Technical Notes

Estimates based on sample data differ from the figures that would have been obtained had all, rather than a sample, of the records been used. These differences are termed sampling variability. The standard error is a measure of the sampling variability; that is, the variation that occurs by chance because a sample is used. The standard error is used to describe confidence intervals. The confidence interval represents the extent to which the sample results can be relied upon to describe the results that would have occurred if the entire population (universe) had been used for data compilation rather than the sample.

In about 68 percent of all probability samples with the same selection criteria, the universe value will be included in the interval from one standard error below to one standard error above the sample estimate. Similarly, about 95 percent of all possible samples will give estimates within two standard errors, and about 99 percent will give estimates within two and one-half standard errors.

Tables I and II provide approximations of standard errors of estimates shown in this report. Table I presents approximate standard errors for the estimated number of recipients from the 1 percent and the 10 percent sample files. Table II represents approximation of standard errors for the estimated percentage of persons from the 1 percent and 10 percent files. Linear interpolation may be used to obtain values not specifically shown.

Table I.
Approximations of standard errors of estimated number of persons

Size of estimate (inflated)	Standard error
1 percent file	
500	250
1,000	300
2,500	500
5,000	800
7,500	900
10,000	1,100
25,000	1,700
50,000	2,400
75,000	3,000
100,000	3,400
250,000	5,400
500,000	7,800
750,000	9,600
1,000,000	11,100
5,000,000	25,800
10,000,000	36,900
25,000,000	57,700
50,000,000	76,100
75,000,000	82,900
10 percent file	
100	30
500	70
1,000	100
5,000	225
10,000	300
50,000	700
100,000	1,000
500,000	2,200
1,000,000	3,200
2,000,000	4,300
3,000,000	5,300
5,000,000	6,500
10,000,000	8,500
20,000,000	9,300

Table II.
Approximations of standard errors of estimated percentage of persons from 1 percent and 10 percent files

Size of base (inflated)	Estimated percentage				
	2 or 98	5 or 95	10 or 90	25 or 75	50
1 percent file					
1,000	4.7	7.3	10.1	14.5	16.8
10,000	1.5	2.3	3.2	4.6	5.3
50,000	0.7	1.0	1.4	2.1	2.4
100,000	0.5	0.7	1.0	1.5	1.7
500,000	0.2	0.3	0.4	0.7	0.8
1,000,000	0.1	0.2	0.3	0.5	0.5
5,000,000	0.1	0.1	0.1	0.2	0.2
10,000,000	a	0.1	0.1	0.2	0.2
50,000,000	a	a	a	0.1	0.1
100,000,000	a	a	a	a	a
10 percent file					
500	1.9	3.0	4.1	5.9	6.8
1,000	1.3	2.1	2.9	4.1	4.8
2,500	0.8	1.3	1.8	2.6	3.0
10,000	0.4	0.6	0.9	1.3	1.5
50,000	0.2	0.3	0.4	0.6	0.7
100,000	0.1	0.2	0.3	0.4	0.5
500,000	a	0.1	0.1	0.2	0.2
1,000,000	a	0.1	0.1	0.1	0.2
5,000,000	a	a	a	a	0.1
10,000,000	a	a	a	a	a
50,000,000	a	a	a	a	a

a. Less than 0.05 percent.