

Black Total Excess Cost (estimated) - CT

- RCC x Black Total Disparity (charges)
  - 0.38 x $625 million

Black Total Disparity (estimated cost) = $237 million

Limitations

- Race and ethnicity may be either self- or observer-reported
  - May be subject to misclassification
- The estimates may be conservative
  - Combines:
    - Conditions for which the minority population has higher hospital discharge rates and/or higher charges and
    - Condition for which the minority population has lower hospital discharge rates and/or lower charges
- The estimates are for one point in time

Next Steps

- Analyze more years of data
- Subset by payer (public and private)
- Subset by age

Application

- Improving quality and containing costs
- Engaging stakeholders in minority health initiatives
- Tracking progress in reducing disparities

Conclusion

- Black total excess charges in Connecticut are estimated to be about $625 million
- Black total excess hospital cost is estimated to be about $237 million
- These are conservative estimates with limitations
- Reducing health inequalities could result in cost savings as well as improved population health

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