Disparities in Epilepsy Care: What is Known/Not Known

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## Disclosure

<table>
<thead>
<tr>
<th>Name of Commercial Interest</th>
<th>Type of Financial Relationship</th>
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American Epilepsy Society Annual Meeting
Learning Objectives

• Definitions and Measures in Epilepsy Disparities Research

• Review of Recent Studies

• Summary and Future Direction
Background

- Individuals with epilepsy benefit from **appropriate** treatment.

- **Access** to appropriate services is crucial for living optimally with epilepsy.

- **Barriers** may limit access to services.
Background

• Access defined:
  – “the timely use of personal health services to achieve the best possible health outcomes” . . . . .
  . “access problems are created when barriers cause underuse of services, which in turn leads to poor outcomes.” (1993 IOM report)
Definition of Disparities

• Disadvantaged social groups with similar needs receive less health care, or lower quality care, than advantaged social groups.

• Does not include all differences in health care.

• Health care equity means minimizing or eliminating disparities in health care use.
Measurement

• Use population-based data on health care use (need numerator and denominator).

• Identify systematic differences in rates of use among disadvantaged groups compared to advantaged groups.

• Control for factors known to be associated with need/preference/motivation.
Measurement Issues

- Easier to measure whether a service occurs than whether the service is necessary or of high quality.

- Estimating SES, race/ethnicity, education, location, may be difficult.
  - Multi-dimensional concept.
  - Necessary information often unavailable.
  - Standardized indices complex.
  - Community-based measures may lead to misclassification.
Measurement Issues

• Race/ethnic categories are ambiguous.
  – Use of self-designations, incomplete medical records, imputed values.

• Potential for confounding among factors.
  – Studies may not isolate role of individual factor.
Epilepsy Literature

• A small but growing number of studies.

• Focus on race/ethnicity.

• Growing number also examining role of age, SES, insurance status.

• 58 publications since 1970, 34 publications from 2000-2005 (Szaflarski et al. 2006).
Review

• Nine selected U.S. studies published in the last five years in peer-reviewed journals.

• Epilepsia, Seizure, Epilepsy & Behavior, Epilepsy Research, Neurology, Annals of Neurology, Archives of Neurology

• Reflect different methods, data sources, and findings.

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Rates of ER Use Higher for Minorities

- New York City population prevalence (Kelvin et al. 2007):
  - 20% of active cases and 18% of lifetime cases indicated source of care ER.
  - No whites, 50% of blacks, 20% of Hispanics.
More Frequent ER Use, Less Follow-up for Uninsured

- 1005 patients who visited the VUH ER and 205 the MNGH ER for seizures in 2002-2003 (Farhidvash et al., 2009):
  - Proportion visiting the ER more than once 15.2% at VUH, 29.2% at MNGH.
  - 3.2% at VUH and 26.7% at MNGH uninsured.
  - Clinic follow-up 68.6% of VUH and 13.3% of MNGH repeat ER visitors.
ER Users More Likely to have Public Coverage – Use Not Higher for Uninsured

• Characteristics of patients who presented at the YRMC ED 2005-2008 (Ouellette et al. 2011).
  
  – Similar proportion of control and epilepsy cohorts with private insurance and uninsured.
  – Patients with epilepsy 1.4 times more likely to have public insurance (P<0.001).

  – Multivariate Analysis:
    • Being uninsured did not predict greater ER use.
Rates of ER and Hospital Use Higher for Low SES

- Four clinics in Houston and New York City (Begley et al. 2011):
  - Multivariate analysis.
    - Low SES patients had higher ER use (Quarterly Adjusted OR 1.4-2.5; 95%CI 1.1-5.5),
    - and hospitalizations (Quarterly Adjusted OR 2.0-3.0; 95%CI 1.5-6.6).
Rates of Surgery Lower for Minorities, Aged, Uninsured

- National Inpatient Sample (McClelland et al., 2010):
  - 5,779 adults admitted with TLE from 1988 through 2003, 562 (9.7%) received ATL.

- Multivariate analysis.
  - blacks half as likely to receive surgery (OR .56; 95% CI .38-.84).
  - aged less likely (OR .98; 95%CI .97-.99).
  - privately insured more likely (OR 1.85; 95%CI 1.39-2.46).
Rates of AED Use Lower for Low SES

- California population survey (Elliott et al. 2009):
  - People with incomes below the poverty 50% less likely to report taking epilepsy medication.
Appointments Difficult for Medicaid

• Chicago appointments (Bisgaier and Rhodes, 2011):
  – patient on Medicaid 9 times more likely to be denied an appointment.
  – Wait time 23 days for private insurance, 39 days for Medicaid.
Neurologist Visits Lower for Uninsured

- Medical Expenditure Panel Survey (Halpern et al., 2011):
  - Multivariate analyses.
    - half of privately insured had neurologist visit each year, 14% uninsured.
    - Medicaid patients more prescriptions for older medications
African-Americans Have Poorer AED Adherence

• Pharmacy and clinical records of 108 patients with epilepsy who were part of the indigent care program at Shands–Jacksonville (Bautista et al. 2011).

• Compared with Caucasians, African-Americans had lower MPRs (0.872 for Caucasians vs 0.796 for African-Americans, P=0.02).

• Stepwise multiple linear regression, race alone best predicted the MPR.
Summary

• Recent studies provide additional evidence of disparities for minorities, low SES, aged, the uninsured, and those with Medicaid.

• Remaining questions:
  – Importance of these differences for health.
  – Magnitude in relation to overall gaps in care.
  – Relative importance of different factors.
  – Are absolute or relative differences more important, cross-sectional or changes over time.
Future Research

• Extent to which disparities can be explained by:
  – individual patient characteristics/behaviors or
  – variations in provider practices and practice settings.

• Extent to which the disparities result in worse health outcomes for disadvantaged groups.
Future Research

• Differences among subgroups versus gap for all.
  – One-third with recent seizures have not seen a neurologist in past year (CDC, 2010).

  – Child neurologists report wait times averaging 53 days for a new visit and 44 day waits for a return visit (Polsky et al., 2005).

  – Physicians serving Medicaid and CHIP report specialty referrals for neurology difficult (GAO, 2011).
Future Research

• In order to isolate the underlying factors of most importance:
  – More carefully designed studies,
  – Selection of diverse study populations for comparison,
  – Validation of various algorithms and data sources used to document services,
  – More use of validated indices for SES, and
  – better analysis.
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