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Hospitalizations Associated with Strongyloidiasis in the United States, 2003-2018

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BACKGROUND

Recent surveillance data on strongyloidiasis are lacking in most parts of the US

OBJECTIVES

To describe geographic distribution of strongyloidiasis associated with hospitalization

To describe risk factors associated with strongyloidiasis

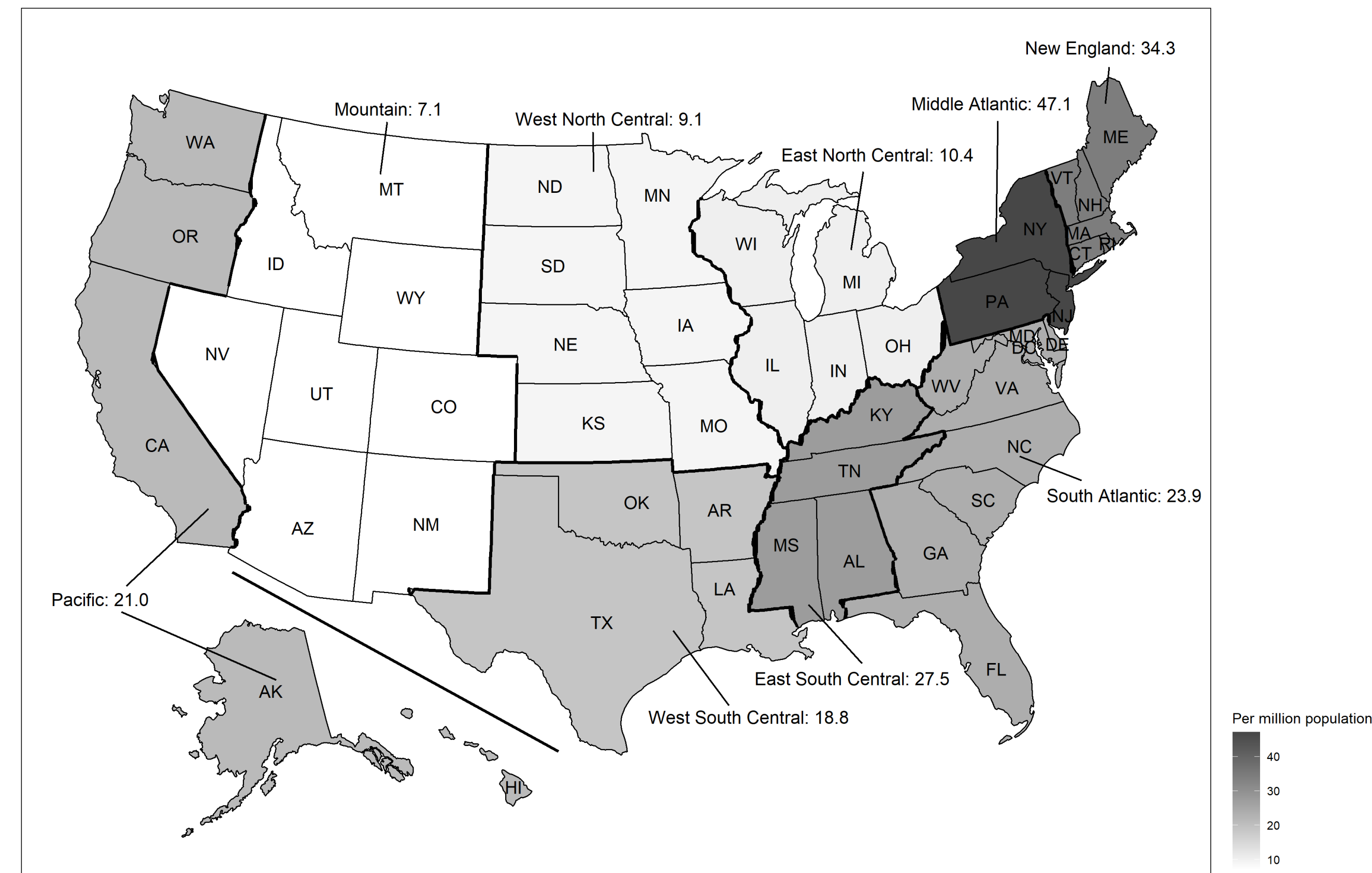
METHODS

Population-based study using National Inpatient Sample databases 2003-2018

ICD codes were used to characterize records

Logistic regression was used to assess risk factors

Figure 1. Hospitalization rate of strongyloidiasis in the US Census Bureau Divisions per million population



- 6931 hospitalizations with strongyloidiasis (11.8/million hospitalizations)
- Median age 61 (IQR: 48-73)
- 63.8% male
- 71.6% non-white race (vs 34.1% in all other hospitalizations)
- 41.3% immunocompromised
- 7.8% died during hospitalization

RESULTS

Figure 2. Multivariable analysis of risk factors for strongyloidiasis

	Odds ratio (95%CI) ^a	P value
Age (years)		
0-11	0.2 (0.09-0.43)	<0.001
12-17	1.35 (0.58-3.15)	0.49
18-24	Reference	-
25-44	3.37 (2.04-5.55)	<0.001
45-64	5.57 (3.39-9.18)	<0.001
65 or greater	6.31 (3.8-10.5)	<0.001
Male	2.21 (1.95-2.51)	<0.001
Race/ethnicity		
Non-Hispanic white	Reference	-
Non-Hispanic black	1.84 (1.48-2.30)	<0.001
Hispanic	9.62 (8.06-11.5)	<0.001
Asian or Pacific Islanders	12.9 (9.76-17.0)	<0.001
Other	6.66 (5.20-8.54)	<0.001
Primary insurance		
Private	Reference	-
Public	1.46 (1.20-1.77)	<0.001
Other	1.84 (1.44-2.35)	<0.001
Median household income in patient's zip code		
1st quartile	1.26 (1.03-1.53)	0.025
2nd quartile	1.11 (0.91-1.36)	0.3
3rd quartile	1.12 (0.92-1.36)	0.26
4th quartile	Reference	-
Human T-lymphotropic virus type 1 infection ^b		
Diabetes mellitus	0.87 (0.75-1.001)	0.052
Immunodeficiency		
HIV	10.7 (8.14-14.1)	<0.001
Hematologic malignancy	4.08 (3.32-5.02)	<0.001
Hematopoietic stem cell transplant	3.28 (1.89-5.67)	<0.001
Solid organ transplant	5.67 (4.27-7.53)	<0.001
Solid tumor malignancy or brain tumor	0.93 (0.75-1.09)	0.3
Autoimmune/inflammatory conditions	3.38 (2.73-4.19)	<0.001
Year	1.01 (0.997-1.03)	0.11
Census Division		
Northeast		
New England	2.21 (1.59-3.06)	<0.001
Middle Atlantic	2.00 (1.58-2.53)	<0.001
Midwest		
East North Central	0.77 (0.56-1.05)	0.1
West North Central	0.62 (0.37-1.05)	0.075
South		
South Atlantic	1.35 (1.02-1.78)	0.035
East South Central	2.77 (2.02-3.80)	<0.001
West South Central	0.94 (0.70-1.27)	0.68
West		
Mountain	0.44 (0.27-0.70)	0.001
Pacific	Reference	-

CONCLUSIONS

- Strongyloidiasis-associated hospitalization is rare but can be associated with mortality
- Strongyloidiasis is relatively common in the Northeast region in addition to the South region
- Hospitalization with diagnosis of strongyloidiasis is more common in non-white race/ethnicity populations, and those with lower socioeconomic status, male sex, and advanced age
- Immunocompromised conditions are common among hospitalized patients with strongyloidiasis
- Enhanced surveillance effort is needed to inform health policies for improving the health of at-risk populations

