



Public Health
Prevent. Promote. Protect.
Dayton & Montgomery County

Streptococcal Disease, Group A – Invasive Investigation, Montgomery County, January 2019 – October 2019

Sources:

- Ohio Disease Reporting System, Ohio Department of Health, 2019
- Group A Strep Calculator, Centers for Disease Control and Prevention, 2019
https://www2.cdc.gov/ncidod/dbmd/abcs/calc/calc_new/intro.html
- Dayton Climate, Climate-Data.org, 2019 <https://en.climate-data.org/north-america/united-states-of-america/ohio/dayton-1663/>

Streptococcal disease, group A – invasive Case Characteristics:

Sex	#	%
Female	27	35.1%
Male	50	64.9%
Total	77	100%

Age Group	#	%
20-24 years	3	3.9%
25-29 years	4	5.2%
30-34 years	6	7.8%
35-39 years	5	6.5%
40-44 years	3	3.9%
45-49 years	3	3.9%
50-54 years	7	9.1%
55-59 years	10	13.0%
60-64 years	7	9.1%
65+ years	29	37.7%
Total	77	100%
Age Range		
Average Age	57.1 years	
Median Age	59 years	
Min age	22 years	
Max Age	94 years	

Race	#	%
American Indian/Alaskan Native	1	1.3%
Black	9	11.7%
White	58	75.3%
Two or More	1	1.3%
Unknown	8	10.4%
Total	77	100%

Facility	#	%
Grandview Hospital	5	6.5%
Kettering Health Network	27	35.1%
MedLab (Long Term Care Patients)	4	5.2%
Miami Valley Hospital	37	48.1%
Southview Hospital	1	1.3%
Sycamore Hospital	2	2.6%
Veterans Affairs Medical Center - Dayton	1	1.3%
Total	77	100%

CDC Streptococcal Disease, Group A - Invasive Calculator Results

Model Inputs

Model Inputs	Values
Current month	January
Number of invasive GAS cases in current month (observed)	8
Number of invasive GAS cases in previous month	7
Mean temperature in previous month (°F)	33
County or region population	531239
Region size (square miles)	464
Black or African American persons, percent	22
Persons below poverty line, percent	18
Estimated % of cases who are HIV+ (historically)	
Estimated % of cases who are injection drug users (historically)	

Results	Values
Expected number of GAS cases in region	2.9298
Difference between observed and expected # cases	5.0702
p-value (probability of observed # cases or more)	0.0192

Model Inputs

Model Inputs	Values
Current month	February
Number of invasive GAS cases in current month (observed)	10
Number of invasive GAS cases in previous month	8
Mean temperature in previous month (°F)	27
County or region population	531239
Region size (square miles)	464
Black or African American persons, percent	22
Persons below poverty line, percent	18
Estimated % of cases who are HIV+ (historically)	
Estimated % of cases who are injection drug users (historically)	

Results	Values
Expected number of GAS cases in region	3.5006
Difference between observed and expected # cases	6.4994
p-value (probability of observed # cases or more)	0.0088

Model Inputs

Model Inputs	Values
Current month	March
Number of invasive GAS cases in current month (observed)	5
Number of invasive GAS cases in previous month	10
Mean temperature in previous month (°F)	31
County or region population	531239
Region size (square miles)	464
Black or African American persons, percent	22
Persons below poverty line, percent	18
Estimated % of cases who are HIV+ (historically)	
Estimated % of cases who are injection drug users (historically)	

Results	Values
Expected number of GAS cases in region	3.7112
Difference between observed and expected # cases	1.2888
p-value (probability of observed # cases or more)	0.3232

Model Inputs

Model Inputs	Values
Current month	April
Number of invasive GAS cases in current month (observed)	12
Number of invasive GAS cases in previous month	5
Mean temperature in previous month (°F)	41
County or region population	531239
Region size (square miles)	464
Black or African American persons, percent	22
Persons below poverty line, percent	18
Estimated % of cases who are HIV+ (historically)	
Estimated % of cases who are injection drug users (historically)	

Results	Values
Expected number of GAS cases in region	2.2108
Difference between observed and expected # cases	9.7892
p-value (probability of observed # cases or more)	0.0000

Model Inputs

Model Inputs	Values
Current month	May
Number of invasive GAS cases in current month (observed)	8
Number of invasive GAS cases in previous month	12
Mean temperature in previous month (°F)	52
County or region population	531239
Region size (square miles)	464
Black or African American persons, percent	22
Persons below poverty line, percent	18
Estimated % of cases who are HIV+ (historically)	
Estimated % of cases who are injection drug users (historically)	

Results	Values
Expected number of GAS cases in region	3.1285
Difference between observed and expected # cases	4.8715
p-value (probability of observed # cases or more)	0.0261

Model Inputs

Model Inputs	Values
Current month	June
Number of invasive GAS cases in current month (observed)	5
Number of invasive GAS cases in previous month	8
Mean temperature in previous month (°F)	63
County or region population	531239
Region size (square miles)	464
Black or African American persons, percent	22
Persons below poverty line, percent	18
Estimated % of cases who are HIV+ (historically)	
Estimated % of cases who are injection drug users (historically)	

Results	Values
Expected number of GAS cases in region	1.9549
Difference between observed and expected # cases	3.0451
p-value (probability of observed # cases or more)	0.0604

Model Inputs

Model Inputs	Values
Current month	July
Number of invasive GAS cases in current month (observed)	8
Number of invasive GAS cases in previous month	5
Mean temperature in previous month (°F)	72
County or region population	531239
Region size (square miles)	464
Black or African American persons, percent	22
Persons below poverty line, percent	18
Estimated % of cases who are HIV+ (historically)	
Estimated % of cases who are injection drug users (historically)	

Results	Values
Expected number of GAS cases in region	1.4215
Difference between observed and expected # cases	6.5785
p-value (probability of observed # cases or more)	0.0003

Model Inputs

Model Inputs	Values
Current month	August
Number of invasive GAS cases in current month (observed)	8
Number of invasive GAS cases in previous month	8
Mean temperature in previous month (°F)	76
County or region population	531239
Region size (square miles)	464
Black or African American persons, percent	22
Persons below poverty line, percent	18
Estimated % of cases who are HIV+ (historically)	
Estimated % of cases who are injection drug users (historically)	

Results	Values
Expected number of GAS cases in region	1.6105
Difference between observed and expected # cases	6.3895
p-value (probability of observed # cases or more)	0.0007

Model Inputs

Model Inputs	Values
Current month	September
Number of invasive GAS cases in current month (observed)	5
Number of invasive GAS cases in previous month	8
Mean temperature in previous month (°F)	74
County or region population	531239
Region size (square miles)	464
Black or African American persons, percent	22
Persons below poverty line, percent	18
Estimated % of cases who are HIV+ (historically)	
Estimated % of cases who are injection drug users (historically)	

Results	Values
Expected number of GAS cases in region	1.6715
Difference between observed and expected # cases	3.3285
p-value (probability of observed # cases or more)	0.0362

Model Inputs

Model Inputs	Values
Current month	October
Number of invasive GAS cases in current month (observed)	6
Number of invasive GAS cases in previous month	5
Mean temperature in previous month (°F)	67
County or region population	531239
Region size (square miles)	464
Black or African American persons, percent	22
Persons below poverty line, percent	18
Estimated % of cases who are HIV+ (historically)	
Estimated % of cases who are injection drug users (historically)	

Results	Values
Expected number of GAS cases in region	1.5601
Difference between observed and expected # cases	4.4399
p-value (probability of observed # cases or more)	0.0087