

**Cases, Rates and Case Fatality of Invasive Group A Streptococcal Disease
in Five-County Denver Metropolitan Area^ by Age Group, 2006**

group A streptococcus	Cases (Rate)		Deaths	
	No.	(Rate)	No.	(% of cases)
Age Group (years)				
<1	1	(2.7)	0	.
1	5	(13.7)	2	(40.0)
2-4	3	(2.7)	0	.
5-17	6	(1.4)	0	.
18-34	16	(2.9)	0	.
35-49	25	(4.4)	4	(16.0)
50-64	29	(7.1)	5	(17.2)
65+	33	(15.6)	7	(21.2)
Total	118	(5.0)	18	(15.2)

*Rates are computed using 2006-based population estimates, State Demography Office - DOLA
^ Emerging Infections Program area: Adams, Arapahoe, Denver, Douglas, and Jefferson counties*

***Sites from which Invasive group A streptococcus was Isolated:
Denver Metropolitan Area[^], 2006***

Site of Isolation	No.*	(% of cases)
Blood	94	(79.6)
Joint	12	(10.1)
Wound**	11	(9.3)
Peritoneal fluid	4	(3.3)
Pleural fluid	3	(2.5)
Muscle	3	(2.5)
Internal body site	2	(1.6)
CSF	1	(0.8)

**** GAS was isolated from one site in 102 cases and multiple sites in 16 cases (Total cases=118)
GAS was isolated only from blood in 80 cases (67.8%)***

*****Wound is included when accompanied by necrotizing fasciitis and/or toxic shock syndrome***

[^] Emerging Infections Program area: Adams, Arapahoe, Denver, Douglas, and Jefferson counties

Clinical Syndrome		No.*	(% of cases)
Age Group (years)			
<=17	Bacteremia only	6	(40.0)
	Bacteremic pneumonia	2	(13.3)
	Cellulitis	2	(13.3)
	Peritonitis	1	(6.6)
	Septic arthritis	4	(26.6)
	Osteomyelitis	1	(6.6)
	Empyema	1	(6.6)
18-49	Bacteremia only	15	(36.5)
	Bacteremic pneumonia	4	(9.7)
	Cellulitis	9	(21.9)
	Epiglottitis	1	(2.4)
	Peritonitis	3	(7.3)
	Septic arthritis	5	(12.1)
	Osteomyelitis	1	(2.4)
	Necrotizing fasciitis	6	(14.6)
	Empyema	1	(2.4)
50+	Bacteremia only	19	(30.6)
	Meningitis	1	(1.6)
	Bacteremic pneumonia	8	(12.9)
	Cellulitis	20	(32.2)
	Abscess	3	(4.8)
	Septic arthritis	7	(11.2)
	Osteomyelitis	1	(1.6)
	Streptococcal Toxic Shock	2	(3.2)
	Necrotizing fasciitis	9	(14.5)
	Endocarditis	1	(1.6)

** Some cases had more than one syndrome*

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**Underlying Conditions Associated with Invasive Group A Streptococcal Disease:
Denver Metropolitan Area[^], 2006**

Underlying Condition		No.*	(% of cases)
Age Group (years)			
<=17	None	11	(73.3)
	Unknown	2	(13.3)
	Other prior illness	2	(13.3)
18-49	None	15	(36.5)
	Unknown	3	(7.3)
	Current smoker	9	(21.9)
	Leukemia	1	(2.4)
	Diabetes	5	(12.1)
	Renal failure/dialysis	2	(4.8)
	HIV	1	(2.4)
	AIDS	1	(2.4)
	Cirrhosis/liver failure	3	(7.3)
	Alcohol abuse	6	(14.6)
	Atherosclerotic cardiovascular disease	1	(2.4)
	Heart failure/CHF	1	(2.4)
	IV drug use	6	(14.6)
	Obesity	2	(4.8)
	Other malignancy	4	(9.7)
Other prior illness	2	(4.8)	
50+	None	13	(20.9)
	Current smoker	3	(4.8)
	Immunosuppressive therapy	1	(1.6)
	Asthma	2	(3.2)
	Emphysema/COPD	4	(6.4)
	Diabetes	22	(35.4)
	Renal failure/dialysis	7	(11.2)
	Cirrhosis/liver failure	2	(3.2)
	Alcohol abuse	2	(3.2)
	Atherosclerotic cardiovascular disease	10	(16.1)
	Heart failure/CHF	14	(22.5)

(Continued)

**9 cases in the 18-49 age group and 26 cases in the 50+ age group had >1 underlying condition
Other prior illness/malignancy includes, but is not limited to: fetal alcohol syndrome (<=17 age group),
hepatitis C, and cancer**

[^] Emerging Infections Program area: Adams, Arapahoe, Denver, Douglas, and Jefferson counties

Underlying Condition		No.*	(% of cases)
Age Group (years)			
50+	Cerebral vascular accident/stroke	6	(9.6)
	Obesity	5	(8.0)
	Other malignancy	8	(12.9)
	Other prior illness	5	(8.0)

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***Invasive Group A Streptococcal Disease emm Types:
Denver Metropolitan Area[^], 2006***

group A streptococcus	No.	(% of isolates)
emm type		
01	24	(22.8)
12	14	(13.3)
28	11	(10.4)
05	5	(4.7)
03	5	(4.7)
77	4	(3.8)
76	4	(3.8)
118	3	(2.8)
33	3	(2.8)
44/61	3	(2.8)
82	3	(2.8)
89	3	(2.8)
06	3	(2.8)
02	3	(2.8)
68	2	(1.9)
27G	2	(1.9)
04	2	(1.9)
11	2	(1.9)
75	2	(1.9)
42	1	(0.9)
101	1	(0.9)
114	1	(0.9)
73	1	(0.9)
92	1	(0.9)
83	1	(0.9)
102	1	(0.9)
Total	105	(100.0)

***Based upon reference lab testing of 105 isolates (Total cases=118)
Testing performed by the Centers for Disease Control and Prevention: Atlanta, GA
[^]Emerging Infections Program area: Adams, Arapahoe, Denver, Douglas, and Jefferson counties***