

Prenatal and Infant Health

Each year families across the United States bring home a healthy baby who has all the potential for a full and productive life. However, some families will suffer the loss of their child soon after birth.

Infant morbidity and mortality are critical indicators of the health of a population. Low birth weight and preterm birth result in a significant loss of life; surviving infants often sustain residual injuries that affect quality of life, and there is substantial financial cost to individuals and to society in caring for these children.

IN AN AVERAGE WEEK IN IOWA¹

- ✓ 781 babies are born.
- ✓ 54 babies are born with low birth weight.
- ✓ 90 babies are born preterm.
- ✓ 4 babies die before their first birthday.

Certain factors have proven to increase the likelihood of delivering a low birth weight or preterm infant, such as (1) multiple births; (2) cigarette smoking during pregnancy; (3) substance abuse immediately prior to conception and during pregnancy (including alcohol abuse); (4) maternal age extremes; and (5) short inter-pregnancy interval.

IN IOWA IN 2006¹

- ✓ 3.5% of all live births were multiple births.
- ✓ 27.7% of all live births were cesarean deliveries
- ✓ About 2.5% of live births was born to a woman receiving late or no prenatal care.

Birth defects rank as the leading cause of mortality in full-term newborn babies in the United States. Iowa's overall birth defect rate is approximately 4.6% of all births. The state of Iowa has taken a leadership role in birth defect surveillance and serves as a model to other states. Iowa has also

partnered with the March of Dimes' Folic Acid education campaign and the Preterm Birth Prevention campaign. Adequate folic acid intake by women of reproductive years has been demonstrated to decrease the risk of neural tube defects in children. Early prenatal care for mothers and health education to women and medical providers allow for a healthier pregnancy and improved birth outcomes.

Interventions need to focus on providing preconceptional health care to women, early and comprehensive prenatal care, and family support that includes promotion of healthy lifestyles.

¹Source: March of Dimes perinatal statistics: www.marchofdimes.com/peristats

Live Births 2006-2007

	County	#	Crude ¹ (Rank ²)	County	#	Crude ¹ (Rank ²)	
Counties with Average Population < 10,000	Adair	189	12.4 (52)	Lucas	256	13.5 (27)	
	Adams	104	12.6 (44)	Monona	219	12.0 (63)	
	Audubon	111	9.1 (99)	Monroe	189	12.4 (51)	
	Clarke	267	14.8 (11)	Osceola	136	10.4 (93)	
	Davis	274	16.0 (04)	Palo Alto	244	12.9 (38)	
	Decatur	211	12.5 (47)	Pocahontas	142	9.3 (98)	
	Fremont	189	12.5 (48)	Ringgold	119	11.6 (73)	
	Greene	223	11.7 (72)	Taylor	143	11.1 (84)	
	Howard	267	14.0 (17)	Van Buren	195	12.7 (41)	
	Humboldt	231	12.0 (64)	Wayne	180	14.2 (12)	
	Ida	189	13.6 (26)	Worth	159	10.4 (94)	
				Total	4,237	12.5	
	Counties with Average Population 10,000 – 20,000	Allamakee	412	14.2 (13)	Hardin	396	11.3 (77)
		Appanoose	322	12.3 (54)	Iowa	375	11.8 (69)
Buena Vista		549	14.0 (19)	Jefferson	297	9.6 (97)	
Butler		372	12.7 (42)	Keokuk	263	12.2 (58)	
Calhoun		216	10.8 (89)	Kossuth	353	11.3 (78)	
Cass		330	11.9 (67)	Louisa	304	12.9 (39)	
Cedar		423	11.8 (70)	Lyon	342	15.1 (09)	
Cherokee		256	10.9 (88)	Mitchell	227	10.5 (92)	
Chickasaw		309	12.6 (45)	Montgomery	275	12.4 (50)	
Clay		419	12.5 (46)	O'Brien	346	12.3 (57)	
Clayton		424	12.0 (65)	Page	354	11.1 (85)	
Crawford		517	15.7 (07)	Poweshiek	400	10.7 (90)	
Delaware		447	12.8 (40)	Sac	232	11.1 (83)	
Dickinson		352	10.6 (91)	Shelby	252	10.2 (95)	
Emmet		273	13.1 (35)	Tama	437	12.3 (56)	
Floyd		433	13.3 (32)	Union	335	13.8 (21)	
Franklin		297	14.1 (16)	Winnebago	241	11.0 (87)	
Hamilton		377	12.0 (62)	Wright	353	13.5 (29)	
Hancock		264	11.5 (74)	Total	12,774	12.2	
Counties with Average Population > 20,000	Boone	649	12.3 (53)	Lee	873	12.2 (59)	
	Buchanan	654	15.7 (08)	Mahaska	617	13.9 (20)	
	Carroll	577	13.8 (22)	Marion	873	13.4 (30)	
	Cerro Gordo	1,050	11.9 (66)	Marshall	1,230	15.7 (06)	
	Clinton	1,286	13.1 (36)	Muscatine	1,261	14.9 (10)	
	Des Moines	1,115	13.8 (25)	Plymouth	642	13.1 (33)	
	Fayette	462	11.2 (79)	Sioux	1,023	15.9 (05)	
	Henry	472	11.7 (71)	Wapello	1,009	14.2 (14)	
	Jackson	448	11.2 (81)	Webster	980	12.7 (43)	
	Jasper	825	11.2 (80)	Winnesiek	422	10.1 (96)	
			Total	16,468	13.2		
MSA Counties	Benton	599	11.3 (76)	Linn	5,713	14.0 (18)	
	Black Hawk	3,506	13.8 (23)	Madison	397	13.0 (37)	
	Bremer	582	12.3 (55)	Mills	367	12.1 (60)	
	Dallas	1,855	16.6 (02)	Polk	13,826	16.7 (01)	
	Dubuque	2,451	13.3 (31)	Pottawattamie	2,460	13.8 (24)	
	Grundy	277	11.4 (75)	Scott	4,590	14.2 (15)	
	Guthrie	244	11.1 (86)	Story	2,041	12.1 (61)	
	Harrison	386	12.5 (49)	Warren	1,042	11.8 (68)	
	Johnson	3,265	13.1 (34)	Washington	574	13.5 (28)	
	Jones	454	11.2 (82)	Woodbury	3,319	16.3 (03)	
			Total	47,948	14.4		
State Total		81,427			13.7		

¹Rates per 1,000 population
²Rank among 99 Iowa counties

Source: Iowa Department of Public Health, Vital Statistics, Birth Certificates

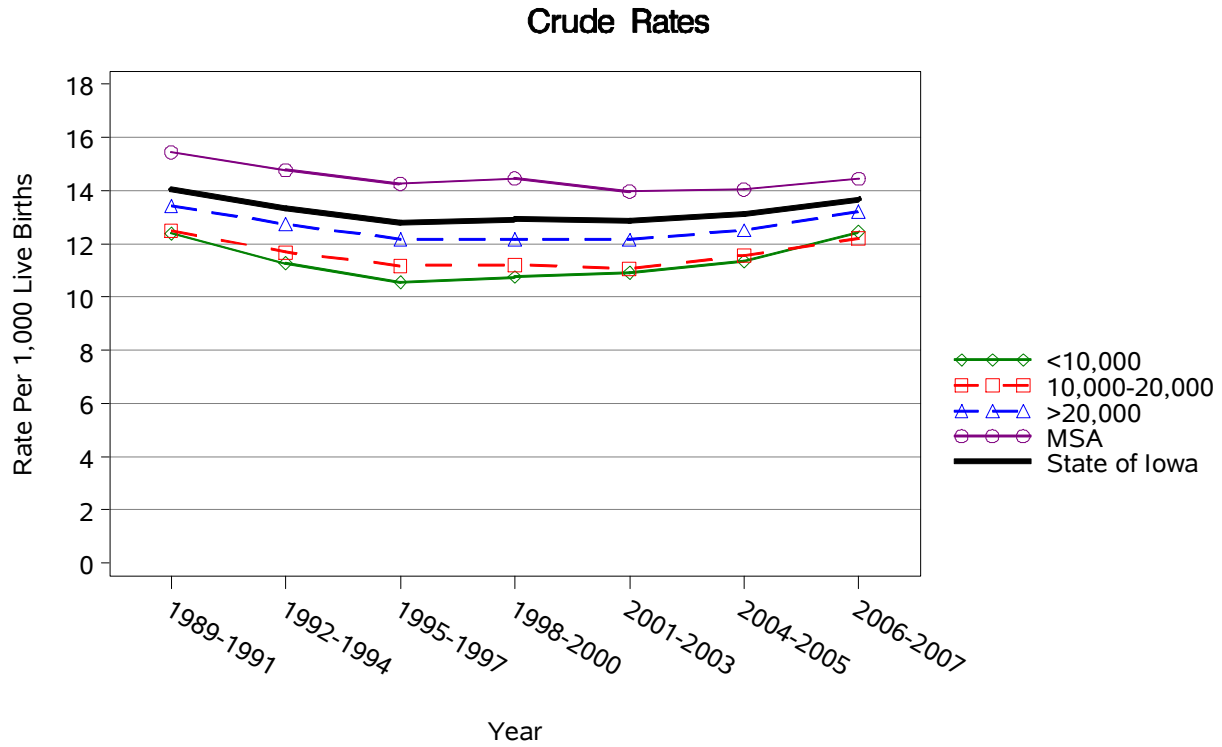
Out-of-Wedlock Births 2006-2007

	County	#	Crude ¹ (Rank ²)	County	#	Crude ¹ (Rank ²)	
Counties with Average Population < 10,000	Adair	66	349.2 (39)	Lucas	89	347.7 (40)	
	Adams	30	288.5 (62)	Monona	84	383.6 (24)	
	Audubon	40	360.4 (35)	Monroe	69	365.1 (33)	
	Clarke	103	385.8 (22)	Osceola	36	264.7 (74)	
	Davis	60	219.0 (89)	Palo Alto	74	303.3 (54)	
	Decatur	66	312.8 (53)	Pocahontas	56	394.4 (17)	
	Fremont	72	381.0 (27)	Ringgold	29	243.7 (83)	
	Greene	70	313.9 (52)	Taylor	39	272.7 (68)	
	Howard	80	299.6 (57)	Van Buren	58	297.4 (58)	
	Humboldt	89	385.3 (23)	Wayne	62	344.4 (43)	
	Ida	53	280.4 (65)	Worth	50	314.5 (51)	
				Total	1,375	324.5	
	Counties with Average Population 10,000 – 20,000	Allamakee	120	291.3 (61)	Hardin	135	340.9 (46)
		Appanoose	120	372.7 (29)	Iowa	82	218.7 (90)
Buena Vista		220	400.7 (15)	Jefferson	109	367.0 (31)	
Butler		95	255.4 (80)	Keokuk	74	281.4 (64)	
Calhoun		73	338.0 (48)	Kossuth	96	272.0 (69)	
Cass		140	424.2 (10)	Louisa	123	404.6 (14)	
Cedar		91	215.1 (91)	Lyon	53	155.0 (99)	
Cherokee		91	355.5 (36)	Mitchell	47	207.0 (95)	
Chickasaw		66	213.6 (92)	Montgomery	108	392.7 (18)	
Clay		159	379.5 (28)	O'Brien	122	352.6 (37)	
Clayton		122	287.7 (63)	Page	135	381.4 (26)	
Crawford		189	365.6 (32)	Poweshiek	137	342.5 (45)	
Delaware		115	257.3 (78)	Sac	65	280.2 (66)	
Dickinson		92	261.4 (76)	Shelby	70	277.8 (67)	
Emmet		117	428.6 (09)	Tama	173	395.9 (16)	
Floyd		149	344.1 (44)	Union	116	346.3 (42)	
Franklin		104	350.2 (38)	Winnebago	73	302.9 (55)	
Hamilton		146	387.3 (20)	Wright	165	467.4 (04)	
Hancock		77	291.7 (60)	Total	4,169	326.4	
Counties with Average Population > 20,000	Boone	174	268.1 (71)	Lee	404	462.8 (05)	
	Buchanan	158	241.6 (84)	Mahaska	203	329.0 (50)	
	Carroll	153	265.2 (73)	Marion	198	226.8 (87)	
	Cerro Gordo	406	386.7 (21)	Marshall	479	389.4 (19)	
	Clinton	538	418.4 (11)	Muscatine	515	408.4 (12)	
	Des Moines	553	496.0 (02)	Plymouth	168	261.7 (75)	
	Fayette	168	363.6 (34)	Sioux	193	188.7 (97)	
	Henry	181	383.5 (25)	Wapello	472	467.8 (03)	
	Jackson	166	370.5 (30)	Webster	505	515.3 (01)	
	Jasper	242	293.3 (59)	Winneshiek	96	227.5 (86)	
				Total	5,972	362.6	
MSA Counties	Benton	160	267.1 (72)	Linn	1,887	330.3 (49)	
	Black Hawk	1,553	443.0 (07)	Madison	101	254.4 (81)	
	Bremer	123	211.3 (94)	Mills	95	258.9 (77)	
	Dallas	350	188.7 (96)	Polk	4,696	339.6 (47)	
	Dubuque	850	346.8 (41)	Pottawattamie	1,002	407.3 (13)	
	Grundy	50	180.5 (98)	Scott	2,011	438.1 (08)	
	Guthrie	66	270.5 (70)	Story	435	213.1 (93)	
	Harrison	99	256.5 (79)	Warren	256	245.7 (82)	
	Johnson	722	221.1 (88)	Washington	136	236.9 (85)	
	Jones	137	301.8 (56)	Woodbury	1,479	445.6 (06)	
			Total	16,208	338		
State Total		27,724			340.5		

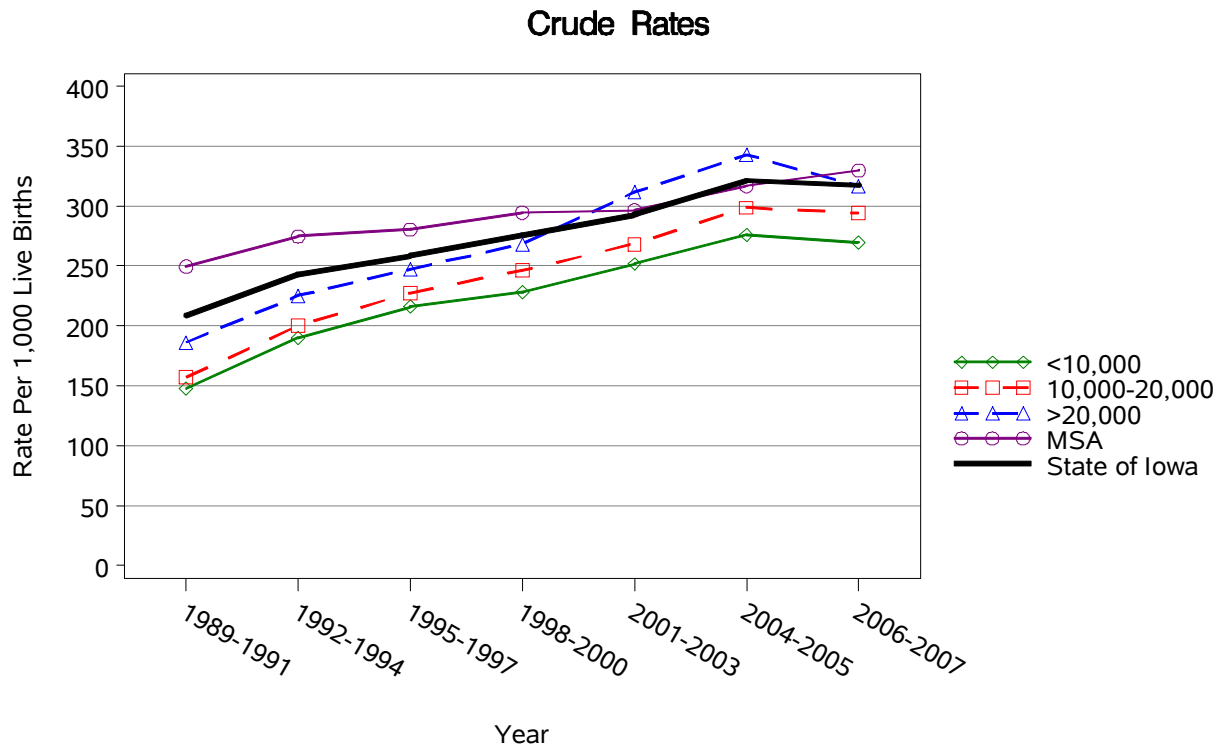
¹Rates per 1,000 live births
²Rank among 99 Iowa counties

Source: Iowa Department of Public Health, Vital Statistics, Birth Certificates

Live Births by County Group 1989-2007



Out of Wedlock Births by County Group 1989-2007



Mothers Under Age 20 2006-2007

	County	#	Crude ¹ (Rank ²)	County	#	Crude ¹ (Rank ²)	
Counties with Average Population < 10,000	Adair	17	89.9 (45)	Lucas	33	128.9 (08)	
	Adams	12	115.4 (22)	Monona	14	63.9 (75)	
	Audubon	11	99.1 (33)	Monroe	18	95.2 (37)	
	Clarke	33	123.6 (13)	Osceola	12	88.2 (49)	
	Davis	15	54.7 (84)	Palo Alto	12	49.2 (87)	
	Decatur	24	113.7 (24)	Pocahontas	21	147.9 (01)	
	Fremont	15	79.4 (61)	Ringgold	14	117.6 (20)	
	Greene	14	62.8 (77)	Taylor	17	118.9 (19)	
	Howard	22	82.4 (56)	Van Buren	18	92.3 (42)	
	Humboldt	22	95.2 (37)	Wayne	25	138.9 (04)	
	Ida	9	47.6 (89)	Worth	14	88.1 (50)	
				Total	392	92.5	
	Counties with Average Population 10,000 – 20,000	Allamakee	40	97.1 (35)	Hardin	41	103.5 (31)
		Appanoose	43	133.5 (06)	Iowa	26	69.3 (70)
Buena Vista		66	120.2 (18)	Jefferson	36	121.2 (17)	
Butler		20	53.8 (86)	Keokuk	11	41.8 (94)	
Calhoun		18	83.3 (54)	Kossuth	19	53.8 (85)	
Cass		30	90.9 (43)	Louisa	38	125.0 (10)	
Cedar		24	56.7 (83)	Lyon	10	29.2 (98)	
Cherokee		29	113.3 (25)	Mitchell	10	44.1 (92)	
Chickasaw		19	61.5 (78)	Montgomery	23	83.6 (53)	
Clay		29	69.2 (71)	O'Brien	31	89.6 (46)	
Clayton		26	61.3 (79)	Page	43	121.5 (16)	
Crawford		46	89.0 (48)	Poweshiek	28	70.0 (69)	
Delaware		32	71.6 (67)	Sac	16	69.0 (72)	
Dickinson		33	93.8 (40)	Shelby	15	59.5 (80)	
Emmet		34	124.5 (11)	Tama	47	107.6 (30)	
Floyd		41	94.7 (39)	Union	26	77.6 (62)	
Franklin		25	84.2 (52)	Winnebago	26	107.9 (29)	
Hamilton		37	98.1 (34)	Wright	46	130.3 (07)	
Hancock		31	117.4 (21)	Total	1,115	87.3	
Counties with Average Population > 20,000	Boone	54	83.2 (55)	Lee	122	139.7 (03)	
	Buchanan	30	45.9 (90)	Mahaska	76	123.2 (14)	
	Carroll	39	67.6 (73)	Marion	70	80.2 (58)	
	Cerro Gordo	94	89.5 (47)	Marshall	150	122.0 (15)	
	Clinton	172	133.7 (05)	Muscatine	157	124.5 (12)	
	Des Moines	142	127.4 (09)	Plymouth	41	63.9 (76)	
	Fayette	42	90.9 (43)	Sioux	59	57.7 (81)	
	Henry	45	95.3 (36)	Wapello	142	140.7 (02)	
	Jackson	46	102.7 (32)	Webster	106	108.2 (28)	
	Jasper	67	81.2 (57)	Winneshiek	18	42.7 (93)	
				Total	1,672	101.5	
MSA Counties	Benton	39	65.1 (74)	Linn	411	71.9 (66)	
	Black Hawk	324	92.4 (41)	Madison	28	70.5 (68)	
	Bremer	23	39.5 (96)	Mills	28	76.3 (63)	
	Dallas	89	48.0 (88)	Polk	1,188	85.9 (51)	
	Dubuque	196	80.0 (60)	Pottawattamie	283	115.0 (23)	
	Grundy	10	36.1 (97)	Scott	508	110.7 (27)	
	Guthrie	7	28.7 (99)	Story	92	45.1 (91)	
	Harrison	22	57.0 (82)	Warren	78	74.9 (65)	
	Johnson	136	41.7 (95)	Washington	46	80.1 (59)	
	Jones	34	74.9 (64)	Woodbury	368	110.9 (26)	
			Total	3,910	81.5		
State Total		7,089			87.1		

¹Rates per 1,000 live births

Source: Iowa Department of Public Health, Vital Statistics, Birth Certificates

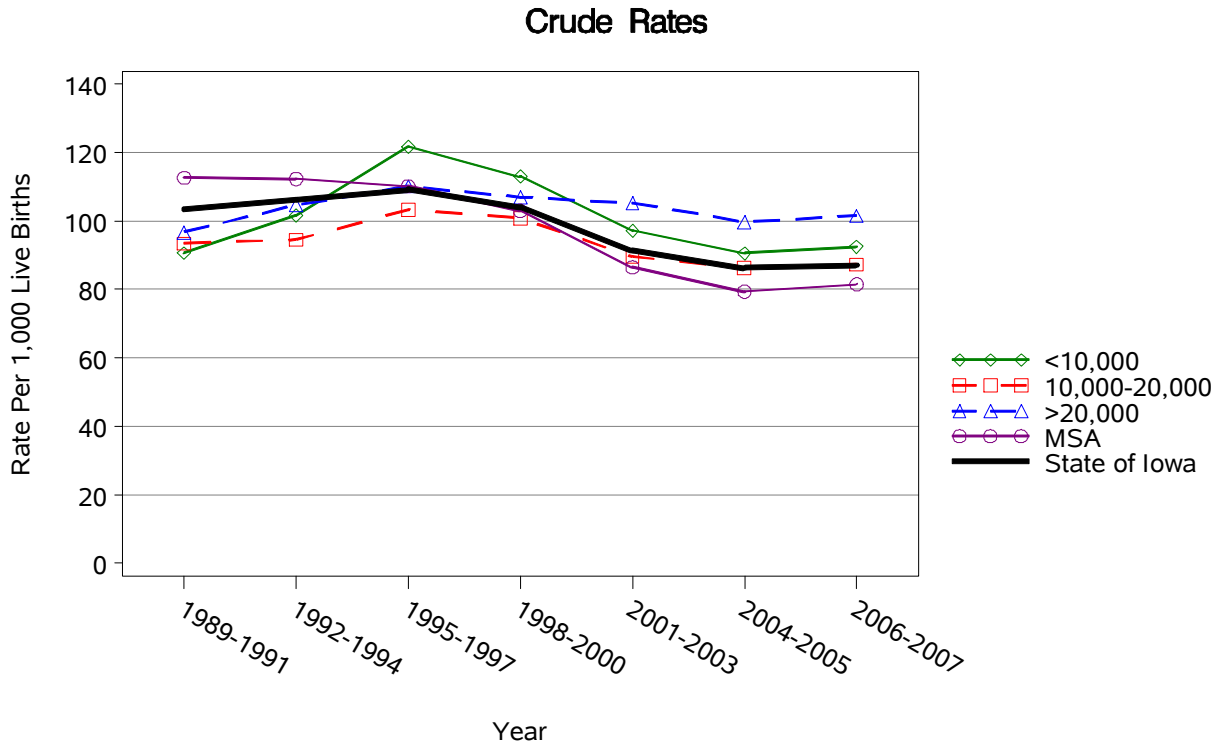
Low Birth Weight (<2500 Grams) 2006-2007

	Counties with Average Population < 10,000			Counties with Average Population 10,000 – 20,000			Counties with Average Population > 20,000			MSA Counties			
	County	#	Crude ¹	County	#	Crude ¹	County	#	Crude ¹	County	#	Crude ¹	
Counties with Average Population < 10,000	Adair	13	68.8	Lucas	22	85.9							
	Adams	7	67.3	Monona	13	59.4							
	Audubon	9	81.1	Monroe	15	79.4							
	Clarke	25	93.6	Osceola	*	*							
	Davis	11	40.1	Palo Alto	19	77.9							
	Decatur	14	66.4	Pocahontas	7	49.3							
	Fremont	9	47.6	Ringgold	8	67.2							
	Greene	18	80.7	Taylor	*	*							
	Howard	16	59.9	Van Buren	15	76.9							
	Humboldt	15	64.9	Wayne	18	100							
	Ida	14	74.1	Worth	*	*							
				Total	279	65.8							
	Counties with Average Population 10,000 – 20,000	Allamakee	23	55.8	Hardin	22	55.6						
		Appanoose	26	80.7	Iowa	15	40						
Buena Vista		34	61.9	Jefferson	12	40.4							
Butler		21	56.5	Keokuk	24	91.3							
Calhoun		11	50.9	Kossuth	27	76.5							
Cass		22	66.7	Louisa	28	92.1							
Cedar		35	82.7	Lyon	22	64.3							
Cherokee		19	74.2	Mitchell	12	52.9							
Chickasaw		21	68	Montgomery	19	69.1							
Clay		27	64.4	O'Brien	18	52							
Clayton		29	68.4	Page	30	84.7							
Crawford		27	52.2	Poweshiek	26	65							
Delaware		26	58.2	Sac	11	47.4							
Dickinson		23	65.3	Shelby	12	47.6							
Emmet		26	95.2	Tama	33	75.5							
Floyd		22	50.8	Union	16	47.8							
Franklin		17	57.2	Winnebago	21	87.1							
Hamilton		30	79.6	Wright	17	48.2							
Hancock		10	37.9	Total	814	63.7							
Counties with Average Population > 20,000	Boone	33	50.8	Lee	68	77.9							
	Buchanan	32	48.9	Mahaska	48	77.8							
	Carroll	28	48.5	Marion	61	69.9							
	Cerro Gordo	61	58.1	Marshall	94	76.4							
	Clinton	101	78.5	Muscatine	90	71.4							
	Des Moines	97	87	Plymouth	36	56.1							
	Fayette	31	67.1	Sioux	49	47.9							
	Henry	25	53	Wapello	71	70.4							
	Jackson	29	64.7	Webster	62	63.3							
	Jasper	78	94.5	Winneshiek	27	64							
			Total	1,121	68.1								
MSA Counties	Benton	37	61.8	Linn	403	70.5							
	Black Hawk	272	77.6	Madison	23	57.9							
	Bremer	47	80.8	Mills	34	92.6							
	Dallas	119	64.2	Polk	1003	72.5							
	Dubuque	139	56.7	Pottawattamie	193	78.5							
	Grundy	25	90.3	Scott	333	72.5							
	Guthrie	11	45.1	Story	117	57.3							
	Harrison	32	82.9	Warren	78	74.9							
	Johnson	228	69.8	Washington	44	76.7							
	Jones	34	74.9	Woodbury	229	69							
			Total	3,401	70.9								
State Total	5,615	69											

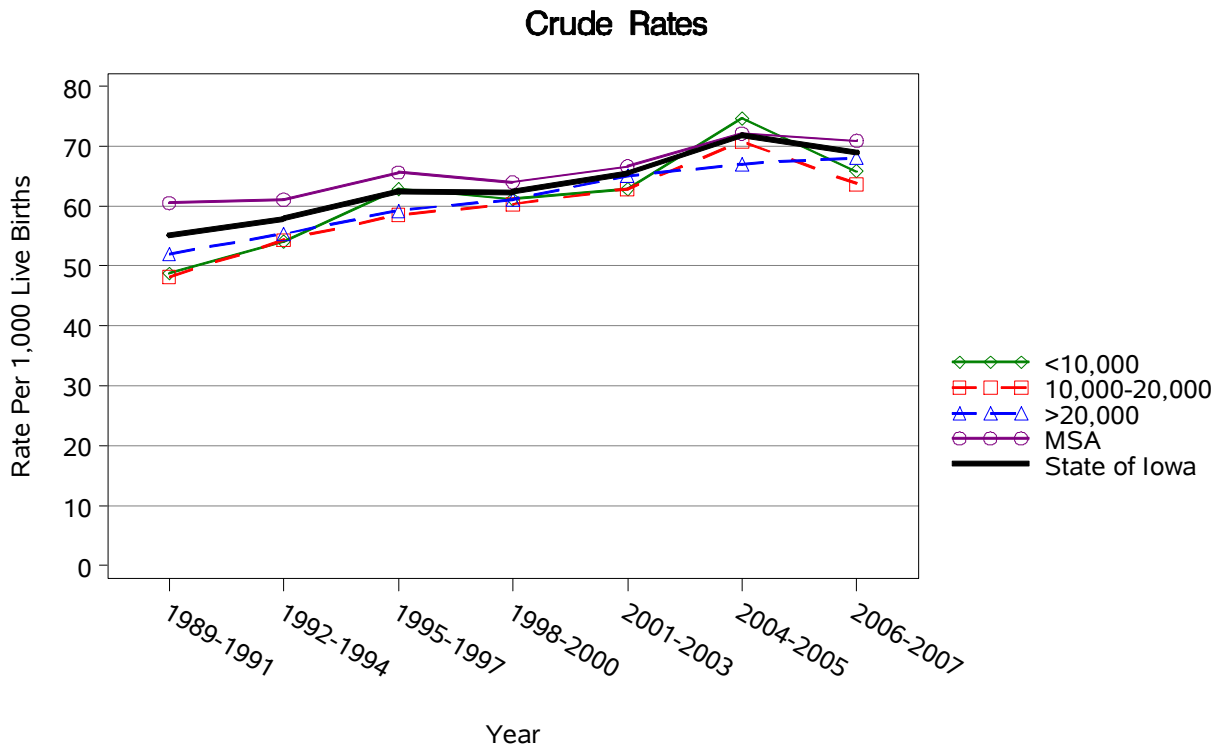
¹Rates per 1,000 live births

Source: Iowa Department of Public Health, Vital Statistics, Birth Certificates
* represents a count less than 5

Mothers Under Age 20 by County Group 1989-2007



Low Birth Weight (<2500 grams) by County Group 1989-2007



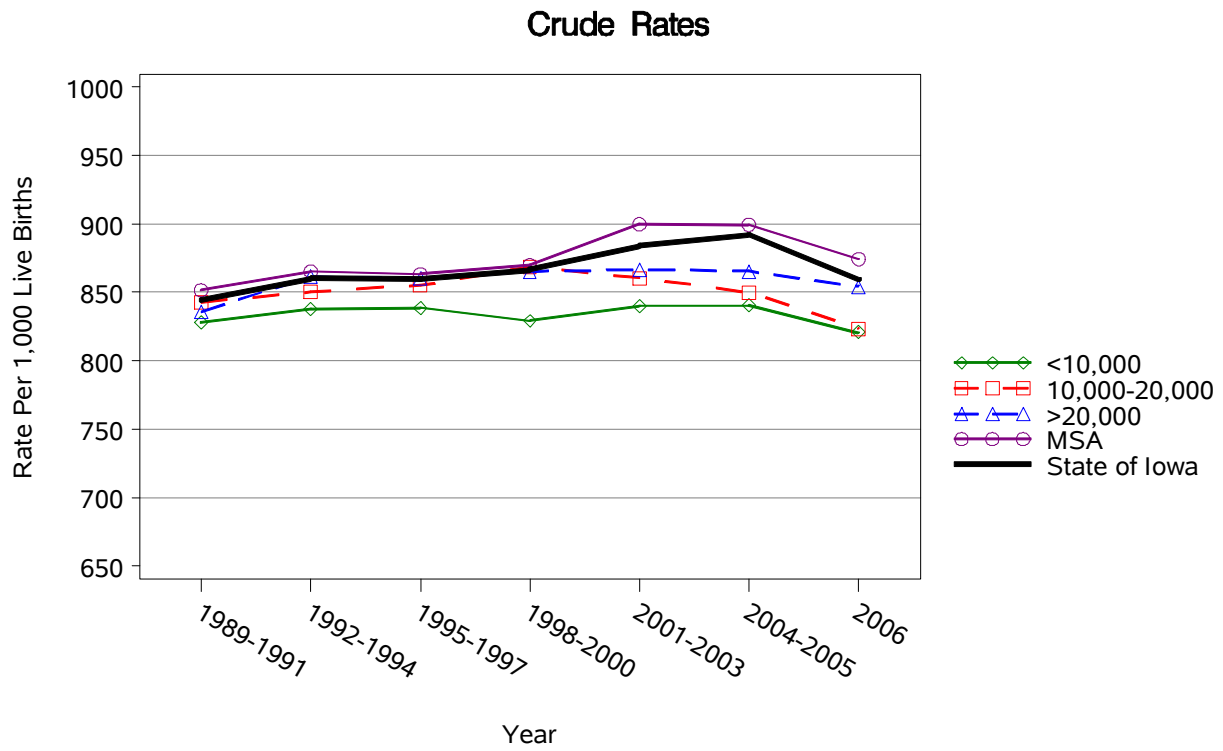
Mothers Who Began Prenatal Care in First Trimester 2006

	County	#	Crude ¹ (Rank ²)	County	#	Crude ¹ (Rank ²)	
Counties with Average Population < 10,000	Adair	86	886.6 (40)	Lucas	99	792.0 (79)	
	Adams	54	843.8 (62)	Monona	110	916.7 (09)	
	Audubon	54	947.4 (02)	Monroe	84	875.0 (42)	
	Clarke	107	849.2 (56)	Osceola	62	885.7 (41)	
	Davis	97	702.9 (92)	Palo Alto	113	896.8 (24)	
	Decatur	74	762.9 (85)	Pocahontas	59	867.6 (47)	
	Fremont	60	740.7 (87)	Ringgold	43	728.8 (89)	
	Greene	106	828.1 (70)	Taylor	67	848.1 (57)	
	Howard	96	755.9 (86)	Van Buren	63	707.9 (91)	
	Humboldt	104	832.0 (68)	Wayne	69	784.1 (81)	
	Ida	89	967.4 (01)	Worth	59	686.0 (94)	
				Total	1,755	820.9	
	Counties with Average Population 10,000 – 20,000	Allamakee	159	768.1 (83)	Hardin	170	867.3 (48)
		Appanoose	128	831.2 (69)	Iowa	195	946.6 (03)
Buena Vista		210	807.7 (75)	Jefferson	115	809.9 (74)	
Butler		152	894.1 (29)	Keokuk	129	928.1 (06)	
Calhoun		96	888.9 (34)	Kossuth	142	855.4 (53)	
Cass		125	786.2 (80)	Louisa	131	891.2 (32)	
Cedar		181	891.6 (31)	Lyon	151	862.9 (51)	
Cherokee		106	890.8 (33)	Mitchell	73	613.4 (98)	
Chickasaw		124	794.9 (78)	Montgomery	115	839.4 (65)	
Clay		173	843.9 (61)	O'Brien	143	841.2 (63)	
Clayton		181	800.9 (77)	Page	150	847.5 (59)	
Crawford		195	783.1 (82)	Poweshiek	175	935.8 (04)	
Delaware		192	888.9 (34)	Sac	98	823.5 (71)	
Dickinson		155	896.0 (27)	Shelby	110	909.1 (18)	
Emmet		104	712.3 (90)	Tama	193	854.0 (54)	
Floyd		142	645.5 (96)	Union	148	870.6 (45)	
Franklin		84	677.4 (95)	Winnebago	105	739.4 (88)	
Hamilton		156	847.8 (58)	Wright	123	698.9 (93)	
Hancock		79	603.1 (99)	Total	5,208	823.4	
Counties with Average Population > 20,000	Boone	301	914.9 (12)	Lee	403	887.7 (38)	
	Buchanan	286	841.2 (63)	Mahaska	293	909.9 (17)	
	Carroll	276	913.9 (14)	Marion	378	895.7 (28)	
	Cerro Gordo	316	630.7 (97)	Marshall	477	764.4 (84)	
	Clinton	590	903.5 (21)	Muscatine	568	897.3 (23)	
	Des Moines	482	865.4 (49)	Plymouth	281	918.3 (08)	
	Fayette	201	873.9 (44)	Sioux	445	852.5 (55)	
	Henry	196	886.9 (39)	Wapello	404	814.5 (73)	
	Jackson	207	903.9 (20)	Webster	391	806.2 (76)	
	Jasper	361	898.0 (22)	Winnesiek	164	863.2 (50)	
				Total	7,020	854.2	
MSA Counties	Benton	289	932.3 (05)	Linn	2548	888.1 (37)	
	Black Hawk	1585	892.5 (30)	Madison	187	912.2 (15)	
	Bremer	272	915.8 (10)	Mills	159	888.3 (36)	
	Dallas	817	914.9 (12)	Polk	5915	855.9 (52)	
	Dubuque	1056	874.2 (43)	Pottawattamie	1023	833.7 (66)	
	Grundy	125	905.8 (19)	Scott	1836	817.1 (72)	
	Guthrie	106	868.9 (46)	Story	919	919.9 (07)	
	Harrison	148	845.7 (60)	Warren	469	910.7 (16)	
	Johnson	1478	915.2 (11)	Washington	263	832.3 (67)	
	Jones	190	896.2 (26)	Woodbury	1521	896.3 (25)	
			Total	20,906	874.3		
State Total		34,889	859.5				

¹Rates per 1,000 live births
²Rank among 99 Iowa counties

Source: Iowa Department of Public Health, Vital Statistics, Birth Certificates

Mothers Who Began Prenatal Care in First Trimester by County Group 1989-2006



Mothers Who Smoked During Pregnancy 2006-2007

	County	#	Crude ¹ (Rank ²)	County	#	Crude ¹ (Rank ²)	
Counties with Average Population < 10,000	Adair	42	222.2 (15)	Lucas	46	179.7 (39)	
	Adams	25	240.4 (13)	Monona	61	278.5 (02)	
	Audubon	27	243.2 (12)	Monroe	35	185.2 (35)	
	Clarke	54	202.2 (23)	Osceola	12	88.2 (94)	
	Davis	30	109.5 (89)	Palo Alto	41	168.0 (45)	
	Decatur	60	284.4 (01)	Pocahontas	31	218.3 (17)	
	Fremont	39	206.3 (22)	Ringgold	31	260.5 (05)	
	Greene	42	188.3 (33)	Taylor	21	146.9 (68)	
	Howard	43	161.0 (56)	Van Buren	31	159.0 (59)	
	Humboldt	48	207.8 (21)	Wayne	36	200.0 (25)	
	Ida	41	216.9 (19)	Worth	24	150.9 (65)	
				Total	820	193.5	
	Counties with Average Population 10,000 – 20,000	Allamakee	49	118.9 (82)	Hardin	63	159.1 (58)
		Appanoose	83	257.8 (06)	Iowa	46	122.7 (81)
Buena Vista		51	92.9 (93)	Jefferson	63	212.1 (20)	
Butler		58	155.9 (61)	Keokuk	51	193.9 (32)	
Calhoun		38	175.9 (40)	Kossuth	57	161.5 (55)	
Cass		88	266.7 (04)	Louisa	50	164.5 (54)	
Cedar		50	118.2 (83)	Lyon	40	117.0 (84)	
Cherokee		50	195.3 (30)	Mitchell	22	96.9 (91)	
Chickasaw		40	129.4 (78)	Montgomery	76	276.4 (03)	
Clay		83	198.1 (26)	O'Brien	55	159.0 (60)	
Clayton		65	153.3 (64)	Page	87	245.8 (11)	
Crawford		76	147.0 (67)	Poweshiek	67	167.5 (48)	
Delaware		52	116.3 (85)	Sac	30	129.3 (79)	
Dickinson		49	139.2 (71)	Shelby	42	166.7 (50)	
Emmet		45	164.8 (53)	Tama	60	137.3 (73)	
Floyd		79	182.4 (38)	Union	84	250.7 (09)	
Franklin		33	111.1 (88)	Winnebago	32	132.8 (76)	
Hamilton		76	201.6 (24)	Wright	59	167.1 (49)	
Hancock		41	155.3 (62)	Total	2,090	163.6	
Counties with Average Population > 20,000	Boone	110	169.5 (43)	Lee	224	256.6 (07)	
	Buchanan	87	133.0 (75)	Mahaska	121	196.1 (29)	
	Carroll	78	135.2 (74)	Marion	125	143.2 (69)	
	Cerro Gordo	168	160.0 (57)	Marshall	162	131.7 (77)	
	Clinton	327	254.3 (08)	Muscatine	212	168.1 (44)	
	Des Moines	263	235.9 (14)	Plymouth	95	148.0 (66)	
	Fayette	102	220.8 (16)	Sioux	67	65.5 (98)	
	Henry	81	171.6 (42)	Wapello	198	196.2 (28)	
	Jackson	87	194.2 (31)	Webster	242	246.9 (10)	
	Jasper	153	185.5 (34)	Winneshiek	33	78.2 (96)	
				Total	2,935	178.2	
MSA Counties	Benton	93	155.3 (63)	Linn	788	137.9 (72)	
	Black Hawk	606	172.8 (41)	Madison	66	166.2 (51)	
	Bremer	67	115.1 (87)	Mills	67	182.6 (37)	
	Dallas	137	73.9 (97)	Polk	1,712	123.8 (80)	
	Dubuque	349	142.4 (70)	Pottawattamie	536	217.9 (18)	
	Grundy	26	93.9 (92)	Scott	771	168.0 (47)	
	Guthrie	41	168.0 (45)	Story	170	83.3 (95)	
	Harrison	76	196.9 (27)	Warren	121	116.1 (86)	
	Johnson	159	48.7 (99)	Washington	60	104.5 (90)	
	Jones	84	185.0 (36)	Woodbury	551	166.0 (52)	
			Total	6,480	135.1		
State Total		12,325	151.4				

¹Rates per 1,000 live births
²Rank among 99 Iowa counties

Source: Iowa Department of Public Health, Vital Statistics, Birth Certificates

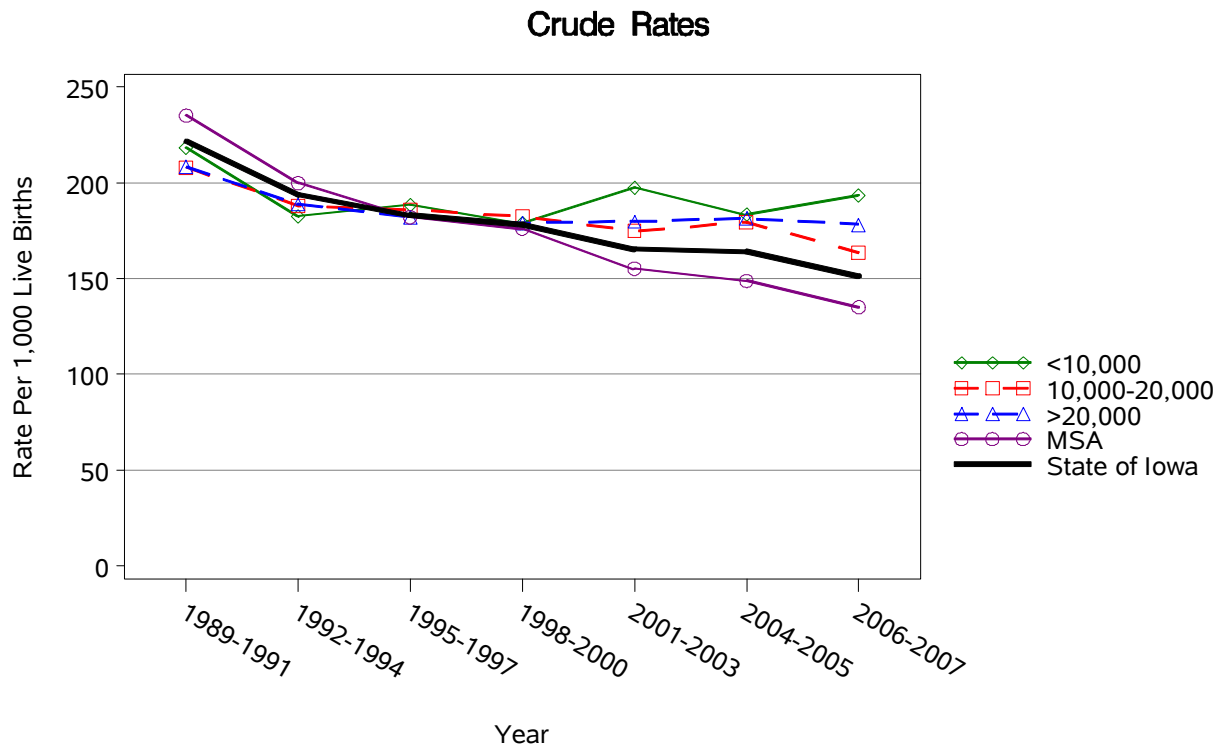
Mothers Who Drank During Pregnancy 2006

	County	#	Crude ¹	County	#	Crude ¹	
Counties with Average Population < 10,000	Adair	*	*	Lucas	*	*	
	Adams	*	*	Monona	*	*	
	Audubon	*	*	Monroe	*	*	
	Clarke	*	*	Osceola	*	*	
	Davis	*	*	Palo Alto	*	*	
	Decatur	*	*	Pocahontas	*	*	
	Fremont	*	*	Ringgold	*	*	
	Greene	*	*	Taylor	*	*	
	Howard	*	*	Van Buren	*	*	
	Humboldt	*	*	Wayne	*	*	
	Ida	*	*	Worth	*	*	
				Total	10	4.7	
	Counties with Average Population 10,000 – 20,000	Allamakee	*	*	Hardin	*	*
		Appanoose	*	*	Iowa	*	*
Buena Vista		5	19.2	Jefferson	*	*	
Butler		*	*	Keokuk	*	*	
Calhoun		*	*	Kossuth	*	*	
Cass		*	*	Louisa	*	*	
Cedar		*	*	Lyon	*	*	
Cherokee		*	*	Mitchell	*	*	
Chickasaw		*	*	Montgomery	*	*	
Clay		*	*	O'Brien	*	*	
Clayton		*	*	Page	*	*	
Crawford		*	*	Poweshiek	*	*	
Delaware		*	*	Sac	*	*	
Dickinson		*	*	Shelby	*	*	
Emmet		*	*	Tama	*	*	
Floyd		*	*	Union	*	*	
Franklin		*	*	Winnebago	*	*	
Hamilton		*	*	Wright	*	*	
Hancock		*	*	Total	38	6	
Counties with Average Population > 20,000		Boone	*	*	Lee	*	*
	Buchanan	*	*	Mahaska	*	*	
	Carroll	*	*	Marion	*	*	
	Cerro Gordo	*	*	Marshall	*	*	
	Clinton	*	*	Muscatine	*	*	
	Des Moines	*	*	Plymouth	*	*	
	Fayette	*	*	Sioux	*	*	
	Henry	*	*	Wapello	*	*	
	Jackson	*	*	Webster	6	12.4	
	Jasper	*	*	Winneshiek	*	*	
			Total	40	4.9		
MSA Counties	Benton	*	*	Linn	14	4.9	
	Black Hawk	5	2.8	Madison	*	*	
	Bremer	*	*	Mills	*	*	
	Dallas	*	*	Polk	66	9.5	
	Dubuque	11	9.1	Pottawattamie	11	9	
	Grundy	*	*	Scott	16	7.1	
	Guthrie	*	*	Story	8	8	
	Harrison	*	*	Warren	*	*	
	Johnson	*	*	Washington	*	*	
	Jones	*	*	Woodbury	7	4.1	
			Total	163	6.8		
State Total		251			6.2		

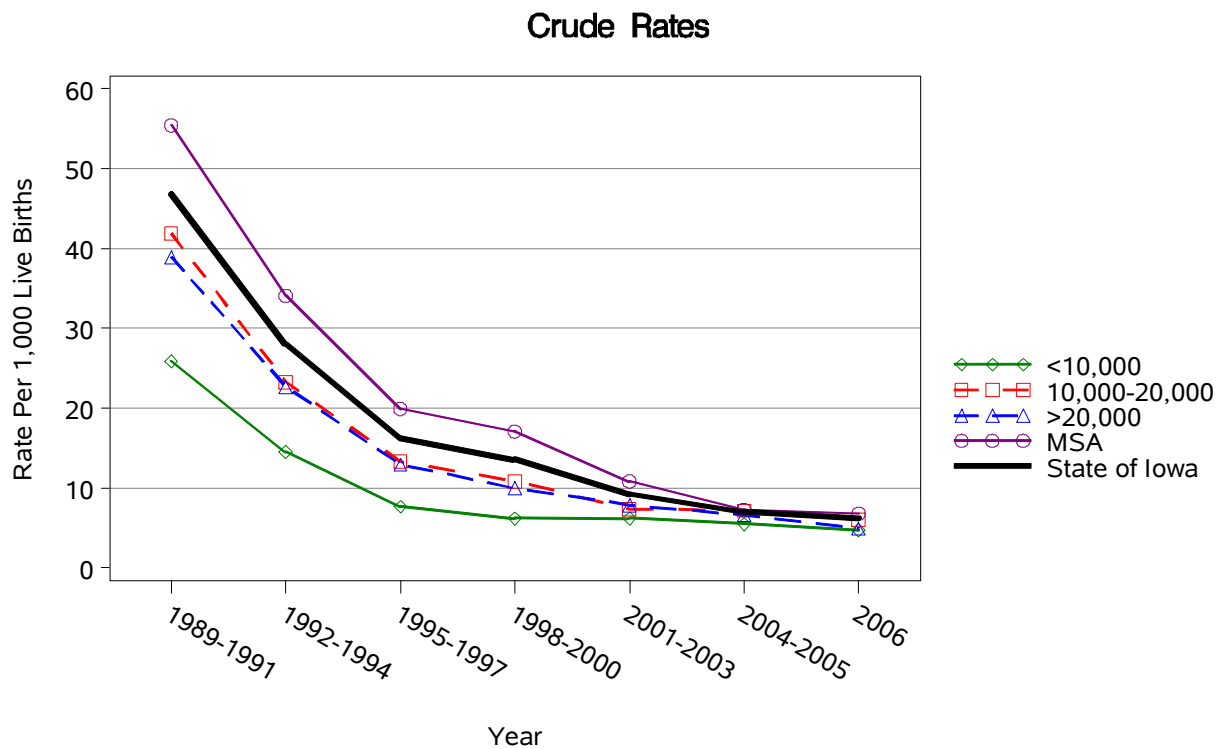
¹Rates per 1,000 live births

Source: Iowa Department of Public Health, Vital Statistics, Birth Certificates
* represents a count less than 5

Mothers Who Smoked During Pregnancy by County Group 1989-2007



Mothers Who Drank During Pregnancy by County Group 1989-2006



Fetal Deaths 2006-2007

	County	#	Crude ¹	County	#	Crude ¹	
Counties with Average Population < 10,000	Adair	*	*	Lucas	*	*	
	Adams	*	*	Monona	*	*	
	Audubon	*	*	Monroe	*	*	
	Clarke	*	*	Osceola	*	*	
	Davis	*	*	Palo Alto	*	*	
	Decatur	*	*	Pocahontas	*	*	
	Fremont	*	*	Ringgold	*	*	
	Greene	*	*	Taylor	*	*	
	Howard	*	*	Van Buren	5	25.6	
	Humboldt	*	*	Wayne	*	*	
	Ida	*	*	Worth	*	*	
				Total	21	5	
	Counties with Average Population 10,000 – 20,000	Allamakee	*	*	Hardin	*	*
		Appanoose	*	*	Iowa	*	*
Buena Vista		6	10.9	Jefferson	*	*	
Butler		*	*	Keokuk	*	*	
Calhoun		*	*	Kossuth	*	*	
Cass		*	*	Louisa	*	*	
Cedar		*	*	Lyon	*	*	
Cherokee		*	*	Mitchell	*	*	
Chickasaw		*	*	Montgomery	*	*	
Clay		*	*	O'Brien	*	*	
Clayton		*	*	Page	*	*	
Crawford		*	*	Poweshiek	*	*	
Delaware		*	*	Sac	*	*	
Dickinson		*	*	Shelby	*	*	
Emmet		*	*	Tama	*	*	
Floyd		*	*	Union	*	*	
Franklin		*	*	Winnebago	*	*	
Hamilton		*	*	Wright	*	*	
Hancock		*	*	Total	60	4.7	
Counties with Average Population > 20,000	Boone	7	10.8	Lee	6	6.9	
	Buchanan	5	7.6	Mahaska	7	11.3	
	Carroll	*	*	Marion	9	10.3	
	Cerro Gordo	13	12.4	Marshall	5	4.1	
	Clinton	6	4.7	Muscatine	*	*	
	Des Moines	11	9.9	Plymouth	8	12.5	
	Fayette	0	0	Sioux	*	*	
	Henry	*	*	Wapello	8	7.9	
	Jackson	*	*	Webster	*	*	
	Jasper	8	9.7	Winneshiek	*	*	
				Total	105	6.4	
MSA Counties	Benton	*	*	Linn	34	6	
	Black Hawk	19	5.4	Madison	*	*	
	Bremer	*	*	Mills	*	*	
	Dallas	8	4.3	Polk	85	6.1	
	Dubuque	12	4.9	Pottawattamie	10	4.1	
	Grundy	*	*	Scott	22	4.8	
	Guthrie	*	*	Story	8	3.9	
	Harrison	*	*	Warren	5	4.8	
	Johnson	32	9.8	Washington	*	*	
	Jones	5	11	Woodbury	17	5.1	
			Total	265	5.5		
State Total	451	5.5					

¹Rates per 1,000 live births

Source: Iowa Department of Public Health, Vital Statistics, Birth Certificates
* represents a count less than 5

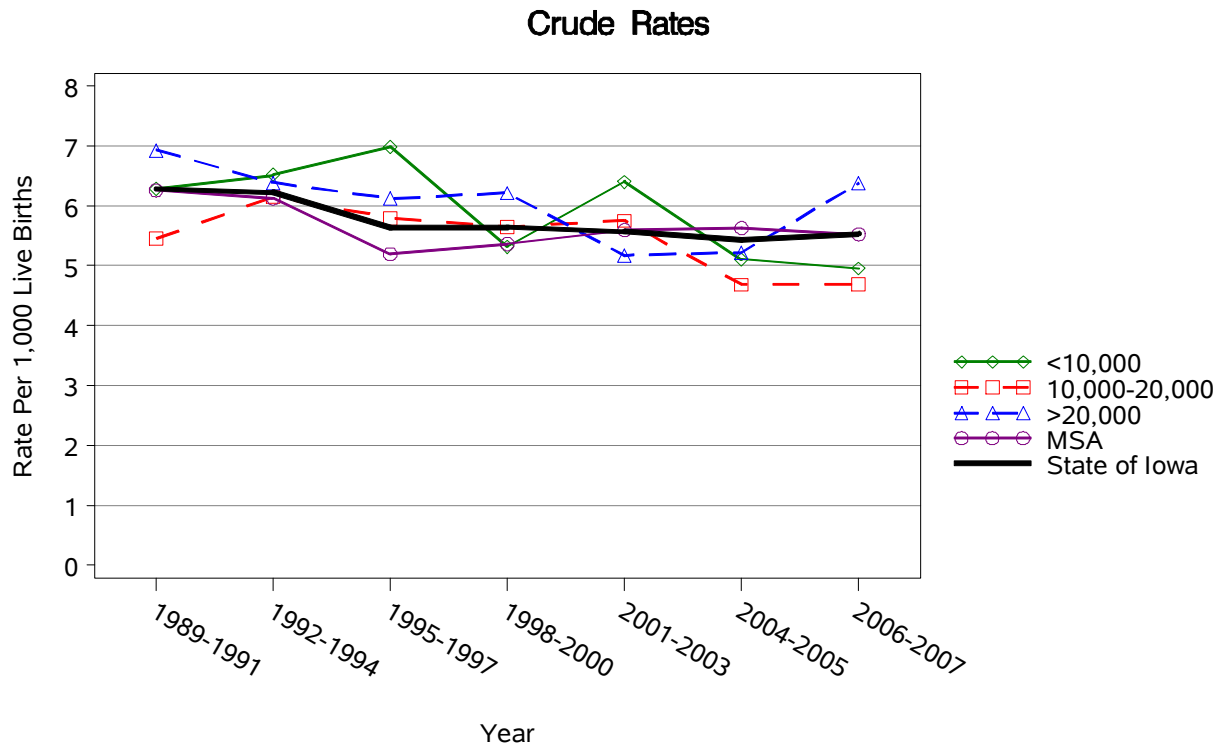
Neonatal Deaths 2006-2007

	County	#	Crude ¹	County	#	Crude ¹	
Counties with Average Population < 10,000	Adair	*	*	Lucas	*	*	
	Adams	*	*	Monona	*	*	
	Audubon	*	*	Monroe	*	*	
	Clarke	*	*	Osceola	*	*	
	Davis	*	*	Palo Alto	*	*	
	Decatur	*	*	Pocahontas	*	*	
	Fremont	*	*	Ringgold	*	*	
	Greene	*	*	Taylor	*	*	
	Howard	*	*	Van Buren	*	*	
	Humboldt	*	*	Wayne	*	*	
	Ida	*	*	Worth	*	*	
				Total	15	3.5	
	Counties with Average Population 10,000 – 20,000	Allamakee	*	*	Hardin	*	*
		Appanoose	*	*	Iowa	*	*
Buena Vista		*	*	Jefferson	*	*	
Butler		*	*	Keokuk	*	*	
Calhoun		*	*	Kossuth	*	*	
Cass		*	*	Louisa	*	*	
Cedar		*	*	Lyon	*	*	
Cherokee		*	*	Mitchell	*	*	
Chickasaw		*	*	Montgomery	*	*	
Clay		*	*	O'Brien	*	*	
Clayton		*	*	Page	*	*	
Crawford		*	*	Poweshiek	*	*	
Delaware		*	*	Sac	*	*	
Dickinson		*	*	Shelby	*	*	
Emmet		5	18.3	Tama	*	*	
Floyd		*	*	Union	*	*	
Franklin		*	*	Winnebago	*	*	
Hamilton		*	*	Wright	*	*	
Hancock	*	*	Total	32	2.5		
Counties with Average Population > 20,000	Boone	*	*	Lee	*	*	
	Buchanan	*	*	Mahaska	*	*	
	Carroll	*	*	Marion	*	*	
	Cerro Gordo	*	*	Marshall	*	*	
	Clinton	10	7.8	Muscatine	*	*	
	Des Moines	5	4.5	Plymouth	*	*	
	Fayette	*	*	Sioux	9	8.8	
	Henry	*	*	Wapello	*	*	
	Jackson	*	*	Webster	*	*	
	Jasper	*	*	Winneshiek	*	*	
			Total	58	3.5		
MSA Counties	Benton	*	*	Linn	20	3.5	
	Black Hawk	9	2.6	Madison	*	*	
	Bremer	*	*	Mills	*	*	
	Dallas	*	*	Polk	51	3.7	
	Dubuque	7	2.9	Pottawattamie	15	6.1	
	Grundy	*	*	Scott	12	2.6	
	Guthrie	*	*	Story	6	2.9	
	Harrison	*	*	Warren	*	*	
	Johnson	15	4.6	Washington	*	*	
	Jones	*	*	Woodbury	12	3.6	
			Total	161	3.4		
State Total	266	3.3					

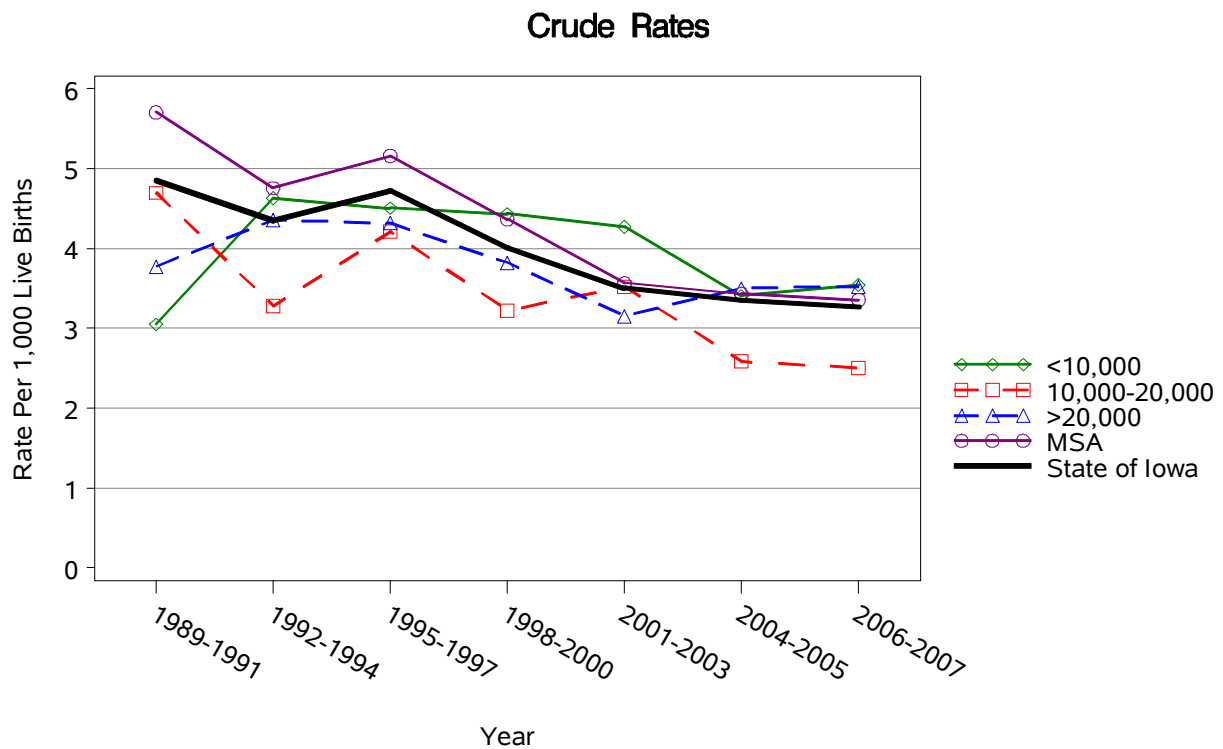
¹Rates per 1,000 live births

Source: Iowa Department of Public Health, Vital Statistics, Birth Certificates
* represents a count less than 5

Fetal Deaths by County Group 1989-2007



Neonatal Deaths by County Group 1989-2007



Perinatal Deaths 2006-2007

	County	#	Crude ¹	County	#	Crude ¹	
Counties with Average Population < 10,000	Adair	*	*	Lucas	*	*	
	Adams	*	*	Monona	*	*	
	Audubon	*	*	Monroe	*	*	
	Clarke	*	*	Osceola	*	*	
	Davis	*	*	Palo Alto	*	*	
	Decatur	*	*	Pocahontas	*	*	
	Fremont	*	*	Ringgold	*	*	
	Greene	*	*	Taylor	*	*	
	Howard	*	*	Van Buren	6	30.8	
	Humboldt	*	*	Wayne	*	*	
	Ida	*	*	Worth	*	*	
				Total	36	8.5	
	Counties with Average Population 10,000 – 20,000	Allamakee	*	*	Hardin	*	*
		Appanoose	*	*	Iowa	*	*
Buena Vista		6	10.9	Jefferson	*	*	
Butler		*	*	Keokuk	*	*	
Calhoun		*	*	Kossuth	5	14.2	
Cass		*	*	Louisa	*	*	
Cedar		*	*	Lyon	*	*	
Cherokee		*	*	Mitchell	*	*	
Chickasaw		*	*	Montgomery	*	*	
Clay		*	*	O'Brien	*	*	
Clayton		*	*	Page	*	*	
Crawford		*	*	Poweshiek	*	*	
Delaware		*	*	Sac	*	*	
Dickinson		*	*	Shelby	*	*	
Emmet		5	18.3	Tama	*	*	
Floyd		*	*	Union	*	*	
Franklin		*	*	Winnebago	5	20.7	
Hamilton		*	*	Wright	*	*	
Hancock		*	*	Total	92	7.2	
Counties with Average Population > 20,000		Boone	7	10.8	Lee	8	9.2
	Buchanan	7	10.7	Mahaska	11	17.8	
	Carroll	*	*	Marion	10	11.5	
	Cerro Gordo	17	16.2	Marshall	6	4.9	
	Clinton	16	12.4	Muscatine	7	5.6	
	Des Moines	16	14.3	Plymouth	10	15.6	
	Fayette	*	*	Sioux	10	9.8	
	Henry	*	*	Wapello	9	8.9	
	Jackson	*	*	Webster	6	6.1	
	Jasper	9	10.9	Winneshiek	*	*	
			Total	163	9.9		
MSA Counties	Benton	*	*	Linn	54	9.5	
	Black Hawk	28	8	Madison	*	*	
	Bremer	*	*	Mills	*	*	
	Dallas	12	6.5	Polk	136	9.8	
	Dubuque	19	7.8	Pottawattamie	25	10.2	
	Grundy	*	*	Scott	34	7.4	
	Guthrie	*	*	Story	14	6.9	
	Harrison	*	*	Warren	8	7.7	
	Johnson	47	14.4	Washington	*	*	
	Jones	5	11	Woodbury	29	8.7	
			Total	426	8.9		
State Total	717	8.8					

¹Rates per 1,000 live births

Source: Iowa Department of Public Health, Vital Statistics, Birth Certificates
* represents a count less than 5

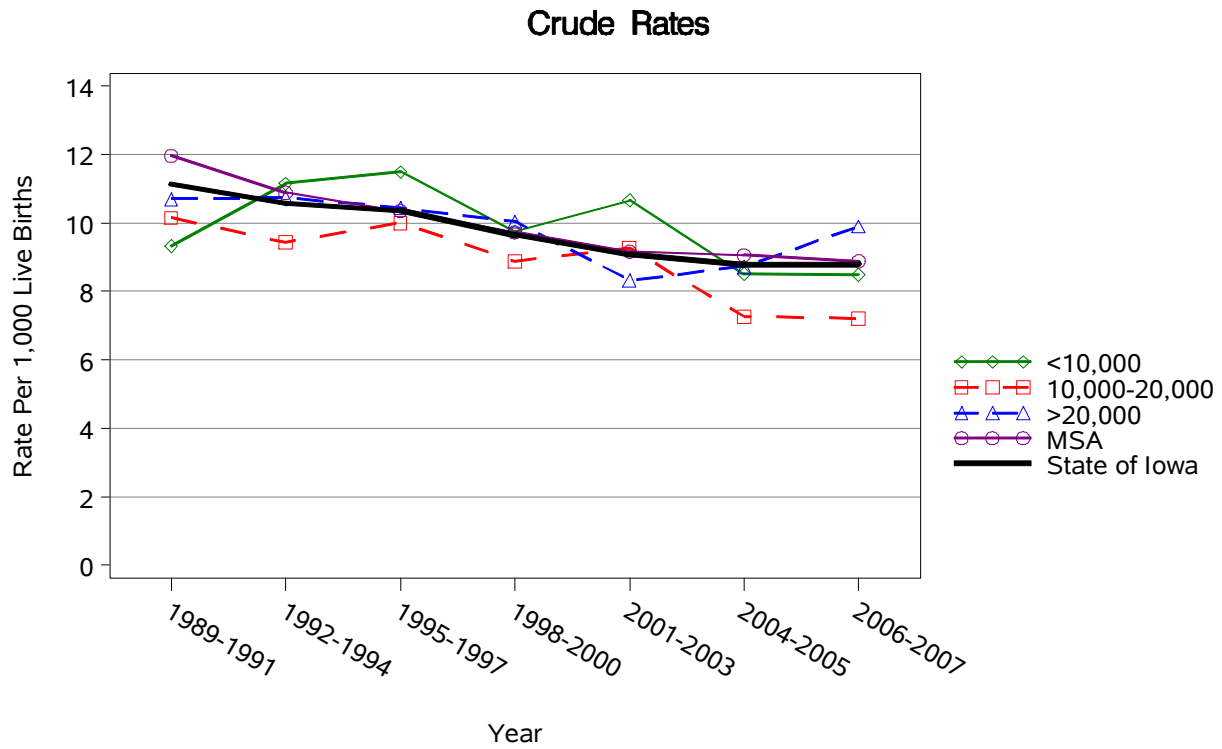
Infant Deaths 2006-2007

	County	#	Crude ¹	County	#	Crude ¹	
Counties with Average Population < 10,000	Adair	*	*	Lucas	*	*	
	Adams	*	*	Monona	*	*	
	Audubon	*	*	Monroe	*	*	
	Clarke	*	*	Osceola	*	*	
	Davis	*	*	Palo Alto	*	*	
	Decatur	*	*	Pocahontas	*	*	
	Fremont	*	*	Ringgold	*	*	
	Greene	*	*	Taylor	*	*	
	Howard	*	*	Van Buren	*	*	
	Humboldt	*	*	Wayne	*	*	
	Ida	*	*	Worth	*	*	
				Total	24	5.7	
	Counties with Average Population 10,000 – 20,000	Allamakee	*	*	Hardin	*	*
		Appanoose	*	*	Iowa	*	*
Buena Vista		*	*	Jefferson	*	*	
Butler		*	*	Keokuk	*	*	
Calhoun		*	*	Kossuth	*	*	
Cass		*	*	Louisa	*	*	
Cedar		*	*	Lyon	*	*	
Cherokee		*	*	Mitchell	*	*	
Chickasaw		*	*	Montgomery	*	*	
Clay		*	*	O'Brien	*	*	
Clayton		*	*	Page	*	*	
Crawford		5	9.7	Poweshiek	*	*	
Delaware		*	*	Sac	*	*	
Dickinson		*	*	Shelby	*	*	
Emmet		5	18.3	Tama	*	*	
Floyd		*	*	Union	*	*	
Franklin		*	*	Winnebago	*	*	
Hamilton		*	*	Wright	*	*	
Hancock	*	*	Total	63	4.9		
Counties with Average Population > 20,000	Boone	*	*	Lee	*	*	
	Buchanan	*	*	Mahaska	5	8.1	
	Carroll	*	*	Marion	*	*	
	Cerro Gordo	7	6.7	Marshall	*	*	
	Clinton	16	12.4	Muscatine	*	*	
	Des Moines	7	6.3	Plymouth	*	*	
	Fayette	*	*	Sioux	10	9.8	
	Henry	*	*	Wapello	5	5	
	Jackson	*	*	Webster	*	*	
	Jasper	*	*	Winneshiek	*	*	
			Total	86	5.2		
MSA Counties	Benton	*	*	Linn	30	5.3	
	Black Hawk	18	5.1	Madison	*	*	
	Bremer	5	8.6	Mills	*	*	
	Dallas	7	3.8	Polk	80	5.8	
	Dubuque	14	5.7	Pottawattamie	18	7.3	
	Grundy	*	*	Scott	28	6.1	
	Guthrie	*	*	Story	6	2.9	
	Harrison	*	*	Warren	*	*	
	Johnson	19	5.8	Washington	*	*	
	Jones	*	*	Woodbury	21	6.3	
			Total	259	5.4		
State Total	432	5.3					

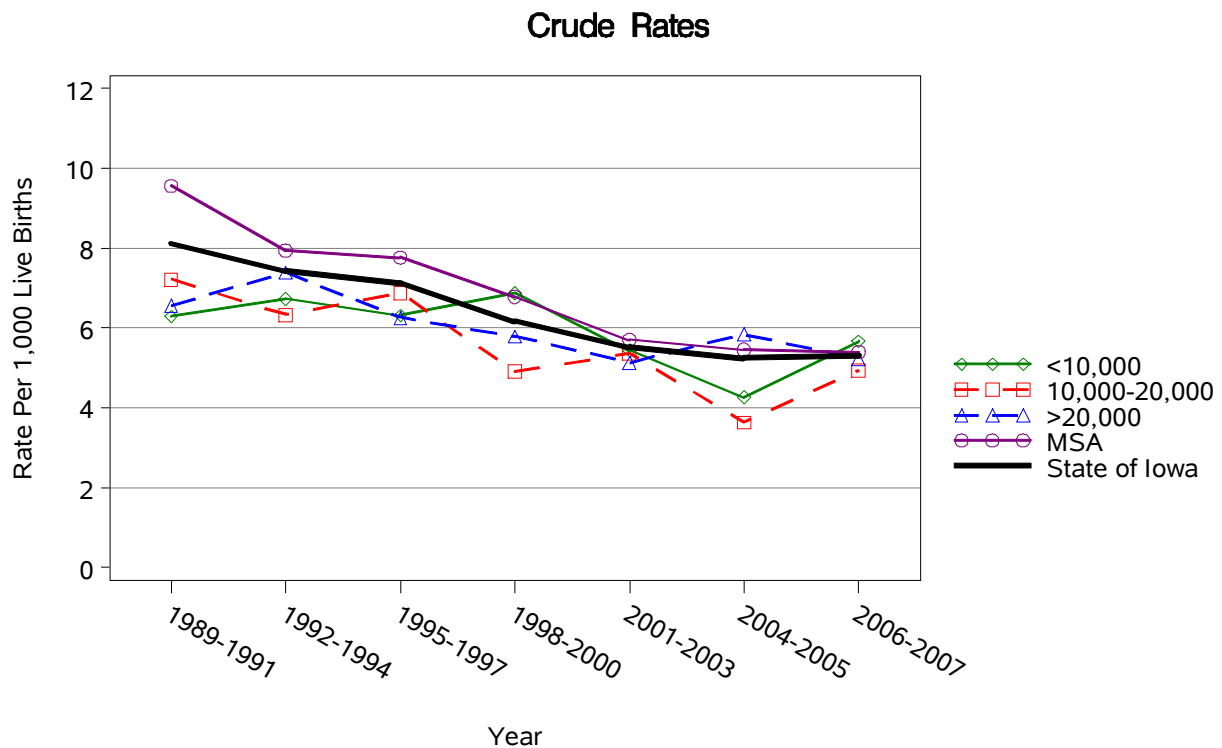
¹Rates per 1,000 live births

Source: Iowa Department of Public Health, Vital Statistics, Birth Certificates
* represents a count less than 5

Perinatal Deaths by County Group 1989-2007



Infant Deaths by County Group 1989-2007



Birth Defects 2004-2005

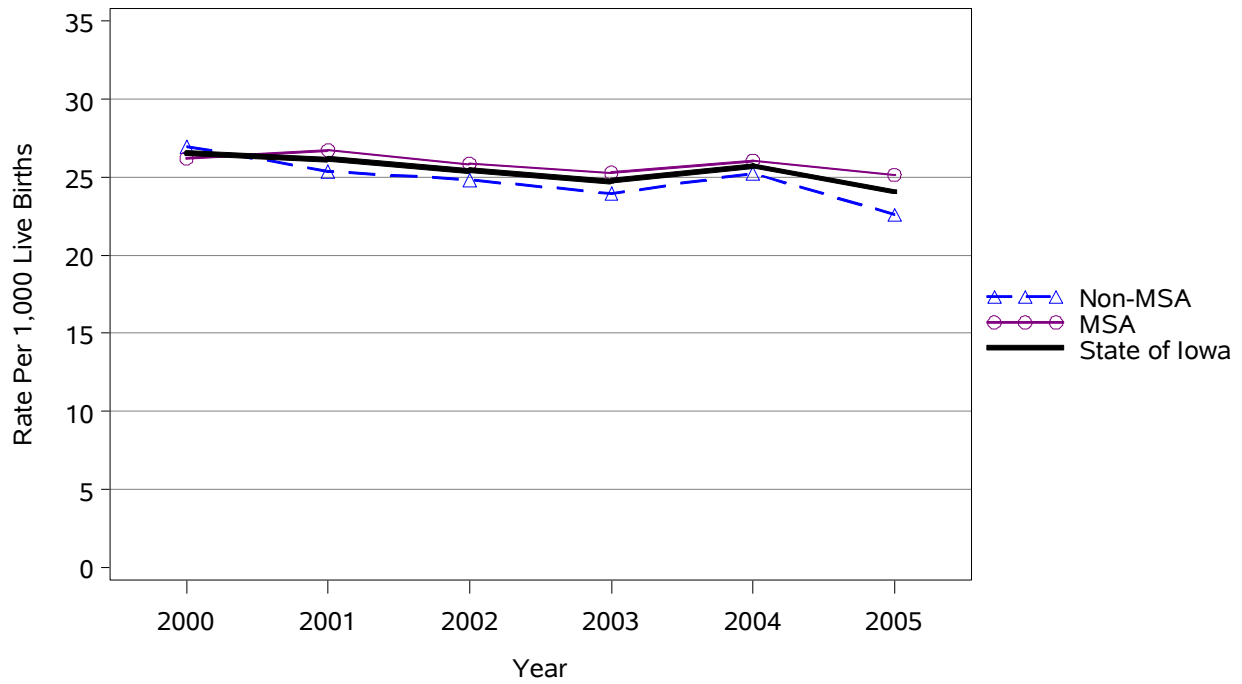
	County	#	Crude ¹	County	#	Crude ¹	
Counties with Average Population < 10,000	Adair	*	*	Lucas	8	38.3	
	Adams	*	*	Monona	*	*	
	Audubon	*	*	Monroe	*	*	
	Clarke	5	19.5	Osceola	*	*	
	Davis	7	27.4	Palo Alto	*	*	
	Decatur	*	*	Pocahontas	*	*	
	Fremont	*	*	Ringgold	*	*	
	Greene	*	*	Taylor	*	*	
	Howard	5	20.0	Van Buren	8	43.0	
	Humboldt	7	26.5	Wayne	*	*	
	Ida	*	*	Worth	*	*	
				Total	40	10.0	
	Counties with Average Population 10,000 – 20,000	Allamakee	6	14.6	Hardin	7	17.2
		Appanoose	5	15.2	Iowa	14	35.9
Buena Vista		14	25.0	Jefferson	16	49.5	
Butler		10	28.6	Keokuk	6	23.2	
Calhoun		7	32.5	Kossuth	6	16.8	
Cass		6	18.7	Louisa	9	30.7	
Cedar		15	37.6	Lyon	*	*	
Cherokee		5	22.1	Mitchell	*	*	
Chickasaw		*	*	Montgomery	7	26.2	
Clay		11	26.9	O'Brien	*	*	
Clayton		10	25.2	Page	*	*	
Crawford		5	11.0	Poweshiek	12	31.7	
Delaware		13	32.6	Sac	*	*	
Dickinson		*	*	Shelby	5	23.1	
Emmet		*	*	Tama	12	24.3	
Floyd		11	26.5	Union	7	23.7	
Franklin		*	*	Winnebago	8	36.2	
Hamilton		6	15.5	Wright	10	28.5	
Hancock		*	*	Total	243	19.5	
Counties with Average Population > 20,000	Boone	9	15.1	Lee	26	32.8	
	Buchanan	18	30.6	Mahaska	20	34.8	
	Carroll	10	18.9	Marion	23	28.0	
	Cerro Gordo	33	34.0	Marshall	33	26.3	
	Clinton	41	33.5	Muscatine	42	35.8	
	Des Moines	31	30.2	Plymouth	13	20.4	
	Fayette	8	17.4	Sioux	6	6.4	
	Henry	13	25.9	Wapello	34	34.7	
	Jackson	12	30.7	Webster	14	14.5	
	Jasper	24	26.8	Winneshiek	6	15.1	
			Total	416	26.5		
MSA Counties	Benton	17	28.0	Linn	149	26.9	
	Black Hawk	127	37.4	Madison	10	26.0	
	Bremer	16	31.7	Mills	6	15.8	
	Dallas	38	26.2	Polk	288	22.3	
	Dubuque	72	30.9	Pottawattamie	37	15.1	
	Grundy	17	72.3	Scott	134	29.0	
	Guthrie	8	34.3	Story	33	17.9	
	Harrison	7	22.4	Warren	27	25.6	
	Johnson	72	23.9	Washington	16	28.8	
	Jones	15	33.6	Woodbury	75	23.3	
			Total	1,164	25.6		
State Total		1,863			24.0		

¹Rates per 1,000 live births

Source: Iowa Department of Public Health, Vital Statistics, Birth Certificates
* represents a count less than 5

Birth Defects by County Group 2000-2005

Crude Rates



¹ < 10,000 and 10,000-20,000 combined due to substantial year to year variation

Selected Birth Defects in Iowa 2004-2005

Defect Name	Defects	Crude Rate ¹
Anencephalus	22	0.28
Spina bifida without anencephalus	35	0.45
Hydrocephalus without spina bifida	85	1.09
Encephalocele	*	*
Microcephalus	78	1.00
Anophthalmia/microphthalmia	24	0.31
Congenital Cataract	22	0.28
Anotia/microtia	10	0.13
Common truncus	9	0.11
Transposition of great arteries	36	0.46
Tetralogy of Fallot	27	0.35
Ventricular septal defect	431	5.55
Atrial septal defect	258	3.32
Endocardial cushion defect	58	0.75
Pulmonary valve atresia and stenosis	73	0.94
Tricuspid valve atresia and stenosis	14	0.18
Ebsteins's anomaly	5	0.06
Aortic valve stenosis	34	0.44
Hypoplastic left heart syndrome	18	0.23
Patent ductus arteriosus	206	2.65
Coarctation of aorta	36	0.46
Cleft palate without cleft lip	58	0.75
Cleft lip with and without cleft palate	89	1.15
Choanal atresia	15	0.19
Esophageal atresia/tracheoesophageal fistula	17	0.22
Rectal and large intestinal atresia/stenosis	46	0.59
Pyloric stenosis	228	2.94
Hirschsprung's disease (congenital megacolon)	12	0.15
Biliary atresia	*	*
Renal agenesis/hypoplasia	55	0.71
Bladder exstrophy	7	0.09
Obstructive genitourinary defect	212	2.73
Hypospadias and epispadias	130	1.67
Reduction deformity, upper limbs	40	0.51
Reduction deformity, lower limbs	17	0.22
Gastroschisis	38	0.49
Omphalocele	24	0.31
Congenital hip dislocation	64	0.82
Diaphragmatic hernia	6	0.08
Trisomy 13	16	0.21
Down syndrome	129	1.66
Trisomy 18	24	0.31
Amniotic bands	13	0.17

¹Rates per 1,000 live births

Source: Iowa Birth Defects Registry, The University of Iowa
 * represents a count less than 5

[This page has been intentionally left blank.]