

# Prevalence of Community-onset Group A Streptococcal Infections across 10 Regional Midwestern Hospitals

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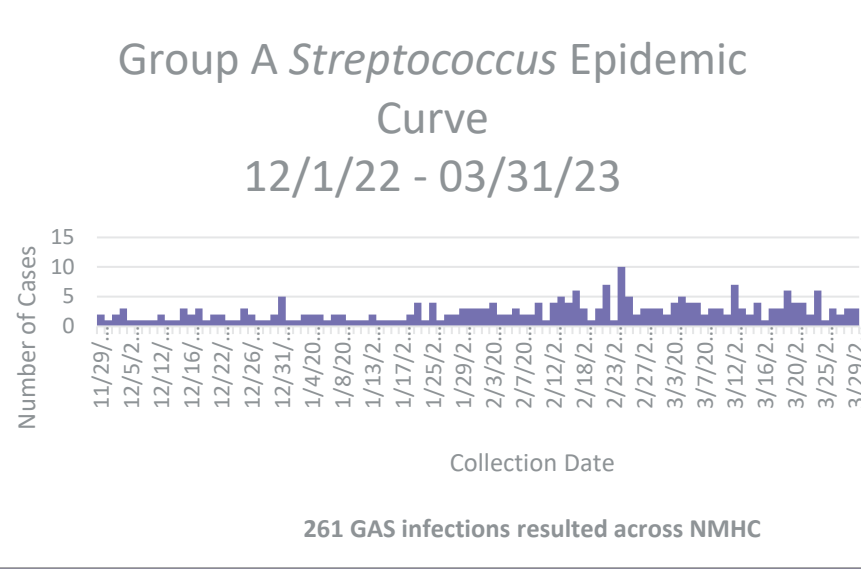
## Background

Group A Streptococcus (GAS) is a bacterium that can cause infections, including strep throat, skin and soft tissue infections and necrotizing fasciitis. As of December 2022, a global outbreak of GAS infections has been noted among the pediatric population. Hospitals across Northwestern Memorial Healthcare (NMHC) noticed a sharp increase in community-onset GAS infections among pediatric and adult patients. This study examines the epidemiological and clinical features of GAS infections among these patients.

## Methods

NMHC is an 11-hospital system with more than 132,000 inpatient admissions annually. This study focuses on GAS cases identified between December 2022 and March 2023 from 10 regional NMHC acute care hospitals and excludes the inpatient rehabilitation hospital. All GAS infections identified were from specimen collected in an emergency department or inpatient unit and were extracted from the electronic medical record (EMR). Clinical and microbiological data, possible exposure source, and outcomes were determined through the EMR.

## Results



	Cases (n=261)
<b>Gender</b>	
Male	141(54.0%)
Female	120(46.0%)
<b>Age</b>	
Neonate	0(0.0%)
Infant	4(1.5%)
Children (1 year through 12 years)	104(39.8%)
Adolescent (13 years through 17 years)	8(3.1%)
Adults (18 years through 64)	98(37.5%)
Older adults	47(18.0%)
<b>Race</b>	
White	182(69.7%)
Black	32(12.3%)
Asian Indian	2(0.8%)
Japanese	1(0.4%)
None of the above	35(13.4%)
Other Asian	2(0.8%)
Patient declined to respond	6(2.3%)
Unknown	1(0.4%)
<b>Ethnicity</b>	
Hispanic/Latino	63(24.1%)
No, not Hispanic, Latino/a, or Spanish origin	189(72.4%)
Patient declined to respond	4(1.5%)
Mexican, Mexican American, Chicano/a	4(1.5%)
Puerto Rican	1(0.4%)

Count by County	Cases (n=261)
Boone	1(0.4%)
Cook	57(21.8%)
Dekalb	15(5.7%)
DuPage	27(10.3%)
Kane	20(7.7%)
La Salle	1(0.4%)
Lake	60(23.0%)
Out of (IL) State	2(0.8%)
McHenry	74(28.4%)
Will	3(1.1%)
Winnebago	1(0.4%)
<b>Count by Hospital</b>	<b>Cases (n=261)</b>
Hospital Name	N(%)
Hospital A	58(22.2%)
Hospital B	37(14.2%)
Hospital C [Academic Medical Center (AMC)]	31(11.9%)
Hospital D	31(11.9%)
Hospital E	28(10.7%)
Hospital F	26(10.0%)
Hospital G	18(6.9%)
Hospital H	16(6.1%)
Hospital I	15(5.7%)
Hospital J [Critical Access Hospital (CAH)]	1(0.4%)
<b>Collection Source</b>	<b>Cases (n=261)</b>
Mouth and Throat	139(53.3%)
Blood	41(15.7%)
Urine	6(2.3%)
Arm and Hand	22(8.4%)
Leg and Foot	21(8.0%)
Head & Face (Eye, Ear & Scalp)	7(2.7%)
Gluteal, Hip, and Genitals	18(6.9%)
Chest, Back, and Abdominal	7(2.7%)
<b>Infection Source for Hospitalized Patients</b>	<b>Cases (n=106)</b>
Surgical wound	1(0.9%)
Injury	12(11.3%)
IVDU	1(0.9%)
Injection w/ Epi Pen	1(0.9%)
Occupational injury	2(1.9%)
Recent Laryngoscopy procedure	1(0.9%)
Surgical procedure	1(0.9%)
Occupational exposure	1(0.9%)
Potential household exposure	4(3.8%)
Unknown	82(77.4%)

Emergency Department Only Visits versus Hospital Admissions	Cases (n=261)
Emergency Department	155(59.4%)
Hospital Admission	106(40.6%)
<b>Admissions to the Intensive Care Unit</b>	<b>Case (n=30)</b>
Hospital A	0(0.0%)
Hospital B	0(0.0%)
Hospital C (AMC)	1(3.3%)
Hospital D	8(26.7%)
Hospital E	3(10.0%)
Hospital F	6(20.0%)
Hospital G	5(16.7%)
Hospital H	3(10.0%)
Hospital I	4(13.3%)
Hospital J (CAH)	0(0.0%)

9.4% of hospitalized patients with GAS expired; 9(90%) from septic shock and 1(10%) acute respiratory failure.

## Conclusion

1. This observation of community-onset GAS infections demonstrates a high prevalence among both pediatric and adult populations.
2. The severity of disease and increased mortality are more predominant in the adult population.

## Reference

1. Group A Streptococcus Infections | Epidemiology and Control of Selected Infections | Infection Control | CDC. (n.d.). <https://www.cdc.gov/infectioncontrol/guidelines/healthcare-personnel/selected-infections/group-a-strep.html>
2. Executive Summary. 2022 Annual Nonprofit Hospital Community Benefits Plan Report, Northwestern Memorial HealthCare, 2022, <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwi1tqm7kZmBAxUwHjQIH7qDY0QFnoECCwQAQ&url=https%3A%2F%2Fwww.nm.org%2F-%2Fmedia%2Fnorthwestern%2Fresources%2Fabout-us%2Fnorthwestern-medicine-fy-22-community-benefits-plan-report.pdf&usg=AOvVaw1PoH0EuUEO6LqmEUje5y3&opi=89978449>