

***Cases, Rates and Case Fatality of Invasive Group A Streptococcal Disease
in Five-County Denver Metropolitan Area^ by Age Group, 2007***

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group A streptococcus	Cases (Rate)		Deaths	
	No.	(Rate)	No.	(% of cases)
Age Group (years)				
<1	5	(13.7)	0	.
1	2	(5.4)	0	.
2-4	3	(2.7)	0	.
5-17	7	(1.6)	0	.
18-34	21	(3.7)	1	(4.7)
35-49	35	(6.1)	2	(5.7)
50-64	31	(7.3)	1	(3.2)
65+	42	(19.4)	9	(21.4)
Total	146	(6.1)	13	(8.9)

***Rates are computed using 2007-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[^], 2007***

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Site of Isolation	No.*	(% of cases)
Blood	118	(80.8)
Joint	17	(11.6)
Wound**	6	(4.1)
Peritoneal fluid	4	(2.7)
Pleural fluid	3	(2.0)
Bone	2	(1.3)
Internal body site	2	(1.3)

**** GAS was isolated from one site in 127 cases and multiple sites in 19 cases (Total cases=146)
GAS was isolated only from blood in 99 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

**Syndromes Associated with Invasive Group A Streptococcal Disease, by Age Group:
Denver Metropolitan Area[^], 2007**

Clinical Syndrome		No.*	(% of cases)
Age Group (years)			
<=17	Bacteremia only	10	(58.8)
	Meningitis	1	(5.8)
	Bacteremic pneumonia	1	(5.8)
	Cellulitis	1	(5.8)
	Abscess	1	(5.8)
	Septic arthritis	1	(5.8)
	Other	1	(5.8)
	Unknown	1	(5.8)
18-49	Bacteremia only	18	(32.1)
	Otitis media	1	(1.7)
	Bacteremic pneumonia	3	(5.3)
	Cellulitis	8	(14.2)
	Abscess	2	(3.5)
	Peritonitis	3	(5.3)
	Septic abortion	1	(1.7)
	Septic arthritis	12	(21.4)
	Osteomyelitis	2	(3.5)
	Endometritis	2	(3.5)
	Streptococcal Toxic Shock	1	(1.7)
	Necrotizing fasciitis	2	(3.5)
	Other	10	(17.8)
	Empyema	1	(1.7)
50+	Bacteremia only	26	(35.6)
	Bacteremic pneumonia	6	(8.2)
	Cellulitis	27	(36.9)
	Abscess	1	(1.3)
	Peritonitis	2	(2.7)
	Septic arthritis	5	(6.8)
	Osteomyelitis	1	(1.3)
	Streptococcal Toxic Shock	1	(1.3)
	Necrotizing fasciitis	2	(2.7)

(Continued)

*** Some cases had more than one syndrome**

**[^] Emerging Infections Program area: Adams, Arapahoe, Denver, Douglas, and Jefferson counties
Other infection type includes but is not limited to: bursitis and sepsis**

**Syndromes Associated with Invasive Group A Streptococcal Disease, by Age Group:
Denver Metropolitan Area[^], 2007**

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Clinical Syndrome		No.*	(% of cases)
Age Group (years)			
50+	Other	8	(10.9)
	Endocarditis	1	(1.3)
	Empyema	1	(1.3)

** Some cases had more than one syndrome*

*[^] Emerging Infections Program area: Adams, Arapahoe, Denver, Douglas, and Jefferson counties
Other infection type includes but is not limited to: bursitis and sepsis*

**Underlying Conditions Associated with Invasive Group A Streptococcal Disease:
Denver Metropolitan Area[^], 2007**

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Underlying Condition		No.*	(% of cases)
Age Group (years)			
<=17	None	10	(58.8)
	Unknown	4	(23.5)
	Deaf/hearing loss	1	(5.8)
	Other prior illness	3	(17.6)
18-49	None	17	(30.3)
	Current smoker	15	(26.7)
	Immunosuppressive therapy	3	(5.3)
	Asthma	6	(10.7)
	Emphysema/COPD	1	(1.7)
	Systemic lupus erythematosus	1	(1.7)
	Diabetes	4	(7.1)
	Nephrotic syndrome	1	(1.7)
	Renal failure/dialysis	4	(7.1)
	Cirrhosis/liver failure	3	(5.3)
	Alcohol abuse	11	(19.6)
	Atherosclerotic cardiovascular disease	1	(1.7)
	Heart failure/CHF	2	(3.5)
	IV drug user	3	(5.3)
	Obesity	4	(7.1)
	Other malignancy	6	(10.7)
	Other prior illness	4	(7.1)
50+	None	7	(9.5)
	Current smoker	13	(17.8)
	Immunoglobulin deficiency	1	(1.3)
	Immunosuppressive therapy	4	(5.4)
	Asthma	4	(5.4)
	Emphysema/COPD	6	(8.2)
	Systemic lupus erythematosus	1	(1.3)
	Diabetes	29	(39.7)

(Continued)

1 case in the <=17 age group, 22 cases in the 18-49 age group, and 42 cases in the 50+ age group had >1 underlying condition

Other prior illness/malignancy includes, but is not limited to: other concurrent infection, hepatitis C, and cancer

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

**Underlying Conditions Associated with Invasive Group A Streptococcal Disease:
Denver Metropolitan Area[^], 2007**

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Underlying Condition		No.*	(% of cases)
Age Group (years)			
50+	Nephrotic syndrome	1	(1.3)
	Renal failure/dialysis	10	(13.6)
	Cirrhosis/liver failure	2	(2.7)
	Alcohol abuse	6	(8.2)
	Atherosclerotic cardiovascular disease	9	(12.3)
	Heart failure/CHF	9	(12.3)
	Cerebral vascular accident	1	(1.3)
	IV drug user	2	(2.7)
	Obesity	10	(13.6)
	Other malignancy	13	(17.8)
	Other prior illness	8	(10.9)

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***Invasive Group A Streptococcal Disease emm Types:
Denver Metropolitan Area[^], 2007***

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group A streptococcus	No.	(% of isolates)
emm type		
01	26	(20.0)
12	15	(11.5)
28	11	(8.4)
05	11	(8.4)
76	9	(6.9)
118	8	(6.1)
89	8	(6.1)
11	7	(5.3)
04	6	(4.6)
101	4	(3.0)
03	3	(2.3)
22	2	(1.5)
33	2	(1.5)
82	2	(1.5)
77	2	(1.5)
02	2	(1.5)
75	2	(1.5)
87	1	(0.7)
78	1	(0.7)
83	1	(0.7)
90	1	(0.7)
118.0	1	(0.7)
58	1	(0.7)
06	1	(0.7)
27G	1	(0.7)
59	1	(0.7)
73	1	(0.7)
Total	130	(100.0)

Based upon reference lab testing of 130 isolates (Total cases=146)

Testing performed by the Centers for Disease Control and Prevention: Atlanta, GA

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