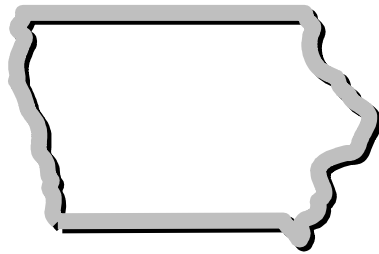


2002 IOWA

Termination Of Pregnancy Report



Iowa Department of Public Health
State Center for Health Statistics



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Comparative Summary

Overall, in 2002, annual pregnancy terminations in Iowa increased. In 2002, a total of 7,280 pregnancy terminations were reported in the reporting areas. This represents a 6.4% increase from 2001, when the same reporting areas showed 6,845 pregnancy terminations. Induced terminations of pregnancy increased by 508 cases from 5,722 to 6,230 in 2002, which represents an 8.9% increase. Spontaneous terminations of pregnancy decreased by 75 cases from 1,119 to 1,044, which represents a 6.7% decrease.

Pregnancy Terminations by Maternal and Child Health (MCH) Region

The numbers, ratios, and rates of reported termination of pregnancy are presented by MCH region.

- **The fertility rate** for the state as a whole decreased from 62.6 per 1,000 women of childbearing age in 2000 to 61.5 per 1,000 in 2001. The state's pattern of fertility rate remained stable through 1999. Region 7 continued to have the highest fertility rate and region 12 continued to have the lowest rate.
- **The pregnancy rate** showed a generally steady decline since 1999. In 2001, the overall rate of pregnancy for the state was 73.8 per 1,000 women of childbearing age, compared to 74.6 per 1,000 women in 1999 and 74.1 per 1,000 women in 2000.
- **The induced termination rate** for the state as a whole increased from 9.4 per 1,000 women of childbearing age in 2001 to 10.2 per 1,000 women in 2002, which represents an 8.5% increase. As reported in 2001, Region 23 continued to have the highest induced termination rate in 2002, while Region 12 had the highest rate in 2000 and 1999.
- **The spontaneous termination rate** for the state as a whole dropped to 1.7 per 1,000 women of childbearing age in 2002 from 1.8 per 1,000 women in 2001, which represents a 5.6% decrease. As reported in previous years, Region 14 had the highest spontaneous termination rate.
- **The induced termination ratio** for the state as a whole increased from 149.6 per 1,000 live births in 2001 to 165.6 per 1,000 live births in 2002, which represents a 10.7% increase. As reported in previous years, Region 12 had the highest induced termination ratio.
- **The spontaneous termination ratio** for the state as a whole decreased from 29.3 per 1,000 live births in 2001 to 27.8 per 1,000 live births in 2002, which represents a 5.1% decrease. As reported in previous years, Region 14 had the highest spontaneous termination ratio.

In summary, the geographic distribution of the 2002 termination of pregnancy data showed a pattern similar to that of previous years.

Pregnancy Terminations by Month of Occurrence

The total number of live births was 37,610 in 2001, compared to 38,250 in 2000. The lowest number of births was in February and the highest number of births was in August, which showed the same pattern as in previous years.

As in 2001, the lowest number of induced terminations in 2002 occurred in November. The lowest number of spontaneous terminations occurred in December of 2002, compared to November of 2001. The highest number of induced terminations were in January of both 2001 and 2002. The highest number of spontaneous terminations was in May, compared to March in 2000. This pattern suggests the monthly variations are most likely due to chance or unknown causes.

Pregnancy Terminations by Gestational Age of Fetus

As in the past, approximately 94% of all terminations of pregnancy were obtained during the first 13 weeks of gestation. Induced terminations increased from 94.6% to 94.9% (5,415 cases in 2001 vs. 5,913 cases in 2002) during the first trimester (0-13 weeks), and decreased from 5.2% to 4.8% (297 cases in 2001 vs. 297 cases in 2002) during the second trimester (14-28 weeks). Spontaneous terminations decreased from 95.5% to 91.5% (1,069 cases in 2001 vs. 955 cases in 2002) during the first trimester, but increased from 3.8% to 6.8% (43 cases in 2001 vs. 71 cases in 2002) during the second trimester.

Considered by gestational month, both induced and spontaneous terminations occurred during the first six months of pregnancy in 2001 and 2002. Most induced and spontaneous terminations were obtained during the 2nd and 3rd gestational months.

Pregnancy Terminations by Marital Status

For women whose marital status was reported, approximately 72% of women who obtained terminations of pregnancy were unmarried. In 2002, induced terminations increased by 65 cases and spontaneous terminations decreased by 67 cases for the married population. The induced terminations decreased by 461 cases and the spontaneous terminations decreased by 10 cases for the single population.

Pregnancy Terminations by Level of Education

For women whose education level was reported, approximately 50% of women who obtained terminations of pregnancy had 9 to 12 years of education and 40% had 12 to 16 years of education. The number of induced terminations increased for women at all levels of education in 2002 compared to 2001, while the number of spontaneous terminations decreased (for age groups <=8 years, 9-12 years, 13-16 years, and 17-20 years).

Pregnancy Terminations by Mother's Race

For women whose race were known, approximately 83% of women who obtained a termination of pregnancy were white and 7% were black. This generally followed the proportion of each racial group in Iowa's population. Small minority populations in Iowa make it difficult to conclude much from this finding.

Pregnancy Terminations by Mother's Age

The number of induced terminations increased for all age groups in 2002. The distribution of induced terminations peaked at 21 years old. The distribution of spontaneous terminations was much shallower, peaking at 28 years old.

Note:

- 1. The number of reported pregnancy terminations was relatively low in November and December, compared to the other months. More termination records may come with the 2003 data. We will add these data at the end of 2003.*
- 2. MCH regions shown in this report are from 1999, and may differ from current regions.*
- 3. Iowa's female population and live births data are quite stable over years. Due to the availability of data, 2001 live birth data and 2000 female population data were used to calculate 2002 rates and ratios.*

INTRODUCTION

This report is a compilation of data on reported terminations of pregnancy in Iowa. The terminations actually occurred during the period from January 2002 through December 2002. The annual reporting of termination of pregnancy events is required by state legislation. With this legislative requirement, Iowa joins 45 other states, the District of Columbia, and New York City in providing information on pregnancy, termination of pregnancy, live births, and fetal deaths (1). This information contributes to the ability of public health officials and policy makers to better understand these issues.

The Iowa reporting system is a variation on the model published by the National Center for Health Statistics in 1987 (2). The guidelines described the criteria and expectations for reporting pregnancy information.

Purpose

One of the purposes of termination of pregnancy surveillance is to determine if there are areas of the state with higher than expected rates of spontaneous pregnancy loss. The surveillance system also provides state health planners the information needed to address public health issues related to pregnancy loss. Data are collected using the 26 maternal and child health (MCH) regions as geographic identifiers. Most of these 26 regions are composed of multiple counties, although a few, which comprise Metropolitan Statistical Areas (MSAs), are single counties. During analysis, birth data (including pregnancy and fertility data) from these regions are used to achieve a proper perspective. Other uses of these data may include issues of family planning, maternal and child health, access to health care, quality of care, and sexual education (3). It should be noted, however, that since termination of pregnancy for Iowa citizens can occur across state boundaries, undercounting of certain events is likely.

Definitions and Types

A standard definition of the termination of pregnancy is

“the termination of pregnancy before the fetus is viable. In the medical sense, the terms abortion and miscarriage both refer to the termination of pregnancy before the fetus is capable of survival outside the uterus. In general language, however, abortion most often refers to deliberate interruption of pregnancy, whereas miscarriage connotes a spontaneous or natural loss of the fetus.” (4)

Two types of terminations of pregnancy are examined in this report: spontaneous and induced. Spontaneous termination is “abortion occurring naturally” (4). “It has been estimated that 10 to 12 percent of all pregnancies end in spontaneous abortion” (4). Some research has shown that spontaneous abortions occur commonly, are directly associated with increasing maternal age, and may cluster by chance (5). The same article suggests a possible link between spontaneous termination and nitrate-contaminated water. Hormonal imbalances, emotions, and psychological disturbances frequently play an important role in spontaneous termination (4). Some other causes include trauma, stress, malformation of the fetus, and drug or alcohol use. Hemorrhage, shock, and infection are also involved in spontaneous terminations. Treatment usually consists of dilation and curettage (D&C) to remove tissues that may be retained in the uterus (4).

The difference between a spontaneous termination and a fetal death is that a fetal death is “a birth which fails to show any signs of life after delivery. Reportable fetal deaths in Iowa are those greater than 20 weeks gestation.” (6).

Induced termination is “abortion brought on intentionally by medication or instrumentation” (4).

For each year since 1969, the Centers for Disease Control and Prevention (CDC) has collected and compiled data on abortions by state or area of occurrence (1), making it possible for Iowa data to be compared to the nation as a whole or to other states. This report is based on abortion data for 2002, provided to the State Center for Health Statistics, Iowa Department of Public Health.

DATA

The data for this report are from incidents that occurred during the period of January 2002 through December 2002. A total of 7,280 abortions were reported during this time period. Of these, 6,230 were reported as induced, and 1,044 were reported as spontaneous. There were six cases where termination type was not identified.

It should be noted that Iowa has no agreement with border states on mandatory reporting of terminations in those states; therefore, the current data may be incomplete. It should also be noted that birth data used for calculation in this report are actually from 2001 since birth data for the year 2002 will not be available and complete until late summer (2003). The numbers for 2001 terminations shown here may differ somewhat from what was presented in last year's report because of additional information received after the report was published. Data files are typically closed by the end of March for the previous year. For the sake of clarity, figures show only the occurrence of terminations for the year 2002.

Data were analyzed based on key demographic factors and other variables as specified in the *Code of Iowa*. These variables include Maternal and Child Health (MCH) region, age, race, marital status, educational level of the woman, and gestational age of the fetus. The findings are shown in the tables and figures in this report.

Terminations by Month of Occurrence

Table 1 shows the number of Iowa births and terminations by month of occurrence from 1999 to 2002. The 2002 termination data are shown in Figure 1. Both Table 1 and Figure 1 show a relatively constant pattern of terminations and births during each of the months of occurrence. The lowest number of births was in February. The lowest number of induced terminations was in November, and the lowest number of spontaneous terminations was in December. The highest number of births was in August, the highest number of induced terminations was in January, and the highest number of spontaneous terminations was in May. This pattern does not resemble data shown last year. This means the monthly variations are most likely due to chance or unknown causes.

Terminations by Gestational Age of Fetus

All induced and spontaneous terminations in the state occurred during the first and second trimesters of pregnancy. The first trimester is from 0 to 13 weeks of gestation; the second trimester is from 14 to 28 weeks. Approximately 95% of induced terminations took place in the first trimester, while 5% were second-trimester terminations. Most induced terminations occurred in the second month of gestation (see Tables 2a and 2b and Figure 2). Spontaneous terminations display a similar distribution.

Figure 1

2001 Birth Counts and Terminations by Month of Occurrence, 2002

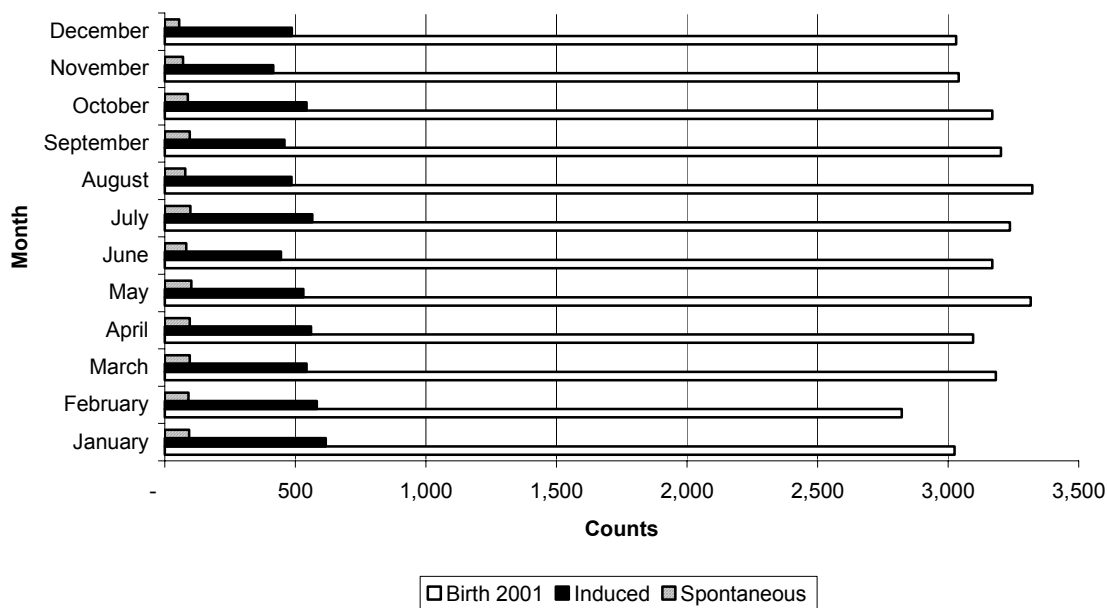


Figure 2

Gestational Age at Termination Occuring in 2002

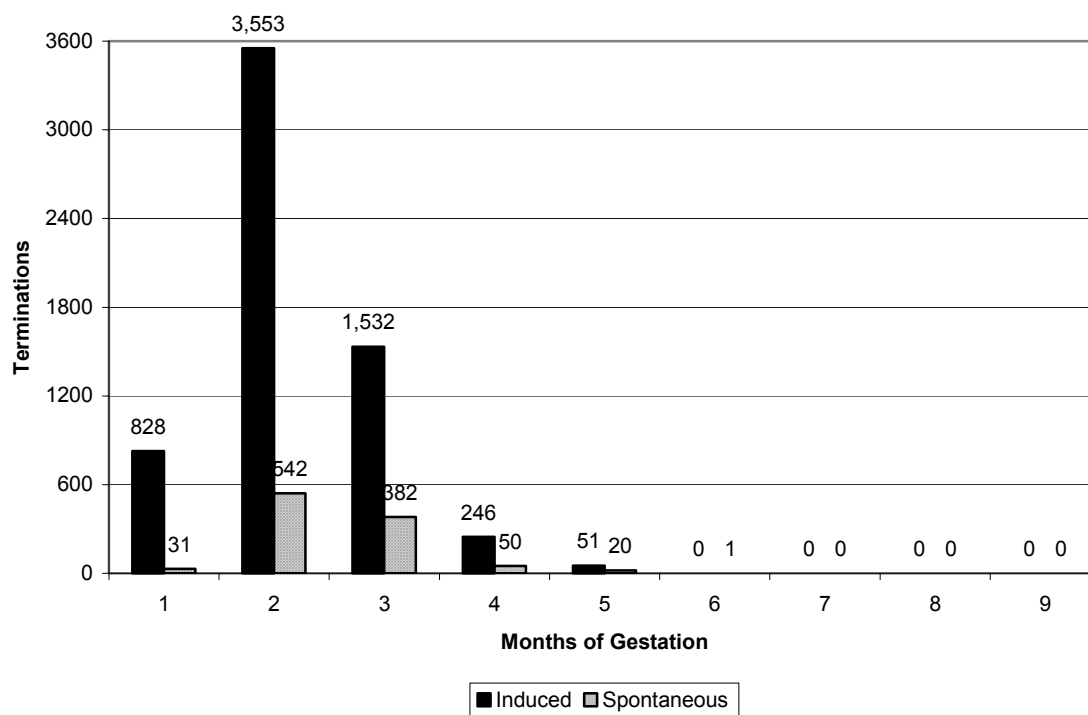


Table 1

Total Births and Pregnancy Terminations by Month of Occurrence

Month	1999				2000				2001				2002		
	Total Births	Induced	Spont.	N/A	Total Births	Induced	Spont.	N/A	Total Births	Induced	Spont.	N/A	Induced	Spont.	N/A
January	2,962	537	135	2	3,140	527	157	0	3,024	601	122	0	616	93	0
February	2,878	497	148	1	2,942	582	137	0	2,822	575	105	1	582	91	1
March	3,134	640	178	0	3,323	563	130	0	3,182	590	143	1	543	95	1
April	3,088	515	124	0	3,071	488	127	0	3,095	523	119	1	560	95	0
May	3,122	524	135	0	3,089	522	121	0	3,316	566	87	1	531	102	0
June	3,208	485	123	0	3,315	548	132	0	3,169	540	112	0	445	82	0
July	3,373	535	121	0	3,296	487	159	0	3,237	475	99	0	565	98	0
August	3,280	428	137	0	3,379	501	118	1	3,322	468	108	0	485	79	1
September	3,299	471	155	1	3,258	399	106	0	3,202	340	68	0	458	95	1
October	3,065	496	136	0	3,206	453	122	0	3,169	391	80	0	543	88	1
November	3,019	451	111	0	3,116	510	118	0	3,041	264	34	0	416	70	0
December	3,121	527	149	2	3,115	479	113	1	3,031	389	41	0	486	55	1
Unknown	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0
Total	37,549	6,106	1,652	6	38,250	6,059	1,541	2	37,610	5,722	1,119	4	6,230	1,044	6

Spont. = Spontaneous

N/A = Not Available

Table 2a
Gestational Age of Fetus by Termination Type (by trimester)

Gestational Age	1999				2000				2001				2002			
	Induced	%	Spont.	%	Induced	%	Spont.	%	Induced	%	Spont.	%	Induced	%	Spont.	%
0 to 13 weeks	5,657	92.6%	1,555	94.1%	5,685	93.8%	1,455	94.4%	5,415	94.6%	1,069	95.5%	5,913	94.9%	955	91.5%
14 to 28 weeks	446	7.3%	92	5.6%	366	6.0%	75	4.9%	297	5.2%	43	3.8%	297	4.8%	71	6.8%
Over 28 weeks	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Unknown	3	0.0%	5	0.3%	8	0.1%	11	0.7%	10	0.2%	7	0.6%	20	0.3%	18	1.7%
Total	6,106	100.0%	1,652	100.0%	6,059	100.0%	1,541	100.0%	5,722	100.0%	1,119	100.0%	6,230	100.0%	1,044	100.0%

Table 2b
Gestational Age of Fetus by Termination Type (by month)

Months of Gestation	1999			2000			2001			2002		
	Induced	Spont.	N/A	Induced	Spont.	N/A	Induced	Spont.	N/A	Induced	Spont.	N/A
1	937	88	0	986	61	0	746	46	0	828	31	0
2	3,201	850	4	3,068	794	1	3,148	610	4	3,553	542	5
3	1,519	617	2	1,631	600	1	1,521	413	0	1,532	382	1
4	283	72	0	267	56	0	242	39	0	246	50	0
5	142	20	0	98	19	0	55	4	0	51	20	0
6	21	0	0	1	0	0	10	7	0	0	1	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	3	5	0	8	11	0	10	7	0	20	18	0
Total	6,106	1,652	6	6,059	1,541	2	5,722	1,119	4	6,230	1,044	6

Terminations by Marital Status

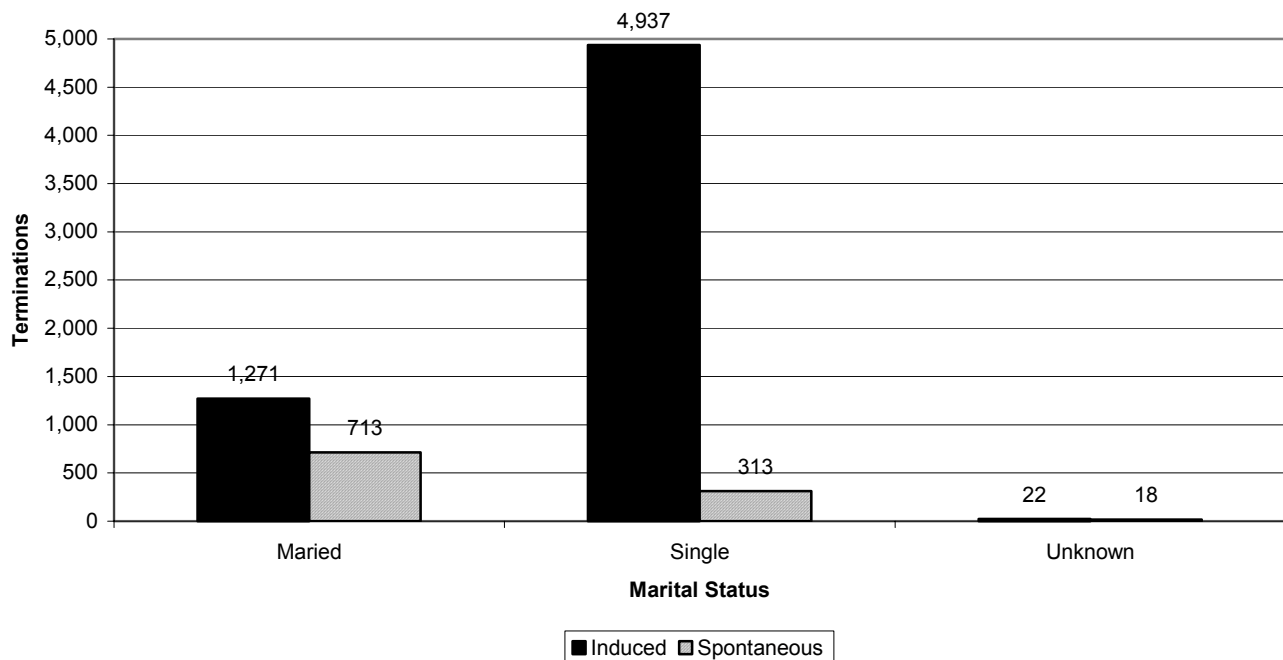
Single women experienced more induced terminations of pregnancy than married women during the reporting period. On the other hand, married women experienced more spontaneous terminations than single women. The pattern is shown in Table 3 and Figure 3.

Table 3
Termination of Pregnancy by Marital Status

Marital Status	1999			2000			2001			2002		
	Induced	Spont.	N/A	Induced	Spont.	N/A	Induced	Spont.	N/A	Induced	Spont.	N/A
Married	1,355	1,195	1	1,313	1,115	1	1,206	780	1	1,271	713	2
Single	4,614	438	5	4,694	413	1	4,476	323	2	4,937	313	3
Unknown	137	19	0	52	13	0	40	16	1	22	18	1
Total	6,106	1,652	6	6,059	1,541	2	5,722	1,119	4	6,230	1044	6

Figure 3

Distribution of Terminations Occuring in 2002 by marital Status



Terminations by Level of Education

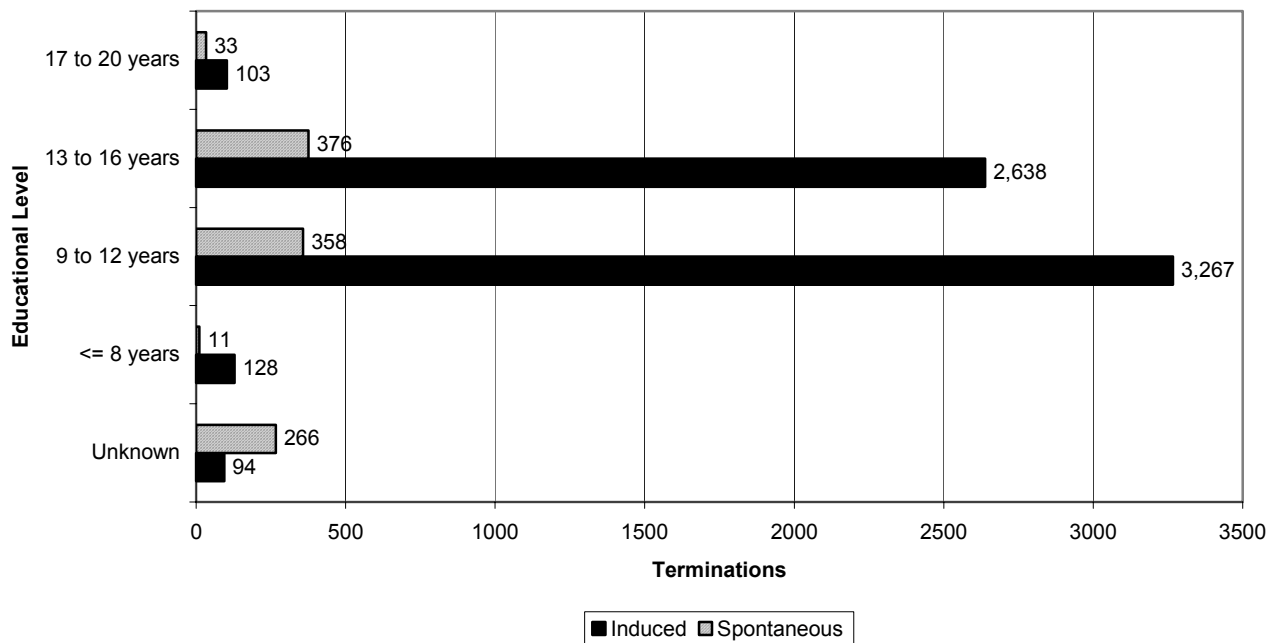
Table 4 and Figure 4 show the number of pregnancy terminations for women with differing amounts of education. Women with 9-12 years of education had more induced terminations, while women with 13-16 years of education had more spontaneous terminations than did women at other education levels during the reporting year. This pattern was similar to that of 2001.

Table 4
Termination of Pregnancy by Education Level

Level of Education	1999			2000			2001			2002		
	Induced	Spont.	N/A	Induced	Spont.	N/A	Induced	Spont.	N/A	Induced	Spont.	N/A
<= 8 years	103	17	0	119	13	0	101	8	0	128	11	0
9 to 12 years	3,000	602	5	3,164	600	1	2,961	375	2	3,267	358	3
13 to 16 years	2,557	480	0	2,467	452	1	2,413	380	1	2,638	376	2
17 to 20 years	143	42	0	121	39	0	99	41	0	103	33	0
Unknown	303	511	1	188	437	0	148	315	1	94	266	1
Total	6,106	1,652	6	6,059	1,541	2	5,722	1,119	4	6,230	1,044	6

Figure 4

Terminations Occuring in 2002 by Educational Level



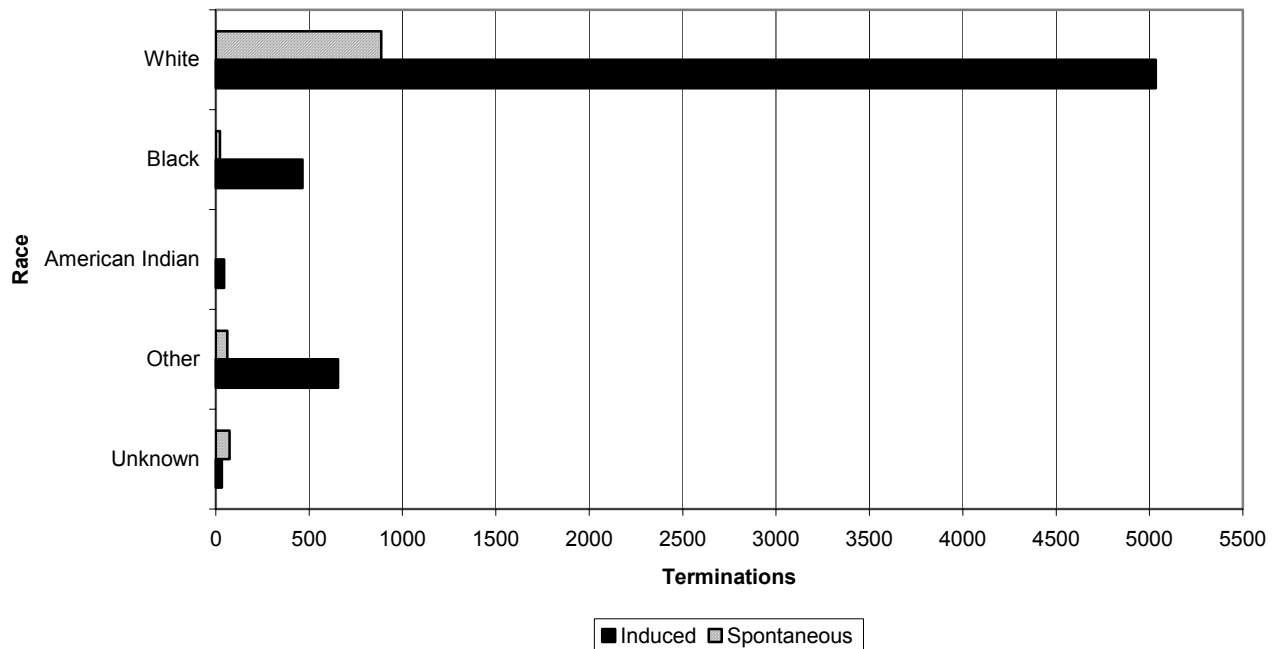
Terminations by Race

Table 5 and Figure 5 show the distribution of terminations of pregnancy by race. The pattern generally followed the proportion of each racial group in the Iowa population. While disparities are present in figures for both induced and spontaneous terminations, they are most pronounced for the induced terminations. Small minority populations in Iowa make it difficult to conclude much from this finding.

Table 5
Terminations of Pregnancy by Race

Race	1999				2000				2001				2002			
	Induced		Spont.		Induced		Spont.		Induced		Spont.		Induced		Spont.	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
White	4,922	80.6%	1,395	88.2%	4,912	81.1%	1,377	89.4%	4,603	80.4%	979	87.5%	5,034	80.8%	886	84.9%
Black	383	6.3%	41	2.6%	405	6.7%	39	2.5%	449	7.9%	27	2.4%	464	7.4%	22	2.1%
American Indian	57	0.9%	10	0.6%	54	0.9%	6	0.4%	63	1.1%	2	0.2%	45	0.7%	1	0.1%
Other	617	10.1%	86	5.4%	631	10.4%	81	5.3%	553	9.7%	52	4.7%	654	10.5%	62	5.9%
Unknown	127	2.1%	49	3.1%	57	0.9%	38	2.5%	54	0.9%	59	5.3%	33	0.5%	73	7.0%
Total	6,106	100.0%	1,581	100.0%	6,059	100.0%	1,541	100.0%	5,722	100.0%	1,119	100.0%	6,230	100.0%	1,044	100.0%

Figure 5
Terminations Occurring in 2002 by Race



Terminations by Mother's Age

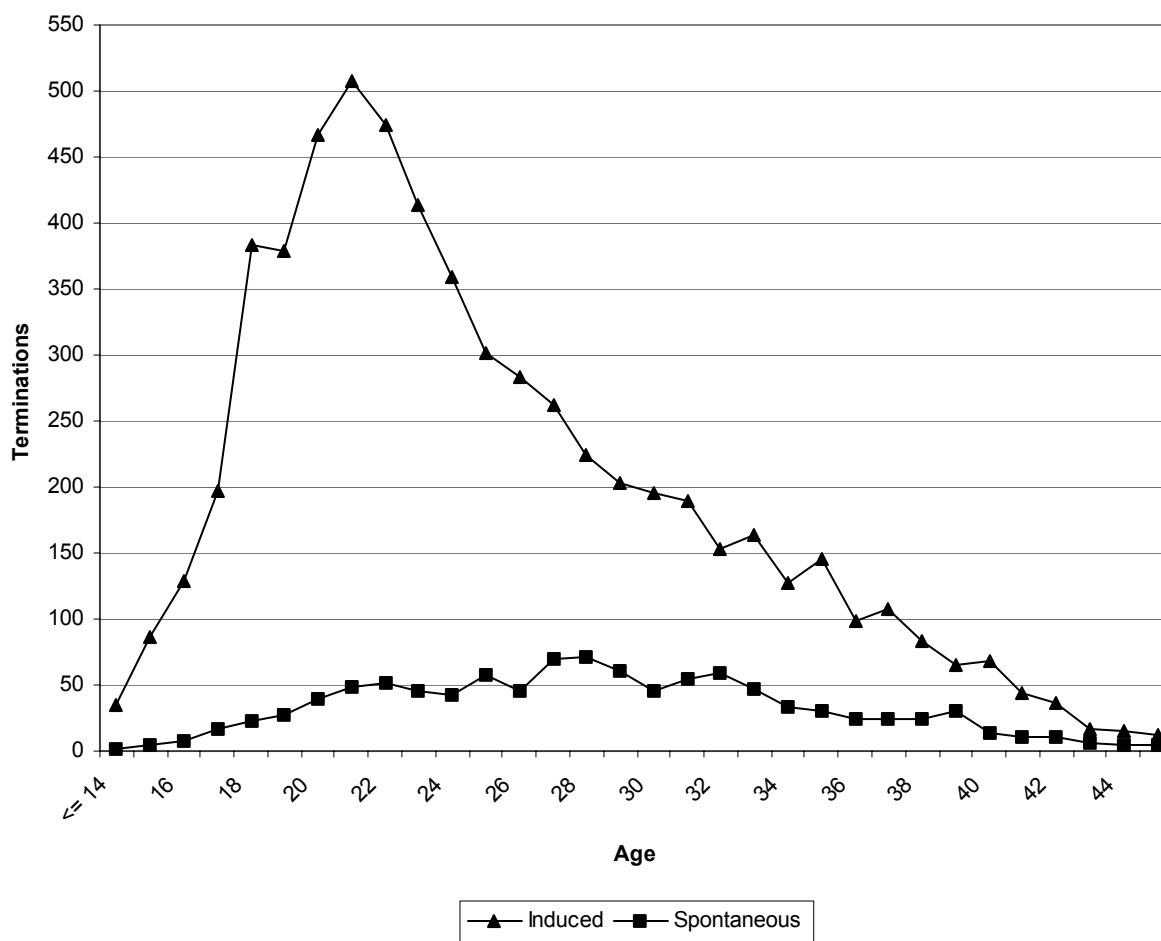
Table 6 and Figure 6 show the number of pregnancy terminations by age of the mother. There is a value for each year of age, except at the extremes of the distribution, where numbers of occurrences become very small. The distribution of induced terminations peaked at 21 years old. The distribution of spontaneous terminations was much shallower and peaked at 28 years old.

Table 6
Termination of Pregnancy by Age of Mother

Age of Mother	2000			2001			2002		
	Induced	Spont.	N/A	Induced	Spont.	N/A	Induced	Spont.	N/A
<=14	42	1	0	38	2	0	35	1	0
15	91	9	0	73	4	0	86	4	0
16	132	6	0	113	10	0	129	8	0
17	239	16	0	200	20	0	197	17	0
18	401	46	0	320	17	0	383	23	2
19	438	53	0	416	30	0	379	28	0
20	483	47	0	450	39	0	467	40	1
21	441	64	0	464	56	0	507	48	0
22	424	61	0	431	48	0	474	52	0
23	384	54	0	368	52	1	413	45	0
24	320	77	1	322	52	1	359	43	0
25	296	86	0	255	57	0	302	58	1
26	229	81	0	264	63	0	283	46	1
27	217	102	0	208	55	0	262	70	0
28	234	93	0	218	65	0	224	71	0
29	229	91	0	201	57	0	203	60	0
30	212	82	0	213	66	1	196	45	0
31	155	75	0	172	66	0	189	55	0
32	150	72	0	141	52	0	153	59	0
33	136	66	0	113	45	0	164	47	0
34	134	55	0	117	40	1	128	34	0
35	94	51	0	103	36	0	146	31	1
36	109	55	1	104	31	0	99	24	0
37	125	33	0	87	28	0	108	25	0
38	103	34	0	86	28	0	83	25	0
39	64	34	0	74	26	0	65	31	0
40	67	26	0	59	24	0	68	14	0
41	28	17	0	36	18	0	44	10	0
42	35	17	0	19	12	0	37	11	0
43	20	15	0	25	7	0	16	6	0
44	15	3	0	18	5	0	15	4	0
>=45	7	8	0	14	2	0	12	4	0
Unknown	5	11	0	0	6	0	4	5	0
Total	6,059	1,541	2	5,722	1,119	4	6,230	1,044	6

Figure 6

Terminations Occurring in 2002 by Age of Woman



MATERNAL AND CHILD HEALTH (MCH) REGIONS

The state has been subdivided into Maternal and Child Health (MCH) regions so a geographic analysis of the data can be made. Twenty-six MCH regions have been created within the state for program planning, intervention, and outcome-oriented research. Figure 7 is a map showing the location of each region within the state in 1999. It should be noted that MCH regions have changed several times since 1999. For the purpose of comparing regional termination data over years and showing the long-term trend of Iowa's termination of pregnancy, we use 1999 MCH regions as the baseline in Iowa's Termination of Pregnancy Report. Therefore, the MCH regions shown in this report may be different from the current regions funded by the Iowa Department of Public Health. Table 7 shows the number of spontaneous and induced terminations occurring among women residing within each region for the years 1999 through 2002.

Table 8a and 8b provide a comparison of live births, fertility rates, pregnancy rates, termination rates, and termination ratios by MCH region (see Appendix for formula). These calculations were based on the number of pregnancy terminations that occurred in 2002. As previously noted, the fertility and birth data used were actually from 2001, since 2002 data will not be available until summer 2003. Furthermore, the estimated female population of childbearing age used was actually from 2000; however, Iowa's female population is historically quite stable.

The fertility rate is the total number of live births per 1,000 women of childbearing age (see Appendix for formula). The fertility rate for the state as a whole was 61.5 per 1,000 women of childbearing age. Ten regions were above this rate. The highest fertility rate was recorded in region 7; the lowest rate was recorded in region 12 (see Table 8a), as in the 2001 report.

The pregnancy rate is the total number of live births, fetal deaths, and terminations of pregnancy per 1,000 women of childbearing age (see Appendix for formula). The state rate was 73.8 per 1,000 women. Seven regions were above this rate. The highest pregnancy rate was found in region 4; the lowest pregnancy rate was in region 16 (see Table 8a).

The termination rate is the total number of terminations of pregnancy per 1,000 women of childbearing age (see Appendix for formula). In 2002, the state rate for induced terminations was 10.2 per 1,000 women. Five regions had a higher rate than this figure. The highest induced rate was in region 23; the lowest rate was in region 17 (see Table 8b). The total spontaneous termination rate for the state was 1.7 per 1,000 women in 2002. Nine regions were higher than the state rate. Region 14 was the highest; regions 6, 20, and 21 were the lowest (see Table 8b).

The termination ratio is the total number of terminations of pregnancy per 1,000 live births (see Appendix for formula). The statewide induced termination ratio for 2002 was 165.6 per 1,000 live births. Seven regions were higher than this figure, with region 12 being the highest. Region 17 was the lowest (see Table 8b). The statewide spontaneous termination ratio for 2002 was 27.8 per 1,000 live births. Nine regions were higher than this figure. Region 14 was the highest; region 20 was the lowest (see Table 8b). These results match the 2001 report.

2002 Iowa Termination of Pregnancy Report

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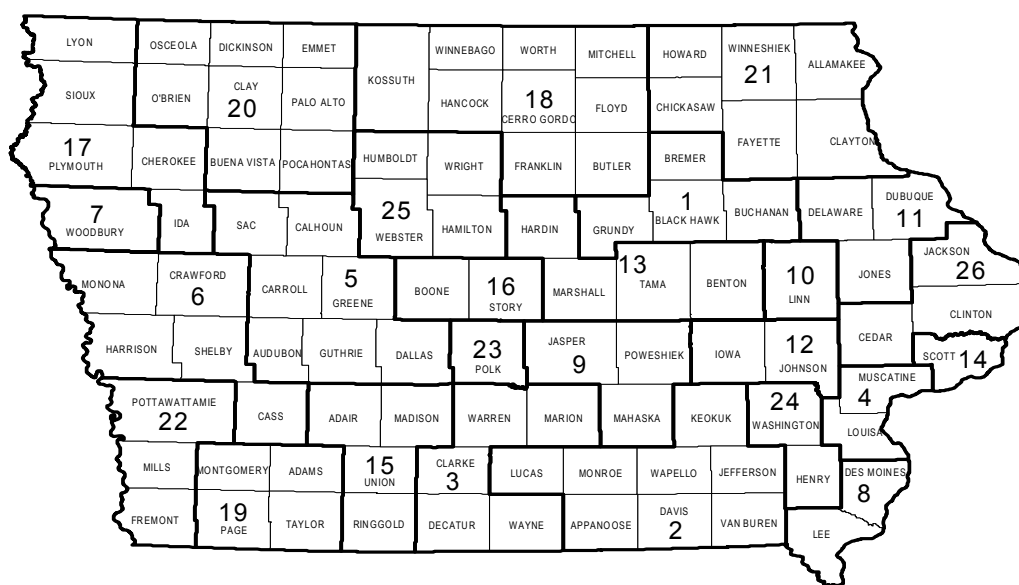


Table 7
Terminations of Pregnancy by Maternal and Child Health (MCH) Region *

MCH Region	1999		2000		2001		2002	
	Induced	Spont.	Induced	Spont.	Induced	Spont.	Induced	Spont.
1	381	48	437	28	352	30	398	28
2	157	61	150	71	157	48	132	67
3	148	43	132	30	133	26	100	21
4	123	20	127	24	113	13	139	9
5	110	35	103	40	120	11	132	12
6	27	9	14	5	25	7	37	1
7	198	123	214	95	137	82	158	81
8	118	70	87	65	147	46	149	50
9	112	34	97	30	99	23	91	37
10	555	146	528	180	509	169	575	148
11	192	92	205	87	160	55	173	71
12	566	97	521	104	436	63	435	26
13	153	39	150	36	147	28	151	38
14	387	222	468	211	406	187	455	149
15	50	29	44	11	47	5	56	3
16	234	32	224	32	233	26	229	29
17	25	14	35	18	40	11	32	5
18	143	69	164	104	144	84	151	79
19	11	8	10	6	10	6	27	5
20	61	7	53	6	63	3	66	1
21	114	12	129	11	96	3	105	1
22	9	56	4	25	9	24	60	16
23	1,294	226	1,227	213	1,230	126	1,184	112
24	69	28	73	31	52	9	77	5
25	115	17	132	11	104	3	117	7
26	150	34	142	18	124	18	155	11
Out of State	547	41	559	19	591	9	821	29
Not Identified	57	40	30	30	36	4	25	3
Total	6,106	1,652	6,059	1,541	5,722	1,119	6,230	1,044

* The MCH regions shown in this table may be different from current MCH services funded by Iowa Department of Public Health.

Table 8a
Population, Live Births, Fertility Rate, and Pregnancy Rate by MCH Region

MCH Region	1999				2000				2001		
	Live Births	Female Aged 15-44	Fertility Rate	Pregnancy Rate	Live Births	Female Aged 15-44	Fertility Rate	Pregnancy Rate	Live Births	Fertility Rate	Pregnancy Rate*
1	2,232	38,434	58.1	70.1	2,235	40,937	54.6	64.2	2,260	55.2	66.2
2	1,229	21,133	58.2	68.6	1,312	20,731	63.3	73.4	1,272	61.4	71.3
3	1,187	19,896	59.7	67.6	1,173	20,093	58.4	66.5	1,196	59.5	65.8
4	783	11,014	71.1	85.1	802	11,102	72.2	83.9	812	73.1	87.5
5	1,320	20,422	64.6	71.4	1,343	21,610	62.1	68.3	1,255	58.1	65.4
6	795	12,255	64.9	66.6	788	12,830	61.4	64.1	768	59.9	63.2
7	1,627	21,472	75.8	89.6	1,692	22,060	76.7	87.0	1,623	73.6	84.9
8	986	15,782	62.5	72.1	965	15,357	62.8	75.9	913	59.5	72.6
9	934	15,106	61.8	70.3	953	15,352	62.1	70.5	957	62.3	71.0
10	2,745	42,167	65.1	81.9	2,715	42,455	64.0	80.3	2,846	67.0	84.5
11	1,546	25,646	60.3	71.7	1,675	25,945	64.6	73.1	1,580	60.9	70.5
12	1,510	33,302	45.3	63.8	1,565	34,587	45.2	59.8	1,552	44.9	58.4
13	1,313	19,086	68.8	78.5	1,340	19,345	69.3	78.5	1,314	67.9	78.0
14	2,264	35,987	62.9	81.0	2,348	34,703	67.7	85.2	2,214	63.8	81.6
15	468	7,426	63	70.0	460	7,486	61.4	68.8	434	58.0	66.3
16	1,203	24,838	48.4	58.3	1,257	26,494	47.4	57.4	1,215	45.9	55.7
17	1,054	16,932	62.2	65.0	1,141	17,459	65.4	68.5	1,093	62.6	65.1
18	1,641	27,675	59.3	69.0	1,658	27,484	60.3	69.0	1,586	57.7	66.4
19	455	6,955	65.4	68.0	430	7,048	61.0	63.4	416	59.0	64.0
20	1,184	18,876	62.7	65.9	1,165	19,604	59.4	63.3	1,115	56.9	60.7
21	1,050	18,289	57.4	65.3	1,055	19,089	55.3	60.7	1,048	54.9	60.7
22	1,470	22,794	64.5	66.0	1,421	22,698	62.6	64.3	1,493	65.8	69.4
23	5,954	87,858	67.8	83.3	6,216	86,419	71.9	88.0	6,110	70.7	86.1
24	552	7,978	69.2	82.1	554	7,922	69.9	77.8	546	68.9	79.7
25	999	14,709	67.9	76.9	951	14,992	63.4	70.9	953	63.6	72.3
26	1,048	17,070	61.4	71.0	1,036	17,412	59.5	68.2	1,039	59.7	69.7
Out of State	-	-	-	-	-	-	-	-	-	-	-
Not Identified	-	-	-	-	-	-	-	-	-	-	-
Total*	37,549	603,102	62.3	74.6	38,250	611,214	62.6	74.1	37,610	61.5	73.8

* Female childbearing population (age 15-44) in the 2001 calculation was actually from 2000.

Table 8b
Termination Rates and Termination Ratios by MCH Region

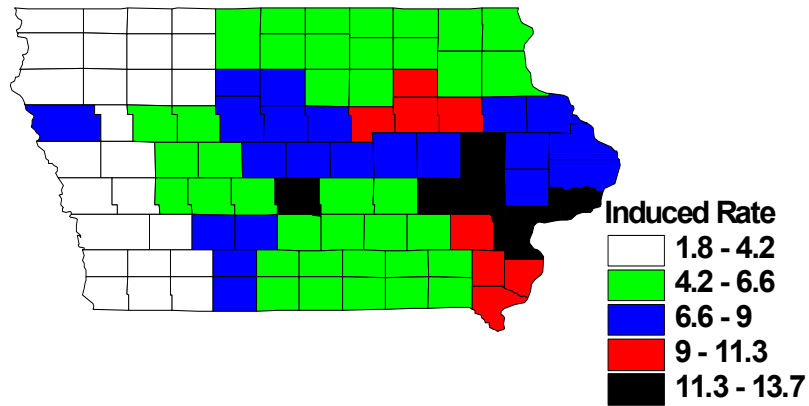
MCH Region	1999				2000						2001						2002					
	Induced		Spont.		Induced			Spont.			Induced			Spont.			Induced			Spont.		
	Rate	Ratio	Rate	Ratio	N	Rate	Ratio	N	Rate	Ratio	N	Rate	Ratio	N	Rate	Ratio	N	Rate*	Ratio**	N	Rate*	Ratio**
1	9.7	165.3	1.2	20.1	437	11.4	195.8	28	0.7	12.5	352	8.6	157.5	30	0.7	13.4	398	9.7	176.1	28	0.7	12.4
2	7.3	124.7	2.4	40.5	150	7.1	122.1	71	3.4	57.8	157	7.6	119.7	48	2.3	36.6	132	6.4	103.8	67	3.2	52.7
3	7.4	127.4	2.2	37.3	132	6.6	111.2	30	1.5	25.3	133	6.6	113.4	26	1.3	22.2	100	5.0	83.6	21	1.0	17.6
4	11.1	156.3	1.8	25.4	127	11.5	162.2	24	2.2	30.7	113	10.2	140.9	13	1.2	16.2	139	12.5	171.2	9	0.8	11.1
5	5.4	84.4	1.7	26.9	103	5.0	78.0	40	2.0	30.3	120	5.6	89.4	11	0.5	8.2	132	6.1	105.2	12	0.6	9.6
6	2.2	36.3	0.7	12.1	14	1.1	17.6	5	0.4	6.3	25	1.9	31.7	7	0.5	8.9	37	2.9	48.2	1	0.1	1.3
7	9.1	119.0	5.2	67.9	214	10.0	131.5	95	4.4	58.4	137	6.2	81.0	82	3.7	48.5	158	7.2	97.4	81	3.7	49.9
8	7.3	121.5	3.8	62.3	87	5.5	88.2	65	4.1	65.9	147	9.6	152.3	46	3.0	47.7	149	9.7	163.2	50	3.3	54.8
9	7.3	124.4	2.2	36.7	97	6.4	103.9	30	2.0	32.1	99	6.4	103.9	23	1.5	24.1	91	5.9	95.1	37	2.4	38.7
10	13.2	210.2	3.2	50.5	528	12.5	192.3	180	4.3	65.6	509	12.0	187.5	169	4.0	62.2	575	13.5	202.0	148	3.5	52.0
11	7.4	121.4	3.5	56.9	205	8.0	132.6	87	3.4	56.3	160	6.2	95.5	55	2.1	32.8	173	6.7	109.5	71	2.7	44.9
12	16.9	387.2	2.8	64.9	521	15.6	345.0	104	3.1	68.9	436	12.6	278.6	63	1.8	40.3	435	12.6	280.3	26	0.8	16.8
13	7.8	119.5	2.0	30.9	150	7.9	114.2	36	1.9	27.4	147	7.6	109.7	28	1.4	20.9	151	7.8	114.9	38	2.0	28.9
14	10.7	164.6	6.0	93.2	468	13.0	206.7	211	5.9	93.2	406	11.7	172.9	187	5.4	79.6	455	13.1	205.5	149	4.3	67.3
15	6.7	112.9	3.8	63.2	44	5.9	94.0	11	1.5	23.5	47	6.3	102.2	5	0.7	10.9	56	7.5	129.0	3	0.4	6.9
16	9.3	201.7	1.3	27.7	224	9.0	186.2	32	1.3	26.6	233	8.8	185.4	26	1.0	20.7	229	8.6	188.5	29	1.1	23.9
17	1.5	23.2	0.8	13.0	35	2.1	33.2	18	1.1	17.1	40	2.3	35.1	11	0.6	9.6	32	1.8	29.3	5	0.3	4.6
18	5.1	87.0	2.4	42.0	164	5.9	99.9	104	3.8	63.4	144	5.2	86.9	84	3.1	50.7	151	5.5	95.2	79	2.9	49.8
19	1.5	24.0	1.0	15.3	10	1.4	22.0	6	0.9	13.2	10	1.4	23.3	6	0.9	14.0	27	3.8	64.9	5	0.7	12.0
20	3.2	53.9	0.4	6.2	53	2.8	44.8	6	0.3	5.1	63	3.2	54.1	3	0.2	2.6	66	3.4	59.2	1	0.1	0.9
21	6.0	105.7	0.6	11.3	129	7.1	122.9	11	0.6	10.5	96	5.0	91.0	3	0.2	2.8	105	5.5	100.2	1	0.1	1.0
22	0.3	5.5	2.4	38.8	4	0.2	2.7	25	1.1	17.0	9	0.4	6.3	24	1.1	16.9	60	2.6	40.2	16	0.7	10.7
23	14.7	217.9	2.4	36.1	1,227	14.0	206.1	213	2.4	35.8	1,230	14.2	197.9	126	1.5	20.3	1,184	13.7	193.8	112	1.3	18.3
24	8.6	129.2	3.4	50.6	73	9.2	132.2	31	3.9	56.2	52	6.6	93.9	9	1.1	16.2	77	9.7	141.0	5	0.6	9.2
25	7.7	116.5	1.1	17.2	132	9.0	132.1	11	0.7	11.0	104	6.9	109.4	3	0.2	3.2	117	7.8	122.8	7	0.5	7.3
26	8.7	136.6	2.0	31.0	142	8.3	135.5	18	1.1	17.2	124	7.1	119.7	18	1.0	17.4	155	8.9	149.2	11	0.6	10.6
Out of State	-	-	-	-	559	-	-	19	-	-	591	-	-	9	-	-	821	-	-	29	-	-
Not Identified	-	-	-	-	30	-	-	30	-	-	36	-	-	4	-	-	25	-	-	3	-	-
Total*	10.0	163.1	2.6	42.4	6,059	10.0	161.4	1,541	2.6	41.0	5,722	9.4	149.6	1,119	1.8	29.3	6,230	10.2	165.6	1,044	1.7	27.8

* 2000 Female Population (age 15-44) was used to calculate 2002 termination rates.

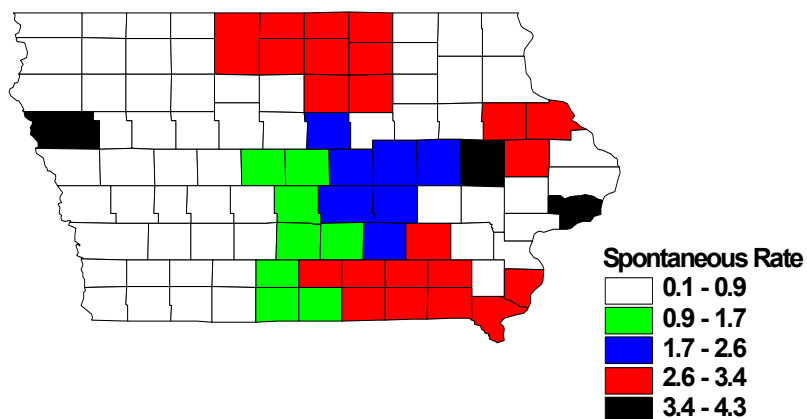
** 2001 Live Birth data were used to calculate 2002 termination ratio

Figure 8
Geographic Distribution of Terminations of Pregnancy

**Induced Termination Rate
Occurring in 2002**



**Spontaneous Termination Rate
Occurring in 2002**



DISCUSSION

The Centers for Disease Control and Prevention (CDC) has collected and compiled data on abortions by state or area of occurrence since 1969 (1). From 1973 through 1997, data were received from, or estimated for 52 reporting areas in the United States: 50 states, the District of Columbia, and New York City. Beginning in 1998, CDC compiled abortion data from 48 reporting areas. Alaska, California, New Hampshire, and Oklahoma did not report, and data for these areas were not estimated.

Table 9 provides a long-term perspective review of changes in reported legal abortions, abortion rates, and abortion ratios for the nation from 1970 to 1999. There were increases in induced abortion until around 1990. Since that time the number of legal induced abortions gradually declined. In 1998 and 1999, the number of abortions continued to decrease when comparing the same 48 reporting areas.

Table 10 is provided to show how Iowa compares to other states regarding termination of pregnancy (1). Iowa had an abortion ratio of 186 per 1,000 live births based on residence in 1999 (the most current reporting year for all states). The occurrence data show that in 1999, Iowa had a ratio of 163 abortions per 1,000 live births, and an abortion rate of 16 per 1,000. The national ratio was 256 per 1,000 live births and an abortion rate of 17 per 1,000 (see Table 10). Since the methodology for obtaining Iowa's figures has changed significantly between 1997 and the present, it is not possible to compare these rates to current data. Comparing rates from 1999 to 2002 – when the same methodology was used – there is a decline in numbers. This may be exaggerated, however, since reports may trickle in for months or even years after the end of the reporting year.

Limitations of Data

The data used for this analysis are reported by health care providers. Data are reported by MCH region rather than on a county basis. Furthermore, incidents handled by health care providers in neighboring states are not likely to be included in the report. It is necessary for fertility rate, pregnancy rate, and ratio calculations to use the live birth data, but the most current year available is 2001. In Iowa there is very little fluctuation in number of births from year to year. Using the previous year's births should provide reasonably accurate figures for estimations. Lastly, not all terminations are reported in a timely enough fashion to be included in the report.

Summary

Despite the limitations discussed above, an analysis of the data suggests the following:

1. Most of both types of pregnancy terminations (induced and spontaneous) in the state occur within the first trimester, specifically in the second and third months of gestation.
2. Reports of induced terminations are much more prevalent than spontaneous terminations.
3. Single women experience more induced terminations than married women, while married women experience more spontaneous terminations.
4. The typical woman with induced termination is younger than the typical woman with spontaneous termination.

5. Iowa is below the national average rates for both induced and spontaneous terminations to live births and for rates of both induced and spontaneous termination for women of childbearing age.
6. A lower rate of induced terminations occurs in the western than in the eastern part of the state, while a lower rate of spontaneous terminations occurs in the northern and western regions.
7. The national trend in induced terminations over the past decade seems to be downward. The numbers of both induced and spontaneous terminations reported within the state from 1999 to 2002 shows a similar pattern. This trend within the state may not be as prominent as it appears, due to incomplete reporting within the time allowed.

Although little may be determined from this data concerning the factors leading to either induced or spontaneous terminations of pregnancy, these reports provide planners and policymakers a baseline of knowledge about the occurrence of termination of pregnancy.

Table 9
Reported Number of Legal Induced Abortions, Abortion Ratios,* and Abortion Rates,† United States, Selected Years, 1970-1999

Year	No. of legal abortions	Ratio*	Rate†	No. of areas reporting	
				Central health agency§	Hospitals/ facilities¶
All Reporting Areas					
1970	193,491	52	5	8	7
1971	485,816	137	11	19	7
1972	586,760	180	13	21	8
1973	615,831	196	14	26	26
1974	763,476	242	17	37	15
1975	854,853	272	18	39	13
1976	988,267	312	21	41	11
1977	1,079,430	325	22	46	6
1978	1,157,776	347	23	48	4
1979	1,251,921	358	24	47	5
1980	1,297,606	359	25	47	5
1981	1,300,760	358	24	46	6
1982	1,303,980	354	24	46	6
1983	1,268,987	349	23	46	6
1984	1,333,521	364	24	44	8
1985	1,328,570	354	24	44	8
1986	1,328,112	354	23	43	9
1987	1,353,671	356	24	45	7
1988	1,371,285	352	24	45	7
1989	1,396,658	346	24	45	7
1990	1,429,247	344	24	46	6
1991	1,388,937	338	24	47	5
1992	1,359,146	334	23	47	5
1993	1,330,414	333	23	47	5
1994	1,267,415	321	21	47	5
1995	1,210,883	311	20	48	4
1996	1,225,937	315**	21	48	4
1997	1,186,039	306	20	48	4
1998	884,273	264	17	48	0
1999	861,789	256	17	48	0
48 Reporting Areas††					
1995	908,243	277	18	47	1
1996	934,549	285**	18	47	1
1997	900,171	274	17	46	2
1998	884,273	264	17	48	0
1999	861,789	256	17	48	0

* Number of abortions per 1,000 live births.

† Number of abortions per 1,000 women aged 15–44 years.

§ State health departments and the health departments of New York City and the District of Columbia.

¶ Hospitals or other medical facilities in state.

** Beginning in 1996, the ratio was based on births reported by the National Center for Health Statistics, CDC.

†† Without Alaska, California, New Hampshire, and Oklahoma, which did not report number of legal abortions for 1999.

Table 10
Reported Number,* Ratio, and Rate of Legal Abortions and Percentage of Abortions Obtained by
Out-of-State Residents,† by State of Occurrence – United States, 1999

State	Residence			Occurrence			Percentage of legal abortions obtained by out-of-state residents
	No. of legal abortions	Ratio	Rate	No. of legal abortions	Ratio	Rate	
Alabama	11,972	193	12	13,273	214	14	17.4
Alaska**	—	—	—	—	—	—	—
Arizona††	11,024	136	11	10,765	133	11	1.0
Arkansas	5,614	153	10	5,755	157	11	13.1
California**	—	—	—	—	—	—	—
Colorado	4,385	71	5	5,017	81	6	15.0
Connecticut	13,086	302	19	12,958	299	19	3.4
Delaware	3,540	332	20	5,161	483	30	34.8
Dist. of Columbia	3,881	516	31	7,373	980	59	54.9
Florida§§	—	—	—	83,971	426	28	—
Georgia	30,405	240	17	33,095	261	18	9.5
Hawaii	4,397	258	18	4,404	258	18	0.5
Idaho	1,580	80	6	867	44	3	3.2
Illinois	42,563	234	16	45,924	252	17	9.4
Indiana	14,238	165	11	12,109	141	9	3.6
Iowa¶¶	6,989	186	12	6,106¶¶	163	10	—
Kansas	6,435	166	11	12,395	320	22	48.6
Kentucky	6,758	124	8	5,469	101	6	20.2
Louisiana§§	—	—	—	12,008	179	12	—
Maine	2,366	174	9	2,427	178	9	3.0
Maryland	15,557	216	13	11,164	155	9	4.1
Massachusetts††	25,047	309	18	26,852	332	19	6.1
Michigan	25,898	194	12	26,207	196	12	3.1
Minnesota	13,567	206	13	14,342	217	14	8.9
Mississippi	7,206	169	11	3,878	91	6	4.7
Missouri	15,838	210	13	8,113	108	7	9.5
Montana	2,150	199	12	2,499	232	14	14.6
Nebraska	3,831	160	11	4,565	191	13	18.4
Nevada	5,208	177	14	5,807	198	15	10.4
New Hampshire**	—	—	—	—	—	—	—
New Jersey	35,293	309	20	35,126	308	20	6.0
New Mexico	5,644	208	15	5,098	187	14	5.0
New York	133,495	522	33	137,234	537	34	—
City	95,978	804	—	102,334***	858	—	6.6†††
State	37,517§§§	275	—	34,900	256	—	5.5†††
North Carolina	28,459	250	17	32,081	282	19	14.3
North Dakota	960	126	7	1,345	176	10	34.2
Ohio	34,859	228	14	37,041	243	15	7.8
Oklahoma**	—	—	—	—	—	—	—
Oregon	12,562	278	18	14,145	313	20	12.6
Pennsylvania	37,097	255	15	34,494	237	14	4.7
Rhode Island	3,995	323	18	5,004	405	23	22.0
South Carolina	11,122	202	13	7,687	140	9	5.6
South Dakota	961	91	6	740	70	5	18.6
Tennessee	15,472	199	13	16,924	218	14	18.8
Texas	77,506	222	17	80,739	231	18	3.7
Utah	3,250	70	7	3,381	73	7	6.7
Vermont	1,476	225	11	1,748	266	13	16.8
Virginia	28,388	297	18	27,354	287	17	6.3
Washington	26,062	327	20	25,523	321	20	4.3
West Virginia	2,730	132	7	2,498	121	7	13.3
Wisconsin	12,113	178	11	11,013	161	10	2.8
Wyoming	833	136	8	110	18	1	1.8
Other residence¶¶¶	2,537	—	—	NA	NA	NA	NA
Total known	758,349			861,789	256	17	8.8

(to be continued)

Table 10 (continued)
Reported Number,* Ratio, and Rate of Legal Abortions and Percentage of Abortions Obtained by Out-of-State Residents,† by State of Occurrence – United States, 1999.

State	Residence			Occurrence			Percentage of legal abortions obtained by out-of-state residents
	No. of legal abortions	Ratio	Rate	No. of legal abortions	Ratio	Rate	
Unknown residence****	4,886						
Not reported by residence††††	98,554						
Total	861,789	256	17				

* Abortion data reported by central health agencies.

† Number of abortions per 1,000 live births. **Source:** Number of live births obtained from Ventura SJ, Martin JA, Curtin SC, Menacker F, Hamilton BE. Births: final data for 1999. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics, 2001. Natl Vital Stat Rep; vol 49, no. 1.

§ Number of abortions per 1,000 women aged 15–44 years. **Source:** Number of women in this age group was obtained from the US Census Bureau. Table ST-99-8: Population estimates for the U.S., Regions, Divisions, and States by 5-year age Groups and Sex: Time Series Estimates, July 1, 1990 to July 1, 1999, and April 1, 1990, Census Population Counts (includes revised population counts). Washington, DC: US Census Bureau, Population Division, Population Estimates Program.

†¶ Based on number of abortions for which residence of women was known.

** State did not report abortions.

†† Reported numbers of abortions for in-state residents without detailed information regarding out-of-state residents.

§§ State did not report abortions by residence; therefore, no information is available regarding in-state residents.

¶¶ Reported for own residents only.

*** Reported by the New York City Department of Health.

††† Percentage based on number of abortions reported as "out of reporting area."

§§§ Abortions for women whose state of residence was listed as New York.

¶¶¶ Women whose residence was listed as Canada, Mexico, or Other.

**** Reported as unknown residence (3,249) or out-of-state residence, but not specified (1,637).

†††† Total for states that did not report abortions by residence.

— Not available; NA, not applicable.

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APPENDIX

Formulas

$$1. \text{ Termination Rate} = \frac{\text{\# of Terminations}}{\text{Female Population (age 15 – 44)}} \times 1,000$$

$$2. \text{ Termination Ratio} = \frac{\text{\# of Terminations}}{\text{\# Total Live Births}} \times 1,000$$

$$3. \text{ Fertility Rate} = \frac{\text{\# Total Live Births}}{\text{Female Population (age 15 – 44)}} \times 1,000$$

$$4. \text{ Pregnancy Rate} = \frac{\text{\#(Live Births + Fetal Deaths + Abortions)}}{\text{Female Population (age 15 – 44)}} \times 1,000$$