The Use of Emergency Department Services for Non-Emergent Conditions among Adults with Disabilities

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Background

- Eliminating disparities in health care access among individuals with disabilities is an important concern for policymakers
  - The Agency for Healthcare Research and Quality (AHRQ)[1], Healthy People 2020[2], and The Affordable Care Act (ACA) address issues regarding individuals with disabilities and health disparities[3]
- Individuals with disabilities are disproportionately represented in emergency department (ED) utilization
  - Individuals with disabilities account for approximately 40 percent of annual ED visits for adults aged 18 to 64 years[5]
- Individuals with disabilities are more likely to have other characteristics associated with high ED use, such as belonging to a minority group[4] or having lower socioeconomic status[6]
- Prior research has shown that many ED visits were potentially preventable if appropriate primary care had been received.[7,8,9]

Objective

- Using data from the 2001-2007 Medical Expenditure Panel Survey, we examine the relationship between disability and:
  - The likelihood of ED use
  - The frequency of ED use
  - Preventable ED use

Data

- We used data from the MEPS Household Component (MEPS-HC)
  - MEPS is a nationally representative survey of the civilian non-institutionalized population
- We pooled five MEPS panels for years 2001 to 2007 to attain a sample of 8,846 adults with disabilities, out of 39,934 total individuals
- Detailed ICD-9 codes are required to create our measures on non-emergent and potentially avoidable ED use
  - We obtained Institutional Review Board approval to access the detailed codes and conducted analyses at the AHRQ Data Center

Methods

- We defined an individual as having disability if he or she had difficulties with sensory, physical, cognitive, functional, mental health, or work-related functioning
- We performed logistic regression analysis to measure whether individuals had any ED visit, five or more ED visits, avoidable ED visits, or non-emergent ED visits
  - Due to the complex survey sampling design, the models were adjusted for clustering effects of the sample selection at the primary sampling unit level
- We analyzed the number of ED visits per individual using negative binomial regression
- We controlled for the following demographic variables:
  - Age race, ethnicity, marital status, education, income relative to federal poverty level, insurance status, having a usual source of care, self-reported health status, and region.
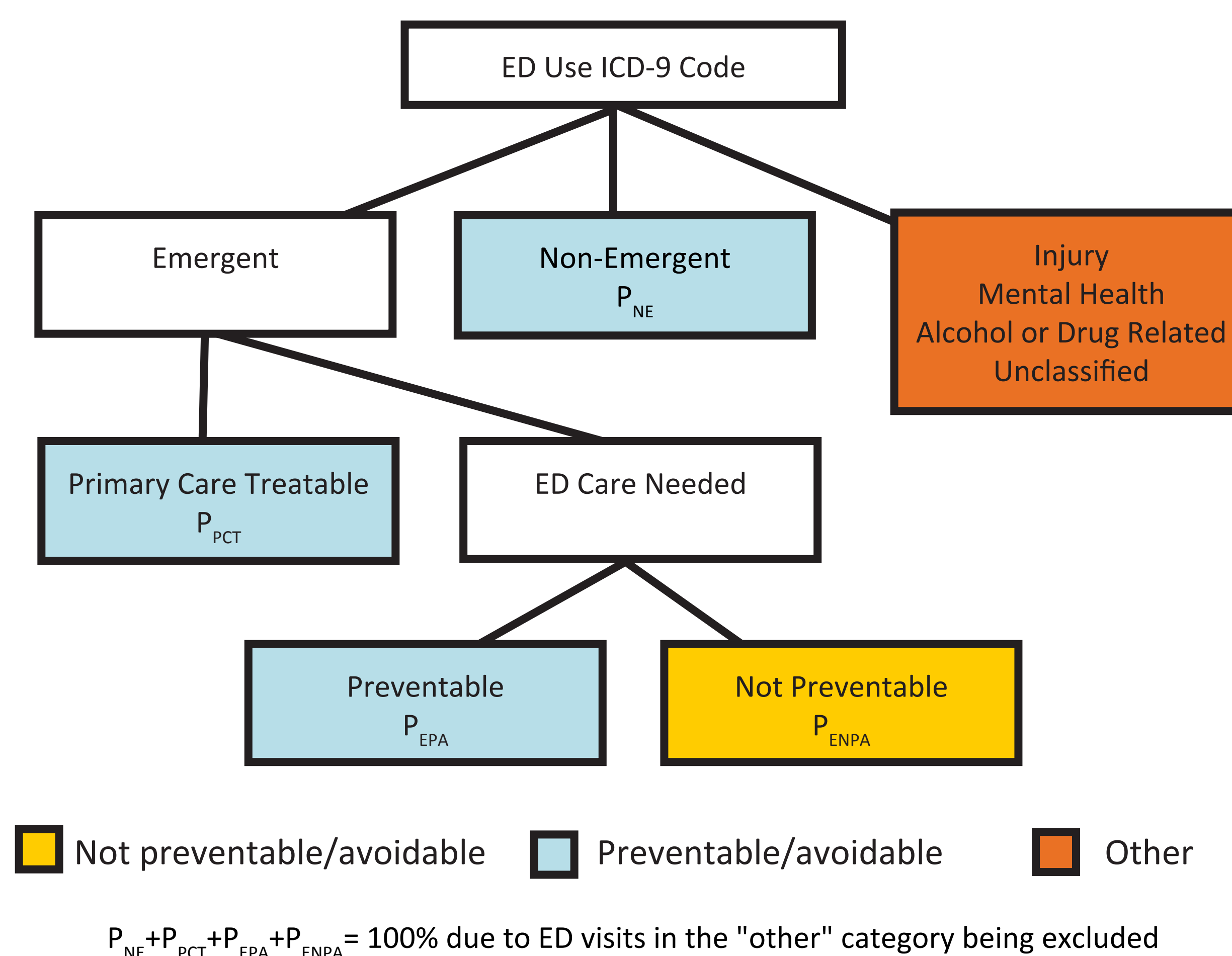
Results

Predictors of Any Emergency Department Use, High Use, Number of Visits, Avoidable Visit, and Non-Emergent Visit

Parameter	Any ED (OR)	Five or More (OR)	Number of Visits (IRR)	Avoidable Visit(OR)	Non-Emergent Visit (OR)
Has disability	**1.60***	**2.65***	**1.73***	**1.26***	**1.06**
Demographic Variables					
Non-Hispanic Black	1.23*	1.15	1.17*	1.35*	1.34*
Hispanic	0.78*	0.49*	0.72*	1.19	1.21
Other	0.61*	0.42*	0.69*	0.92	1.23
Age	0.97*	0.97	0.97*	0.95*	0.94*
Age^2	1.00*	1.00	1.00	1.00	1.00
Female	1.17*	1.68*	1.26*	1.61*	1.69*
Widowed	1.08	0.99	1.21*	1.26	1.19
Divorced	1.30*	1.16	1.25*	1.19	1.10
Never Married	1.00	1.01	0.97*	1.17	1.03
Living With Partner	1.31*	1.50*	1.27*	1.22	1.11
Education					
High School Graduate	0.95	1.10	0.93*	1.13	1.08
Some College	0.87*	1.04	0.90*	1.09	0.93
Bachelor's Degree	0.72*	0.72	0.74*	1.03	1.03
Graduate Degree	0.78*	1.23	0.81*	1.16	1.19
Education Not Reported	0.76*	0.31*	0.96	0.86	0.86
Income					
100-199% FPL	1.01	0.83	0.96	0.92	1.00
200-299% FPL	0.91	0.64*	0.83*	0.75	0.69*
300-399% FPL	0.86*	0.74	0.82*	0.76	0.76*
> 400% FPL	0.83*	0.59*	0.78*	0.65*	0.69*
Region					
South	0.92	1.20	1.04	1.05	1.05
West	0.79*	1.22	0.86*	1.16	1.17
Midwest	1.04	1.15	1.08*	0.93	0.95
Insurance					
Public Insurance	1.41*	1.90*	1.39*	1.07	1.04
No Insurance	0.90*	1.16	0.92*	1.21	1.11
Source of Care					
Usual Source of Care Place	1.11	0.85	1.15*	1.04	0.95
Usual Source of Care Person	1.27*	0.93	1.24*	0.78*	0.76*
Self-Reported Health					
Very Good Health	1.31*	1.87*	1.23*	0.86	0.98
Good Health	1.63*	3.24*	1.59*	0.94	0.84
Fair Health	2.55*	7.56*	2.46*	1.17	0.96
Poor Health	3.76*	15.59*	4.13*	0.95	0.88

Discussion

- Relative to those without disabilities, adults with disabilities had higher odds of ED use across measures despite being more likely to have a usual source of care
  - An exception to this was regarding non-emergent care
- Adults with a person as a usual source of care had lower odds of both preventable and non-emergent ED use relative to those with no usual source of care
- Women had higher ED use rates than men across all measures
- Non-Hispanic Blacks had higher ED use across most measures than non-Hispanic Whites
- Having public insurance increased the odds for overall ED use and increased the odds of having five or more visits, but not the odds of having non-emergent or avoidable visits

NYU Algorithm

- We used the New York University (NYU) ED Classification Algorithm to categorize ED visits by clinical characteristics.
  1. Non-emergent – Care was not required within 12 hours
  2. Emergent/Primary Care Treatable – Care was required within 12 hours, but could have been provided in a primary care setting
  3. Emergent, ED Care Needed, Preventable/Avoidable – ED care was required but the condition was potentially preventable or avoidable if adequate ambulatory care had been received in a timely manner
  4. Emergent, ED Care Needed, Not Preventable/Avoidable – ED care was required and ambulatory care treatment could not have prevented the condition
- The NYU algorithm provides a probability for each diagnoses
- We created two different classification schemes:
  - Avoidable: If the probability of a visit being in categories 1-3 was greater than the probability of the visit being in category 4
  - Emergent: If the probability of a visit being in categories 1-2 was greater than the probability of the visit being in category 3-4

NYU Classification

Not preventable/avoidable — Preventable/avoidable — Other

$P_{NE} + P_{PCT} + P_{EPA} + P_{ENPA} = 100\%$ due to ED visits in the "other" category being excluded

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Acknowledgements

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