

**White Paper on Evaluation of Sampling Design Options  
for the National Children's Study**

**Appendix I**

**Detailed Summaries of Sample Size- and Budget-Constrained Cost  
Estimates and Power Calculations Using Revised Retention Rates**



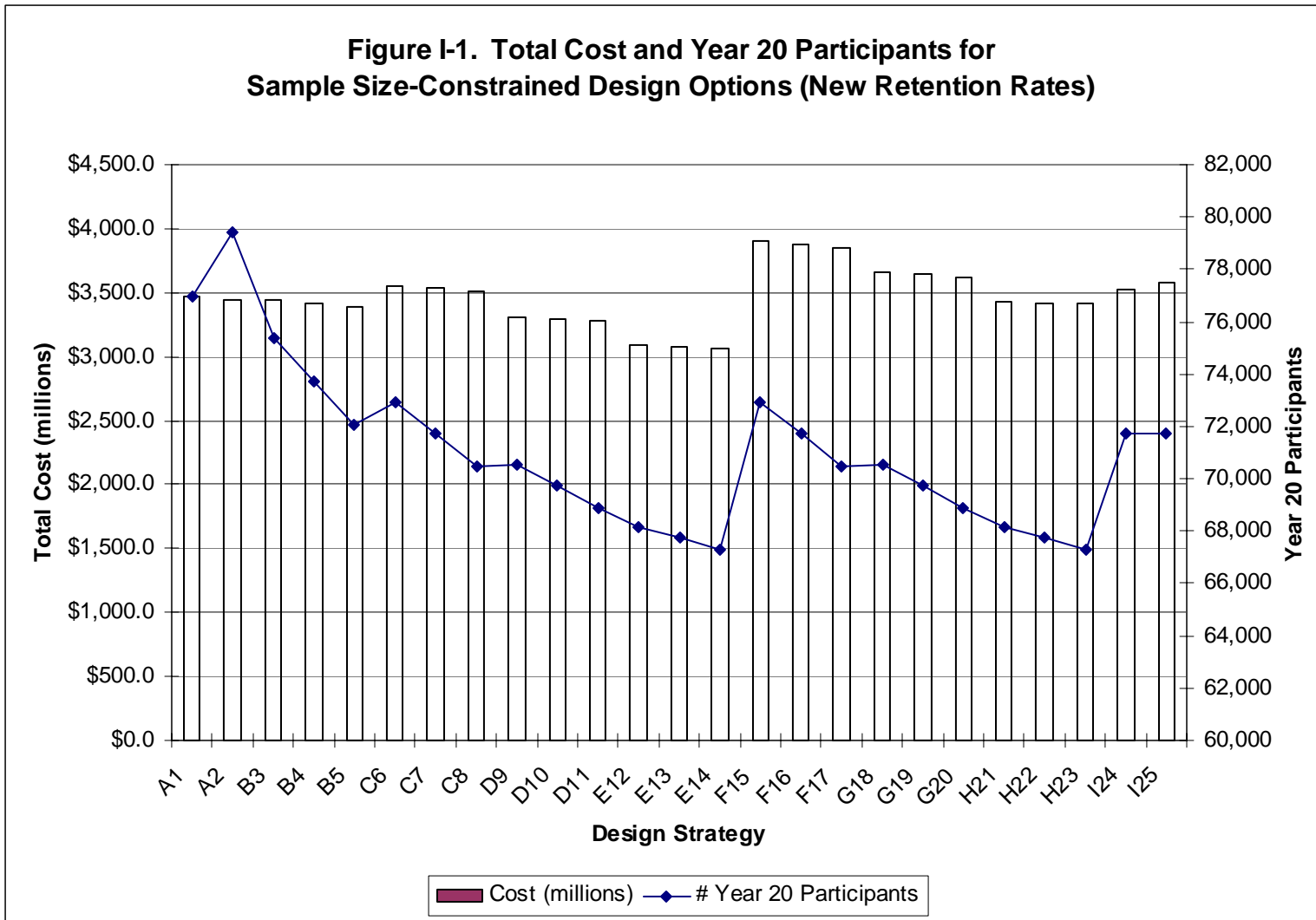
**Table I-1. Summary of Sample Size-Constrained Cost Estimates, New Retention Rates**

Strategy	Constraints						Cost (millions)	# Year 20 Participants
	Number of PSUs	# of Centers	# Parts. NPBS	# Parts. Area PBS	# Parts. PBS-Patients	# Parts. Volunteer		
A1	0	50	0	0	97,000	3,000	\$3,473.3	76,936
A2	0	50	0	0	50,000	50,000	\$3,449.2	79,401
B3	0	50	0	24,000	72,000	4,000	\$3,442.7	75,348
B4	0	50	0	48,000	48,000	4,000	\$3,412.7	73,707
B5	0	50	0	72,000	24,000	4,000	\$3,382.6	72,067
C6	50	38	25,000	18,000	54,000	3,000	\$3,556.7	72,943
C7	50	38	25,000	36,000	36,000	3,000	\$3,534.0	71,712
C8	50	38	25,000	54,000	18,000	3,000	\$3,511.4	70,482
D9	50	25	50,000	12,000	36,000	2,000	\$3,312.3	70,538
D10	50	25	50,000	24,000	24,000	2,000	\$3,297.3	69,717
D11	50	25	50,000	36,000	12,000	2,000	\$3,282.2	68,897
E12	50	13	75,000	6,000	18,000	1,000	\$3,084.1	68,132
E13	50	13	75,000	12,000	12,000	1,000	\$3,076.5	67,722
E14	50	13	75,000	18,000	6,000	1,000	\$3,068.9	67,312
F15	100	38	25,000	18,000	54,000	3,000	\$3,898.8	72,943
F16	100	38	25,000	36,000	36,000	3,000	\$3,876.1	71,712
F17	100	38	25,000	54,000	18,000	3,000	\$3,853.5	70,482
G18	100	25	50,000	12,000	36,000	2,000	\$3,654.4	70,538
G19	100	25	50,000	24,000	24,000	2,000	\$3,639.4	69,717
G20	100	25	50,000	36,000	12,000	2,000	\$3,624.4	68,897
H21	100	13	75,000	6,000	18,000	1,000	\$3,426.2	68,132
H22	100	13	75,000	12,000	12,000	1,000	\$3,418.6	67,722
H23	100	13	75,000	18,000	6,000	1,000	\$3,411.0	67,312
I24	50	38	25,000*	36,000*	36,000	3,000	\$3,518.9	71,712
I25	50	38	25,000**	36,000**	36,000	3,000	\$3,579.3	71,712

\* 5% of participants recruited pre-conception

\*\* 25% of participants recruited pre-conception

**Figure I-1. Total Cost and Year 20 Participants for Sample Size-Constrained Design Options (New Retention Rates)**



**Figure I-1. Total cost and year 20 participants for sample size-constrained design options.**

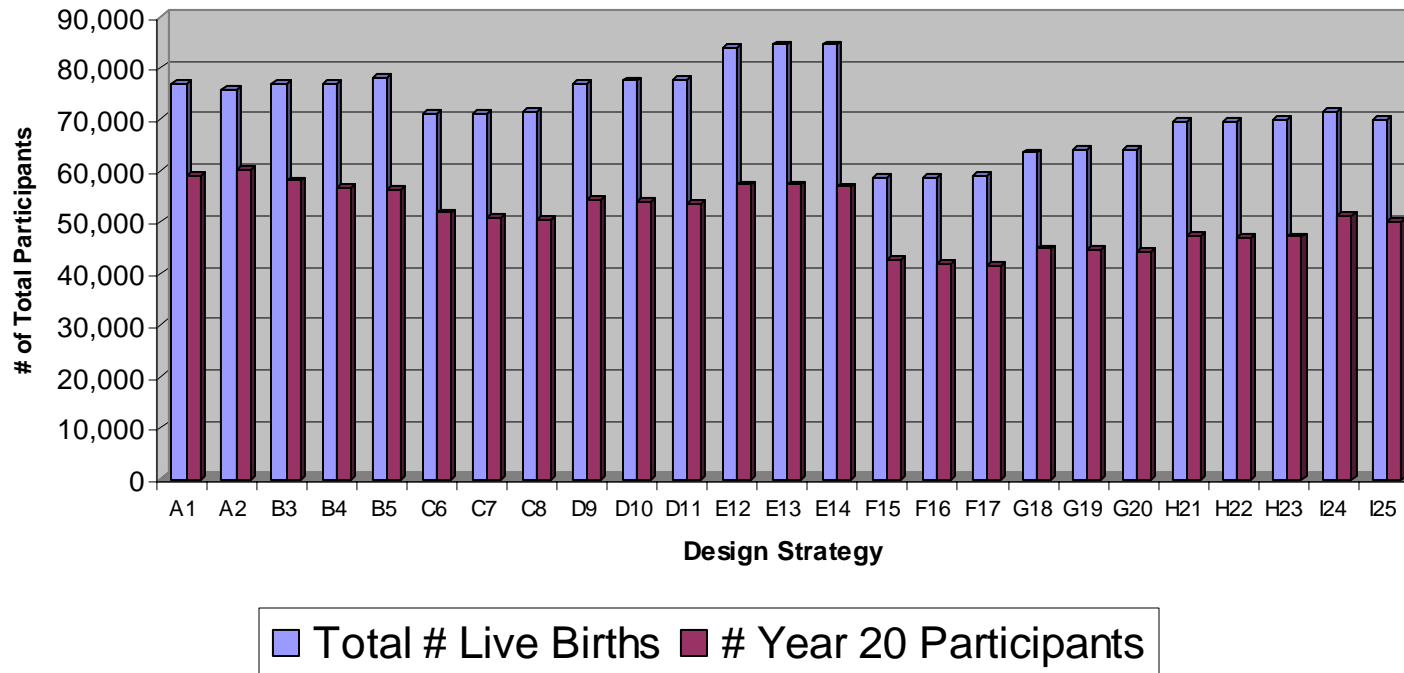
**Table I-2. Summary of Budget-Constrained Cost Estimates, New Retention Rates**

Strategy	Constraints						# of Centers	Total # Live Births	# Year 20 Participants
	Number of PSUs	% Parts. NPBS	% Parts. Area PBS	% Parts. PBS-Patients	% Parts. Volunteers	Cost (millions)			
A1	0	0	0	0.97	0.03	\$2,746.9	38	76,750	59,049
A2	0	0	0	0.50	0.50	\$2,705.9	38	75,750	60,146
B3	0	0	0.24	0.72	0.04	\$2,745.4	39	77,000	58,018
B4	0	0	0.48	0.48	0.04	\$2,722.2	39	77,000	56,755
B5	0	0	0.72	0.24	0.04	\$2,721.0	39	78,000	56,212
C6	50	0.25	0.18	0.54	0.03	\$2,735.3	27	71,000	51,789
C7	50	0.25	0.36	0.36	0.03	\$2,719.3	27	71,000	50,916
C8	50	0.25	0.54	0.18	0.03	\$2,714.1	27	71,500	50,395
D9	50	0.5	0.12	0.36	0.02	\$2,711.8	19	77,000	54,314
D10	50	0.5	0.24	0.24	0.02	\$2,711.1	19	77,500	54,031
D11	50	0.5	0.36	0.12	0.02	\$2,704.9	19	77,750	53,567
E12	50	0.75	0.06	0.18	0.01	\$2,705.5	11	84,000	57,231
E13	50	0.75	0.12	0.12	0.01	\$2,709.8	11	84,500	57,225
E14	50	0.75	0.18	0.06	0.01	\$2,703.3	11	84,500	56,879
F15	100	0.25	0.18	0.54	0.03	\$2,721.6	22	58,500	42,672
F16	100	0.25	0.36	0.36	0.03	\$2,708.4	22	58,500	41,952
F17	100	0.25	0.54	0.18	0.03	\$2,706.1	22	59,000	41,584
G18	100	0.5	0.12	0.36	0.02	\$2,713.0	16	63,500	44,791
G19	100	0.5	0.24	0.24	0.02	\$2,714.2	16	64,000	44,619
G20	100	0.5	0.36	0.12	0.02	\$2,704.6	16	64,000	44,094
H21	100	0.75	0.06	0.18	0.01	\$2,706.1	9	69,500	47,352
H22	100	0.75	0.12	0.12	0.01	\$2,700.9	9	69,500	47,067
H23	100	0.75	0.18	0.06	0.01	\$2,706.2	9	70,000	47,118
I24	50	0.25*	0.36*	0.36	0.03	\$2,719.4	27	71,500	51,274
I25	50	0.25**	0.36**	0.36	0.03	\$2,713.2	26	70,000	50,199

\* 5% of participants recruited pre-conception

\*\* 25% of participants recruited pre-conception

**Figure I-2. Number of Live Births and Year 20 Participants in Budget-Constrained Design Strategies (New Retention Rates)**



**Figure I-2. Number of live births and year 20 participants in budget-constrained design strategies.**

## Detailed Summaries of Sample-Size-Constrained Cost Estimates Based on Revised Retention Rates

<i>Sample Size-Constrained Design Option A1 - 100,000 Live Births</i>					
National PBS	0	# of PSUs	0	Sample Sizes:	
Area PBS	0	# Centers	0	Year 5	96,962
PBS of Center Patients	97,000			Year 10	89,765
Volunteer Sample	3,000			Year 20	76,936
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$0.0	\$0.0	\$19.9	\$0.6	\$20.5
Recruitment	\$0.0	\$0.0	\$109.1	\$52.9	\$162.0
Data Collection	\$0.0	\$0.0	\$1,716.1	\$55.2	\$1,771.3
Retention/Tracking	\$0.0	\$0.0	\$327.4	\$10.6	\$337.9
Sample Analysis & Storage	\$0.0	\$0.0	\$593.3	\$18.9	\$612.2
Data Management	\$0.0	\$0.0	\$299.5	\$9.6	\$309.2
Project Management	\$0.0	\$0.0	\$252.1	\$8.1	\$260.2
Total	\$0.0	\$0.0	\$3,317.4	\$155.9	\$3,473.3

<i>Sample Size-Constrained Design Option A2 - 100,000 Live Births</i>					
National PBS	0	# of PSUs	0	Sample Sizes:	
Area PBS	0	# Centers	0	Year 5	97,318
PBS of Center Patients	50,000			Year 10	90,928
Volunteer Sample	50,000			Year 20	79,401
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$0.0	\$0.0	\$10.3	\$10.3	\$20.5
Recruitment	\$0.0	\$0.0	\$56.3	\$46.3	\$102.5
Data Collection	\$0.0	\$0.0	\$876.7	\$910.9	\$1,787.6
Retention/Tracking	\$0.0	\$0.0	\$168.3	\$176.0	\$344.3
Sample Analysis & Storage	\$0.0	\$0.0	\$305.8	\$314.9	\$620.7
Data Management	\$0.0	\$0.0	\$153.7	\$159.7	\$313.3
Project Management	\$0.0	\$0.0	\$127.2	\$133.0	\$260.2
Total	\$0.0	\$0.0	\$1,698.2	\$1,751.0	\$3,449.2

<b>Sample Size-Constrained Design Option B3 - 100,000 Live Births</b>					
National PBS	0	# of PSUs	0	<u>Sample Sizes:</u>	
Area PBS	24,000	# Centers	50	Year 5	95,230
PBS of Center Patients	72,000			Year 10	87,873
Volunteer Sample	4,000			Year 20	75,348
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$0.0	\$4.9	\$14.8	\$0.8	\$20.5
Recruitment	\$0.0	\$33.0	\$81.0	\$40.0	\$154.0
Data Collection	\$0.0	\$408.9	\$1,284.1	\$74.1	\$1,767.1
Retention/Tracking	\$0.0	\$74.6	\$243.6	\$14.2	\$332.3
Sample Analysis & Storage	\$0.0	\$137.8	\$440.4	\$25.2	\$603.4
Data Management	\$0.0	\$69.1	\$223.3	\$12.9	\$305.2
Project Management	\$0.0	\$58.6	\$190.6	\$11.1	\$260.2
Total	\$0.0	\$786.8	\$2,477.7	\$178.2	\$3,442.7

<b>Sample Size-Constrained Design Option B4 - 100,000 Live Births</b>					
National PBS	0	# of PSUs	0	<u>Sample Sizes:</u>	
Area PBS	48,000	# Centers	50	Year 5	93,490
PBS of Center Patients	48,000			Year 10	85,957
Volunteer Sample	4,000			Year 20	73,707
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$0.0	\$9.8	\$9.8	\$0.8	\$20.5
Recruitment	\$0.0	\$66.0	\$54.0	\$27.2	\$147.2
Data Collection	\$0.0	\$824.4	\$863.4	\$74.8	\$1,762.6
Retention/Tracking	\$0.0	\$149.6	\$162.8	\$14.2	\$326.6
Sample Analysis & Storage	\$0.0	\$275.6	\$293.6	\$25.2	\$594.4
Data Management	\$0.0	\$138.7	\$149.6	\$13.0	\$301.2
Project Management	\$0.0	\$119.4	\$129.6	\$11.3	\$260.2
Total	\$0.0	\$1,583.6	\$1,662.7	\$166.4	\$3,412.7

<b>Sample Size-Constrained Design Option B5 - 100,000 Live Births</b>					
National PBS	0	# of PSUs	0	<u>Sample Sizes:</u>	
Area PBS	72,000	# Centers	50	Year 5	91,751
PBS of Center Patients	24,000			Year 10	84,040
Volunteer Sample	4,000			Year 20	72,067
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$0.0	\$14.8	\$4.9	\$0.8	\$20.5
Recruitment	\$0.0	\$99.0	\$27.0	\$14.4	\$140.4
Data Collection	\$0.0	\$1,247.1	\$435.5	\$75.5	\$1,758.1
Retention/Tracking	\$0.0	\$225.0	\$81.6	\$14.2	\$320.8
Sample Analysis & Storage	\$0.0	\$413.4	\$146.8	\$25.2	\$585.4
Data Management	\$0.0	\$209.1	\$75.1	\$13.0	\$297.2
Project Management	\$0.0	\$182.6	\$66.1	\$11.5	\$260.2
Total	\$0.0	\$2,391.0	\$837.1	\$154.6	\$3,382.6



<b>Sample Size-Constrained Design Option C6 - 100,000 Live Births</b>					
National PBS	25,000	# of PSUs	50	Sample Sizes:	
Area PBS	18,000	# Centers	38	Year 5	93,159
PBS of Center Patients	54,000			Year 10	85,100
Volunteer Sample	3,000			Year 20	72,943
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$6.1	\$3.7	\$11.1	\$0.6	\$21.5
Recruitment	\$50.0	\$25.0	\$61.4	\$30.4	\$166.7
Data Collection	\$561.6	\$308.2	\$968.1	\$55.9	\$1,893.9
Retention/Tracking	\$73.9	\$56.2	\$183.4	\$10.7	\$324.1
Sample Analysis & Storage	\$138.3	\$103.4	\$330.3	\$18.9	\$590.8
Data Management	\$69.1	\$52.1	\$168.6	\$9.7	\$299.5
Project Management	\$59.5	\$45.2	\$147.0	\$8.5	\$260.2
Total	\$958.5	\$593.6	\$1,869.9	\$134.7	\$3,556.7

<b>Sample Size-Constrained Design Option C7 - 100,000 Live Births</b>					
National PBS	25,000	# of PSUs	50	Sample Sizes:	
Area PBS	36,000	# Centers	38	Year 5	91,854
PBS of Center Patients	36,000			Year 10	83,662
Volunteer Sample	3,000			Year 20	71,712
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$6.1	\$7.4	\$7.4	\$0.6	\$21.5
Recruitment	\$50.0	\$49.9	\$40.9	\$20.6	\$161.5
Data Collection	\$561.6	\$621.4	\$651.0	\$56.4	\$1,890.5
Retention/Tracking	\$74.0	\$112.5	\$122.5	\$10.7	\$319.7
Sample Analysis & Storage	\$138.3	\$206.7	\$220.2	\$18.9	\$584.1
Data Management	\$69.3	\$104.6	\$112.8	\$9.8	\$296.5
Project Management	\$60.4	\$91.7	\$99.5	\$8.7	\$260.2
Total	\$959.8	\$1,194.3	\$1,254.3	\$125.7	\$3,534.0

<b>Sample Size-Constrained Design Option C8 - 100,000 Live Births</b>					
National PBS	25,000	# of PSUs	50	Sample Sizes:	
Area PBS	54,000	# Centers	38	Year 5	90,550
PBS of Center Patients	18,000			Year 10	82,225
Volunteer Sample	3,000			Year 20	70,482
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$6.1	\$11.1	\$3.7	\$0.6	\$21.5
Recruitment	\$50.0	\$74.9	\$20.5	\$10.9	\$156.3
Data Collection	\$561.6	\$940.1	\$328.4	\$56.9	\$1,887.1
Retention/Tracking	\$74.2	\$169.2	\$61.4	\$10.7	\$315.4
Sample Analysis & Storage	\$138.3	\$310.1	\$110.1	\$18.9	\$577.3
Data Management	\$69.6	\$157.5	\$56.6	\$9.8	\$293.5
Project Management	\$61.3	\$139.6	\$50.5	\$8.8	\$260.2
Total	\$961.1	\$1,802.5	\$631.2	\$116.6	\$3,511.4

<b>Sample Size-Constrained Design Option D9 - 100,000 Live Births</b>					
National PBS	50,000	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS	12,000	# Centers	25	Year 5	91,088
PBS of Center Patients	36,000			Year 10	82,326
Volunteer Sample	2,000			Year 20	70,538
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$10.5	\$2.5	\$7.4	\$0.4	\$20.8
Recruitment	\$65.0	\$16.5	\$40.5	\$20.0	\$142.0
Data Collection	\$817.9	\$204.4	\$642.1	\$37.1	\$1,701.5
Retention/Tracking	\$148.3	\$37.6	\$122.8	\$7.1	\$315.8
Sample Analysis & Storage	\$276.6	\$68.9	\$220.2	\$12.6	\$578.2
Data Management	\$139.1	\$35.0	\$113.2	\$6.5	\$293.8
Project Management	\$122.5	\$31.0	\$100.9	\$5.9	\$260.2
Total	\$1,579.8	\$395.9	\$1,247.0	\$89.6	\$3,312.3

<b>Sample Size-Constrained Design Option D10 - 100,000 Live Births</b>					
National PBS	50,000	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS	24,000	# Centers	25	Year 5	90,218
PBS of Center Patients	24,000			Year 10	81,368
Volunteer Sample	2,000			Year 20	69,717
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$10.5	\$4.9	\$4.9	\$0.4	\$20.8
Recruitment	\$65.0	\$33.0	\$27.0	\$13.6	\$138.6
Data Collection	\$817.9	\$412.2	\$431.7	\$37.4	\$1,699.2
Retention/Tracking	\$148.5	\$75.3	\$82.0	\$7.1	\$312.9
Sample Analysis & Storage	\$276.6	\$137.8	\$146.8	\$12.6	\$573.8
Data Management	\$139.5	\$70.2	\$75.7	\$6.6	\$291.8
Project Management	\$123.7	\$62.6	\$68.0	\$5.9	\$260.2
Total	\$1,581.7	\$796.0	\$836.0	\$83.6	\$3,297.3

<b>Sample Size-Constrained Design Option D11 - 100,000 Live Births</b>					
National PBS	50,000	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS	36,000	# Centers	25	Year 5	89,348
PBS of Center Patients	12,000			Year 10	80,410
Volunteer Sample	2,000			Year 20	68,897
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$10.5	\$7.4	\$2.5	\$0.4	\$20.8
Recruitment	\$65.0	\$49.5	\$13.5	\$7.2	\$135.2
Data Collection	\$817.9	\$623.5	\$217.8	\$37.7	\$1,697.0
Retention/Tracking	\$148.7	\$113.1	\$41.0	\$7.2	\$310.0
Sample Analysis & Storage	\$276.6	\$206.7	\$73.4	\$12.6	\$569.3
Data Management	\$139.8	\$105.5	\$37.9	\$6.6	\$289.8
Project Management	\$125.0	\$94.9	\$34.3	\$6.0	\$260.2
Total	\$1,583.5	\$1,200.7	\$420.4	\$77.6	\$3,282.2

<b>Sample Size-Constrained Design Option E12 - 100,000 Live Births</b>					
National PBS	75,000	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS	6,000	# Centers	13	Year 5	89,017
PBS of Center Patients	18,000			Year 10	79,553
Volunteer Sample	1,000			Year 20	68,132
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$14.9	\$1.2	\$3.7	\$0.2	\$20.0
Recruitment	\$80.0	\$8.5	\$20.9	\$10.4	\$119.7
Data Collection	\$1,074.2	\$103.8	\$326.1	\$18.8	\$1,522.8
Retention/Tracking	\$223.4	\$18.9	\$61.6	\$3.6	\$307.5
Sample Analysis & Storage	\$414.8	\$34.5	\$110.1	\$6.3	\$565.7
Data Management	\$210.2	\$17.6	\$57.0	\$3.3	\$288.2
Project Management	\$189.2	\$16.0	\$52.0	\$3.0	\$260.2
Total	\$2,206.7	\$200.4	\$631.4	\$45.6	\$3,084.1

<b>Sample Size-Constrained Design Option E13 - 100,000 Live Births</b>					
National PBS	75,000	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS	12,000	# Centers	13	Year 5	88,582
PBS of Center Patients	12,000			Year 10	79,073
Volunteer Sample	1,000			Year 20	67,722
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$14.9	\$2.5	\$2.5	\$0.2	\$20.0
Recruitment	\$80.0	\$16.9	\$13.9	\$7.0	\$117.9
Data Collection	\$1,074.2	\$209.2	\$219.3	\$19.0	\$1,521.7
Retention/Tracking	\$223.6	\$37.8	\$41.1	\$3.6	\$306.1
Sample Analysis & Storage	\$414.8	\$68.9	\$73.4	\$6.3	\$563.4
Data Management	\$210.5	\$35.3	\$38.1	\$3.3	\$287.2
Project Management	\$190.2	\$32.1	\$34.9	\$3.0	\$260.2
Total	\$2,208.2	\$402.7	\$423.1	\$42.5	\$3,076.5

<b>Sample Size-Constrained Design Option E14 - 100,000 Live Births</b>					
National PBS	75,000	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS	18,000	# Centers	13	Year 5	88,147
PBS of Center Patients	6,000			Year 10	78,594
Volunteer Sample	1,000			Year 20	67,312
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$14.9	\$3.7	\$1.2	\$0.2	\$20.0
Recruitment	\$80.0	\$25.4	\$7.0	\$3.7	\$116.1
Data Collection	\$1,074.2	\$316.6	\$110.6	\$19.2	\$1,520.6
Retention/Tracking	\$223.7	\$56.7	\$20.6	\$3.6	\$304.6
Sample Analysis & Storage	\$414.8	\$103.4	\$36.7	\$6.3	\$561.2
Data Management	\$210.8	\$53.0	\$19.1	\$3.3	\$286.2
Project Management	\$191.2	\$48.4	\$17.5	\$3.1	\$260.2
Total	\$2,209.7	\$607.2	\$212.7	\$39.3	\$3,068.9

<b>Sample Size-Constrained Design Option F15 - 100,000 Live Births</b>					
National PBS	25,000	# of PSUs	100	<u>Sample Sizes:</u>	
Area PBS	18,000	# Centers	38	Year 5	93,159
PBS of Center Patients	54,000			Year 10	85,100
Volunteer Sample	3,000			Year 20	72,943
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$7.9	\$3.7	\$11.1	\$0.6	\$23.3
Recruitment	\$85.0	\$25.0	\$61.4	\$30.4	\$201.7
Data Collection	\$867.0	\$308.2	\$968.1	\$55.9	\$2,199.2
Retention/Tracking	\$73.9	\$56.2	\$183.4	\$10.7	\$324.1
Sample Analysis & Storage	\$138.3	\$103.4	\$330.3	\$18.9	\$590.8
Data Management	\$69.1	\$52.1	\$168.6	\$9.7	\$299.5
Project Management	\$59.5	\$45.2	\$147.0	\$8.5	\$260.2
Total	\$1,300.6	\$593.6	\$1,869.9	\$134.7	\$3,898.8

<b>Sample Size-Constrained Design Option F16 - 100,000 Live Births</b>					
National PBS	25,000	# of PSUs	100	<u>Sample Sizes:</u>	
Area PBS	36,000	# Centers	38	Year 5	91,854
PBS of Center Patients	36,000			Year 10	83,662
Volunteer Sample	3,000			Year 20	71,712
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$7.9	\$7.4	\$7.4	\$0.6	\$23.3
Recruitment	\$85.0	\$49.9	\$40.9	\$20.6	\$196.5
Data Collection	\$867.0	\$621.4	\$651.0	\$56.4	\$2,195.8
Retention/Tracking	\$74.0	\$112.5	\$122.5	\$10.7	\$319.7
Sample Analysis & Storage	\$138.3	\$206.7	\$220.2	\$18.9	\$584.1
Data Management	\$69.3	\$104.6	\$112.8	\$9.8	\$296.5
Project Management	\$60.4	\$91.7	\$99.5	\$8.7	\$260.2
Total	\$1,301.9	\$1,194.3	\$1,254.3	\$125.7	\$3,876.1

<b>Sample Size-Constrained Design Option F17 - 100,000 Live Births</b>					
National PBS	25,000	# of PSUs	100	<u>Sample Sizes:</u>	
Area PBS	54,000	# Centers	38	Year 5	90,550
PBS of Center Patients	18,000			Year 10	82,225
Volunteer Sample	3,000			Year 20	70,482
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$7.9	\$11.1	\$3.7	\$0.6	\$23.3
Recruitment	\$85.0	\$74.9	\$20.5	\$10.9	\$191.3
Data Collection	\$867.0	\$940.1	\$328.4	\$56.9	\$2,192.4
Retention/Tracking	\$74.2	\$169.2	\$61.4	\$10.7	\$315.4
Sample Analysis & Storage	\$138.3	\$310.1	\$110.1	\$18.9	\$577.3
Data Management	\$69.6	\$157.5	\$56.6	\$9.8	\$293.5
Project Management	\$61.3	\$139.6	\$50.5	\$8.8	\$260.2
Total	\$1,303.2	\$1,802.5	\$631.2	\$116.6	\$3,853.5

<b>Sample Size-Constrained Design Option G18 - 100,000 Live Births</b>					
National PBS	50,000	# of PSUs	100	Sample Sizes:	
Area PBS	12,000	# Centers	25	Year 5	91,088
PBS of Center Patients	36,000			Year 10	82,326
Volunteer Sample	2,000			Year 20	70,538
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$12.3	\$2.5	\$7.4	\$0.4	\$22.5
Recruitment	\$100.0	\$16.5	\$40.5	\$20.0	\$177.0
Data Collection	\$1,123.3	\$204.4	\$642.1	\$37.1	\$2,006.8
Retention/Tracking	\$148.3	\$37.6	\$122.8	\$7.1	\$315.8
Sample Analysis & Storage	\$276.6	\$68.9	\$220.2	\$12.6	\$578.2
Data Management	\$139.1	\$35.0	\$113.2	\$6.5	\$293.8
Project Management	\$122.5	\$31.0	\$100.9	\$5.9	\$260.2
Total	\$1,922.0	\$395.9	\$1,247.0	\$89.6	\$3,654.4

<b>Sample Size-Constrained Design Option G19 - 100,000 Live Births</b>					
National PBS	50,000	# of PSUs	100	Sample Sizes:	
Area PBS	24,000	# Centers	25	Year 5	90,218
PBS of Center Patients	24,000			Year 10	81,368
Volunteer Sample	2,000			Year 20	69,717
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$12.3	\$4.9	\$4.9	\$0.4	\$22.5
Recruitment	\$100.0	\$33.0	\$27.0	\$13.6	\$173.6
Data Collection	\$1,123.3	\$412.2	\$431.7	\$37.4	\$2,004.6
Retention/Tracking	\$148.5	\$75.3	\$82.0	\$7.1	\$312.9
Sample Analysis & Storage	\$276.6	\$137.8	\$146.8	\$12.6	\$573.8
Data Management	\$139.5	\$70.2	\$75.7	\$6.6	\$291.8
Project Management	\$123.7	\$62.6	\$68.0	\$5.9	\$260.2
Total	\$1,923.8	\$796.0	\$836.0	\$83.6	\$3,639.4

<b>Sample Size-Constrained Design Option G20 - 100,000 Live Births</b>					
National PBS	50,000	# of PSUs	100	Sample Sizes:	
Area PBS	36,000	# Centers	25	Year 5	89,348
PBS of Center Patients	12,000			Year 10	80,410
Volunteer Sample	2,000			Year 20	68,897
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$12.3	\$7.4	\$2.5	\$0.4	\$22.5
Recruitment	\$100.0	\$49.5	\$13.5	\$7.2	\$170.2
Data Collection	\$1,123.3	\$623.5	\$217.8	\$37.7	\$2,002.3
Retention/Tracking	\$148.7	\$113.1	\$41.0	\$7.2	\$310.0
Sample Analysis & Storage	\$276.6	\$206.7	\$73.4	\$12.6	\$569.3
Data Management	\$139.8	\$105.5	\$37.9	\$6.6	\$289.8
Project Management	\$125.0	\$94.9	\$34.3	\$6.0	\$260.2
Total	\$1,925.6	\$1,200.7	\$420.4	\$77.6	\$3,624.4

<b>Sample Size-Constrained Design Option H21 - 100,000 Live Births</b>					
National PBS	75,000	# of PSUs	100	Sample Sizes:	
Area PBS	6,000	# Centers	13	Year 5	89,017
PBS of Center Patients	18,000			Year 10	79,553
Volunteer Sample	1,000			Year 20	68,132
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$16.6	\$1.2	\$3.7	\$0.2	\$21.8
Recruitment	\$115.0	\$8.5	\$20.9	\$10.4	\$154.7
Data Collection	\$1,379.6	\$103.8	\$326.1	\$18.8	\$1,828.2
Retention/Tracking	\$223.4	\$18.9	\$61.6	\$3.6	\$307.5
Sample Analysis & Storage	\$414.8	\$34.5	\$110.1	\$6.3	\$565.7
Data Management	\$210.2	\$17.6	\$57.0	\$3.3	\$288.2
Project Management	\$189.2	\$16.0	\$52.0	\$3.0	\$260.2
Total	\$2,548.9	\$200.4	\$631.4	\$45.6	\$3,426.2

<b>Sample Size-Constrained Design Option H22 - 100,000 Live Births</b>					
National PBS	75,000	# of PSUs	100	Sample Sizes:	
Area PBS	12,000	# Centers	13	Year 5	88,582
PBS of Center Patients	12,000			Year 10	79,073
Volunteer Sample	1,000			Year 20	67,722
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$16.6	\$2.5	\$2.5	\$0.2	\$21.8
Recruitment	\$115.0	\$16.9	\$13.9	\$7.0	\$152.9
Data Collection	\$1,379.6	\$209.2	\$219.3	\$19.0	\$1,827.1
Retention/Tracking	\$223.6	\$37.8	\$41.1	\$3.6	\$306.1
Sample Analysis & Storage	\$414.8	\$68.9	\$73.4	\$6.3	\$563.4
Data Management	\$210.5	\$35.3	\$38.1	\$3.3	\$287.2
Project Management	\$190.2	\$32.1	\$34.9	\$3.0	\$260.2
Total	\$2,550.3	\$402.7	\$423.1	\$42.5	\$3,418.6

<b>Sample Size-Constrained Design Option H23 - 100,000 Live Births</b>					
National PBS	75,000	# of PSUs	100	Sample Sizes:	
Area PBS	18,000	# Centers	13	Year 5	88,147
PBS of Center Patients	6,000			Year 10	78,594
Volunteer Sample	1,000			Year 20	67,312
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$16.6	\$3.7	\$1.2	\$0.2	\$21.8
Recruitment	\$115.0	\$25.4	\$7.0	\$3.7	\$151.1
Data Collection	\$1,379.6	\$316.6	\$110.6	\$19.2	\$1,826.0
Retention/Tracking	\$223.7	\$56.7	\$20.6	\$3.6	\$304.6
Sample Analysis & Storage	\$414.8	\$103.4	\$36.7	\$6.3	\$561.2
Data Management	\$210.8	\$53.0	\$19.1	\$3.3	\$286.2
Project Management	\$191.2	\$48.4	\$17.5	\$3.1	\$260.2
Total	\$2,551.8	\$607.2	\$212.7	\$39.3	\$3,411.0

<b>Sample Size-Constrained Design Option I24 - 100,000 Live Births</b>					
National PBS*	25,000	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS	36,000	# Centers	38	Year 5	91,854
PBS of Center Patients	36,000	*5% pre-conception		Year 10	83,662
Volunteer Sample	3,000			Year 20	71,712
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$6.1	\$7.4	\$7.4	\$0.6	\$21.5
Recruitment	\$50.0	\$49.9	\$40.9	\$20.6	\$161.5
Data Collection	\$555.5	\$612.5	\$651.0	\$56.4	\$1,875.4
Retention/Tracking	\$74.0	\$112.5	\$122.5	\$10.7	\$319.7
Sample Analysis & Storage	\$138.3	\$206.7	\$220.2	\$18.9	\$584.1
Data Management	\$69.3	\$104.6	\$112.8	\$9.8	\$296.5
Project Management	\$60.4	\$91.7	\$99.5	\$8.7	\$260.2
<b>Total</b>	<b>\$953.6</b>	<b>\$1,185.4</b>	<b>\$1,254.3</b>	<b>\$125.7</b>	<b>\$3,518.9</b>

<b>Sample Size-Constrained Design Option I25 - 100,000 Live Births</b>					
National PBS*	25,000	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS	36,000	# Centers	38	Year 5	91,854
PBS of Center Patients	36,000	*25% pre-conception		Year 10	83,662
Volunteer Sample	3,000			Year 20	71,712
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$6.1	\$7.4	\$7.4	\$0.6	\$21.5
Recruitment	\$50.0	\$49.9	\$40.9	\$20.6	\$161.5
Data Collection	\$580.2	\$648.2	\$651.0	\$56.4	\$1,935.8
Retention/Tracking	\$74.0	\$112.5	\$122.5	\$10.7	\$319.7
Sample Analysis & Storage	\$138.3	\$206.7	\$220.2	\$18.9	\$584.1
Data Management	\$69.3	\$104.6	\$112.8	\$9.8	\$296.5
Project Management	\$60.4	\$91.7	\$99.5	\$8.7	\$260.2
<b>Total</b>	<b>\$978.3</b>	<b>\$1,221.0</b>	<b>\$1,254.3</b>	<b>\$125.7</b>	<b>\$3,579.3</b>

## Detailed Summaries of Budget-Constrained Cost Estimates Based on Revised Retention Rates

<i>Budget-Constrained Design Option A1 - 76750 Live Births</i>					
National PBS (0%)	0	# of PSUs	0	<u>Sample Sizes:</u>	
Area PBS (0%)	0	# Centers	38	Year 5	74,418
PBS of Center Patients (97%)	74,448			Year 10	68,895
Volunteer Sample (3%)	2,303			Year 20	59,049
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$0.0	\$0.0	\$19.2	\$0.6	\$19.8
Recruitment	\$0.0	\$0.0	\$83.1	\$40.2	\$123.4
Data Collection	\$0.0	\$0.0	\$1,312.1	\$42.2	\$1,354.3
Retention/Tracking	\$0.0	\$0.0	\$256.4	\$8.3	\$264.7
Sample Analysis & Storage	\$0.0	\$0.0	\$455.3	\$14.5	\$469.8
Data Management	\$0.0	\$0.0	\$246.7	\$7.9	\$254.7
Project Management	\$0.0	\$0.0	\$252.1	\$8.1	\$260.2
Total	\$0.0	\$0.0	\$2,625.0	\$121.9	\$2,746.9

<i>Budget-Constrained Design Option A2 - 75750 Live Births</i>					
National PBS (0%)	0	# of PSUs	0	<u>Sample Sizes:</u>	
Area PBS (0%)	0	# Centers	38	Year 5	73,718
PBS of Center Patients (50%)	37,875			Year 10	68,878
Volunteer Sample (50%)	37,875			Year 20	60,146
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$0.0	\$0.0	\$9.9	\$9.9	\$19.8
Recruitment	\$0.0	\$0.0	\$42.7	\$35.1	\$77.9
Data Collection	\$0.0	\$0.0	\$664.9	\$690.9	\$1,355.8
Retention/Tracking	\$0.0	\$0.0	\$130.3	\$136.2	\$266.5
Sample Analysis & Storage	\$0.0	\$0.0	\$231.6	\$238.5	\$470.2
Data Management	\$0.0	\$0.0	\$125.3	\$130.2	\$255.5
Project Management	\$0.0	\$0.0	\$127.2	\$133.0	\$260.2
Total	\$0.0	\$0.0	\$1,332.0	\$1,373.9	\$2,705.9



<b>Budget-Constrained Design Option B3 - 77000 Live Births</b>					
National PBS (0%)	0	# of PSUs	0	Sample Sizes:	
Area PBS (24%)	18,480	# Centers	39	Year 5	73,327
PBS of Center Patients (72%)	55,440			Year 10	67,662
Volunteer Sample (4%)	3,080			Year 20	58,018
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$0.0	\$4.8	\$14.3	\$0.8	\$19.8
Recruitment	\$0.0	\$25.6	\$63.0	\$31.1	\$119.8
Data Collection	\$0.0	\$316.4	\$993.8	\$57.4	\$1,367.6
Retention/Tracking	\$0.0	\$58.6	\$191.4	\$11.1	\$261.2
Sample Analysis & Storage	\$0.0	\$106.1	\$339.1	\$19.4	\$464.6
Data Management	\$0.0	\$57.1	\$184.5	\$10.7	\$252.3
Project Management	\$0.0	\$58.6	\$190.6	\$11.1	\$260.2
Total	\$0.0	\$627.1	\$1,976.7	\$141.6	\$2,745.4

<b>Budget-Constrained Design Option B4 - 77000 Live Births</b>					
National PBS (0%)	0	# of PSUs	0	Sample Sizes:	
Area PBS (48%)	36,960	# Centers	39	Year 5	71,987
PBS of Center Patients (48%)	36,960			Year 10	66,187
Volunteer Sample (4%)	3,080			Year 20	56,755
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$0.0	\$9.5	\$9.5	\$0.8	\$19.8
Recruitment	\$0.0	\$51.2	\$42.0	\$21.2	\$114.4
Data Collection	\$0.0	\$637.9	\$668.2	\$57.9	\$1,364.1
Retention/Tracking	\$0.0	\$117.6	\$128.0	\$11.2	\$256.8
Sample Analysis & Storage	\$0.0	\$212.2	\$226.1	\$19.4	\$457.7
Data Management	\$0.0	\$114.7	\$123.7	\$10.7	\$249.2
Project Management	\$0.0	\$119.4	\$129.6	\$11.3	\$260.2
Total	\$0.0	\$1,262.7	\$1,327.1	\$132.4	\$2,722.2

<b>Budget-Constrained Design Option B5 - 78000 Live Births</b>					
National PBS (0%)	0	# of PSUs	0	Sample Sizes:	
Area PBS (72%)	56,160	# Centers	39	Year 5	71,566
PBS of Center Patients (24%)	18,720			Year 10	65,551
Volunteer Sample (4%)	3,120			Year 20	56,212
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$0.0	\$14.3	\$4.8	\$0.8	\$19.8
Recruitment	\$0.0	\$77.2	\$21.1	\$11.2	\$109.5
Data Collection	\$0.0	\$972.7	\$339.7	\$58.9	\$1,371.3
Retention/Tracking	\$0.0	\$179.0	\$64.9	\$11.3	\$255.2
Sample Analysis & Storage	\$0.0	\$322.5	\$114.5	\$19.6	\$456.6
Data Management	\$0.0	\$174.7	\$62.8	\$10.9	\$248.3
Project Management	\$0.0	\$182.6	\$66.1	\$11.5	\$260.2
Total	\$0.0	\$1,923.0	\$673.8	\$124.2	\$2,721.0

<b>Budget-Constrained Design Option C6 - 71000 Live Births</b>					
National PBS (25%)	17,750	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS (18%)	12,780	# Centers	27	Year 5	66,143
PBS of Center Patients (54%)	38,340			Year 10	60,421
Volunteer Sample (3%)	2,130			Year 20	51,789
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$6.1	\$3.5	\$10.6	\$0.6	\$20.9
Recruitment	\$45.7	\$17.7	\$43.6	\$21.6	\$128.5
Data Collection	\$487.3	\$218.9	\$687.6	\$39.7	\$1,433.5
Retention/Tracking	\$54.3	\$41.3	\$134.9	\$7.8	\$238.4
Sample Analysis & Storage	\$98.2	\$73.4	\$234.5	\$13.4	\$419.5
Data Management	\$54.0	\$40.8	\$132.0	\$7.6	\$234.4
Project Management	\$59.5	\$45.2	\$147.0	\$8.5	\$260.2
Total	\$805.1	\$440.8	\$1,390.1	\$99.3	\$2,735.3

<b>Budget-Constrained Design Option C7 - 71000 Live Births</b>					
National PBS (25%)	17,750	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS (36%)	25,560	# Centers	27	Year 5	65,216
PBS of Center Patients (36%)	25,560			Year 10	59,400
Volunteer Sample (3%)	2,130			Year 20	50,916
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$6.1	\$7.1	\$7.1	\$0.6	\$20.9
Recruitment	\$45.7	\$35.5	\$29.1	\$14.7	\$124.8
Data Collection	\$487.3	\$441.4	\$462.3	\$40.0	\$1,431.1
Retention/Tracking	\$54.5	\$82.8	\$90.2	\$7.9	\$235.4
Sample Analysis & Storage	\$98.2	\$146.8	\$156.3	\$13.4	\$414.7
Data Management	\$54.3	\$81.9	\$88.4	\$7.7	\$232.3
Project Management	\$60.4	\$91.7	\$99.5	\$8.7	\$260.2
Total	\$806.4	\$887.1	\$932.9	\$92.9	\$2,719.3

<b>Budget-Constrained Design Option C8 - 71500 Live Births</b>					
National PBS (25%)	17,875	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS (54%)	38,610	# Centers	27	Year 5	64,743
PBS of Center Patients (18%)	12,870			Year 10	58,791
Volunteer Sample (3%)	2,145			Year 20	50,395
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$6.1	\$10.6	\$3.5	\$0.6	\$20.9
Recruitment	\$45.7	\$53.3	\$14.6	\$7.8	\$121.4
Data Collection	\$488.6	\$670.6	\$234.2	\$40.6	\$1,433.9
Retention/Tracking	\$55.0	\$125.3	\$45.5	\$7.9	\$233.7
Sample Analysis & Storage	\$98.9	\$221.7	\$78.7	\$13.5	\$412.8
Data Management	\$54.8	\$124.1	\$44.6	\$7.7	\$231.2
Project Management	\$61.3	\$139.6	\$50.5	\$8.8	\$260.2
Total	\$810.4	\$1,345.2	\$471.6	\$86.9	\$2,714.1

<b>Budget-Constrained Design Option D9 - 77000 Live Births</b>					
National PBS (50%)	38,500	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS (12%)	9,240	# Centers	19	Year 5	70,138
PBS of Center Patients (36%)	27,720			Year 10	63,391
Volunteer Sample (2%)	1,540			Year 20	54,314
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$10.5	\$2.4	\$7.1	\$0.4	\$20.4
Recruitment	\$58.1	\$12.6	\$30.9	\$15.2	\$116.8
Data Collection	\$700.0	\$156.6	\$491.9	\$28.4	\$1,376.9
Retention/Tracking	\$116.8	\$29.6	\$96.7	\$5.6	\$248.7
Sample Analysis & Storage	\$213.0	\$53.1	\$169.5	\$9.7	\$445.2
Data Management	\$115.2	\$29.0	\$93.8	\$5.4	\$243.5
Project Management	\$122.5	\$31.0	\$100.9	\$5.9	\$260.2
Total	\$1,336.1	\$314.3	\$990.8	\$70.6	\$2,711.8

<b>Budget-Constrained Design Option D10 - 77500 Live Births</b>					
National PBS (50%)	38,750	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS (24%)	18,600	# Centers	19	Year 5	69,919
PBS of Center Patients (24%)	18,600			Year 10	63,060
Volunteer Sample (2%)	1,550			Year 20	54,031
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$10.5	\$4.7	\$4.7	\$0.4	\$20.4
Recruitment	\$58.3	\$25.3	\$20.6	\$10.3	\$114.5
Data Collection	\$702.6	\$317.1	\$332.0	\$28.8	\$1,380.4
Retention/Tracking	\$117.7	\$59.6	\$64.9	\$5.7	\$247.9
Sample Analysis & Storage	\$214.3	\$106.8	\$113.8	\$9.8	\$444.7
Data Management	\$116.1	\$58.4	\$63.0	\$5.5	\$243.0
Project Management	\$123.7	\$62.6	\$68.0	\$5.9	\$260.2
Total	\$1,343.2	\$634.6	\$667.0	\$66.3	\$2,711.1

<b>Budget-Constrained Design Option D11 - 77750 Live Births</b>					
National PBS (50%)	38,875	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS (36%)	27,990	# Centers	19	Year 5	69,468
PBS of Center Patients (12%)	9,330			Year 10	62,518
Volunteer Sample (2%)	1,555			Year 20	53,567
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$10.5	\$7.1	\$2.4	\$0.4	\$20.4
Recruitment	\$58.3	\$37.9	\$10.3	\$5.5	\$112.0
Data Collection	\$703.9	\$480.6	\$167.8	\$29.1	\$1,381.3
Retention/Tracking	\$118.2	\$89.9	\$32.6	\$5.7	\$246.4
Sample Analysis & Storage	\$215.0	\$160.7	\$57.1	\$9.8	\$442.6
Data Management	\$116.7	\$88.1	\$31.7	\$5.5	\$242.0
Project Management	\$125.0	\$94.9	\$34.3	\$6.0	\$260.2
Total	\$1,347.6	\$959.3	\$336.2	\$61.9	\$2,704.9

<b>Budget-Constrained Design Option E12 - 84000 Live Births</b>					
National PBS (75%)	63,000	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS (6%)	5,040	# Centers	11	Year 5	74,774
PBS of Center Patients (18%)	15,120			Year 10	66,824
Volunteer Sample (1%)	840			Year 20	57,231
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$14.9	\$1.2	\$3.6	\$0.2	\$19.9
Recruitment	\$72.8	\$7.1	\$17.6	\$8.8	\$106.3
Data Collection	\$951.2	\$87.4	\$274.7	\$15.9	\$1,329.1
Retention/Tracking	\$189.4	\$16.0	\$52.3	\$3.0	\$260.7
Sample Analysis & Storage	\$348.5	\$28.9	\$92.5	\$5.3	\$475.2
Data Management	\$185.3	\$15.5	\$50.3	\$2.9	\$254.0
Project Management	\$189.2	\$16.0	\$52.0	\$3.0	\$260.2
Total	\$1,951.2	\$172.2	\$543.0	\$39.1	\$2,705.5

<b>Budget-Constrained Design Option E13 - 84500 Live Births</b>					
National PBS (75%)	63,375	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS (12%)	10,140	# Centers	11	Year 5	74,852
PBS of Center Patients (12%)	10,140			Year 10	66,817
Volunteer Sample (1%)	845			Year 20	57,225
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$14.9	\$2.4	\$2.4	\$0.2	\$19.9
Recruitment	\$73.0	\$14.3	\$11.8	\$6.0	\$105.1
Data Collection	\$955.0	\$176.9	\$185.4	\$16.1	\$1,333.4
Retention/Tracking	\$190.5	\$32.2	\$35.0	\$3.1	\$260.8
Sample Analysis & Storage	\$350.5	\$58.2	\$62.0	\$5.3	\$476.1
Data Management	\$186.3	\$31.3	\$33.7	\$2.9	\$254.2
Project Management	\$190.2	\$32.1	\$34.9	\$3.0	\$260.2
Total	\$1,960.6	\$347.4	\$365.2	\$36.6	\$2,709.8

<b>Budget-Constrained Design Option E14 - 84500 Live Births</b>					
National PBS (75%)	63,375	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS (18%)	15,210	# Centers	11	Year 5	74,484
PBS of Center Patients (6%)	5,070			Year 10	66,412
Volunteer Sample (1%)	845			Year 20	56,879
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$14.9	\$3.6	\$1.2	\$0.2	\$19.9
Recruitment	\$73.0	\$21.5	\$5.9	\$3.2	\$103.5
Data Collection	\$955.0	\$267.7	\$93.5	\$16.2	\$1,332.4
Retention/Tracking	\$190.7	\$48.3	\$17.5	\$3.1	\$259.6
Sample Analysis & Storage	\$350.5	\$87.3	\$31.0	\$5.3	\$474.2
Data Management	\$186.6	\$47.0	\$16.9	\$2.9	\$253.4
Project Management	\$191.2	\$48.4	\$17.5	\$3.1	\$260.2
Total	\$1,962.0	\$523.8	\$183.6	\$33.9	\$2,703.3

<b>Budget-Constrained Design Option F15 - 58500 Live Births</b>					
National PBS (25%)	14,625	# of PSUs	100	<u>Sample Sizes:</u>	
Area PBS (18%)	10,530	# Centers	22	Year 5	54,498
PBS of Center Patients (54%)	31,590			Year 10	49,783
Volunteer Sample (3%)	1,755			Year 20	42,672
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$7.9	\$3.5	\$10.4	\$0.6	\$22.3
Recruitment	\$78.8	\$14.5	\$35.6	\$17.6	\$146.5
Data Collection	\$760.7	\$179.6	\$564.0	\$32.6	\$1,536.8
Retention/Tracking	\$46.4	\$35.3	\$115.3	\$6.7	\$203.8
Sample Analysis & Storage	\$80.9	\$60.5	\$193.2	\$11.1	\$345.6
Data Management	\$47.5	\$35.9	\$116.2	\$6.7	\$206.3
Project Management	\$59.5	\$45.2	\$147.0	\$8.5	\$260.2
Total	\$1,081.7	\$374.4	\$1,181.8	\$83.7	\$2,721.6

<b>Budget-Constrained Design Option F16 - 58500 Live Births</b>					
National PBS (25%)	14,625	# of PSUs	100	<u>Sample Sizes:</u>	
Area PBS (36%)	21,060	# Centers	22	Year 5	53,735
PBS of Center Patients (36%)	21,060			Year 10	48,942
Volunteer Sample (3%)	1,755			Year 20	41,952
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$7.9	\$6.9	\$6.9	\$0.6	\$22.3
Recruitment	\$78.8	\$29.0	\$23.7	\$12.0	\$143.5
Data Collection	\$760.7	\$362.1	\$379.2	\$32.9	\$1,534.9
Retention/Tracking	\$46.6	\$70.9	\$77.1	\$6.7	\$201.3
Sample Analysis & Storage	\$80.9	\$120.9	\$128.8	\$11.1	\$341.7
Data Management	\$47.8	\$72.2	\$77.8	\$6.7	\$204.5
Project Management	\$60.4	\$91.7	\$99.5	\$8.7	\$260.2
Total	\$1,083.0	\$753.7	\$793.2	\$78.6	\$2,708.4

<b>Budget-Constrained Design Option F17 - 59000 Live Births</b>					
National PBS (25%)	14,750	# of PSUs	100	<u>Sample Sizes:</u>	
Area PBS (54%)	31,860	# Centers	22	Year 5	53,424
PBS of Center Patients (18%)	10,620			Year 10	48,513
Volunteer Sample (3%)	1,770			Year 20	41,584
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$7.9	\$10.4	\$3.5	\$0.6	\$22.3
Recruitment	\$78.9	\$43.7	\$11.9	\$6.3	\$140.7
Data Collection	\$761.9	\$550.6	\$192.3	\$33.3	\$1,538.2
Retention/Tracking	\$47.1	\$107.4	\$39.0	\$6.8	\$200.2
Sample Analysis & Storage	\$81.6	\$182.9	\$65.0	\$11.1	\$340.6
Data Management	\$48.3	\$109.4	\$39.3	\$6.8	\$203.9
Project Management	\$61.3	\$139.6	\$50.5	\$8.8	\$260.2
Total	\$1,086.9	\$1,144.0	\$401.4	\$73.8	\$2,706.1

<b>Budget-Constrained Design Option G18 - 63500 Live Births</b>					
National PBS (50%)	31,750	# of PSUs	100	<u>Sample Sizes:</u>	
Area PBS (12%)	7,620	# Centers	16	Year 5	57,841
PBS of Center Patients (36%)	22,860			Year 10	52,277
Volunteer Sample (2%)	1,270			Year 20	44,791
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$12.3	\$2.3	\$7.0	\$0.4	\$22.0
Recruitment	\$89.1	\$10.5	\$25.9	\$12.8	\$138.2
Data Collection	\$936.2	\$130.2	\$409.0	\$23.6	\$1,499.0
Retention/Tracking	\$99.8	\$25.3	\$82.6	\$4.8	\$212.5
Sample Analysis & Storage	\$175.6	\$43.8	\$139.8	\$8.0	\$367.2
Data Management	\$101.2	\$25.5	\$82.5	\$4.8	\$213.9
Project Management	\$122.5	\$31.0	\$100.9	\$5.9	\$260.2
Total	\$1,536.6	\$268.6	\$847.6	\$60.2	\$2,713.0

<b>Budget-Constrained Design Option G19 - 64000 Live Births</b>					
National PBS (50%)	32,000	# of PSUs	100	<u>Sample Sizes:</u>	
Area PBS (24%)	15,360	# Centers	16	Year 5	57,740
PBS of Center Patients (24%)	15,360			Year 10	52,075
Volunteer Sample (2%)	1,280			Year 20	44,619
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$12.3	\$4.7	\$4.7	\$0.4	\$22.0
Recruitment	\$89.2	\$21.1	\$17.3	\$8.7	\$136.3
Data Collection	\$938.8	\$263.8	\$276.3	\$23.9	\$1,502.8
Retention/Tracking	\$100.6	\$51.0	\$55.5	\$4.8	\$212.0
Sample Analysis & Storage	\$177.0	\$88.2	\$93.9	\$8.1	\$367.2
Data Management	\$102.1	\$51.4	\$55.4	\$4.8	\$213.7
Project Management	\$123.7	\$62.6	\$68.0	\$5.9	\$260.2
Total	\$1,543.6	\$542.8	\$571.1	\$56.6	\$2,714.2

<b>Budget-Constrained Design Option G20 - 64000 Live Births</b>					
National PBS (50%)	32,000	# of PSUs	100	<u>Sample Sizes:</u>	
Area PBS (36%)	23,040	# Centers	16	Year 5	57,183
PBS of Center Patients (12%)	7,680			Year 10	51,462
Volunteer Sample (2%)	1,280			Year 20	44,094
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$12.3	\$7.0	\$2.3	\$0.4	\$22.0
Recruitment	\$89.2	\$31.7	\$8.6	\$4.6	\$134.1
Data Collection	\$938.8	\$399.1	\$139.4	\$24.1	\$1,501.4
Retention/Tracking	\$100.9	\$76.7	\$27.8	\$4.8	\$210.2
Sample Analysis & Storage	\$177.0	\$132.3	\$47.0	\$8.1	\$364.3
Data Management	\$102.4	\$77.4	\$27.8	\$4.8	\$212.5
Project Management	\$125.0	\$94.9	\$34.3	\$6.0	\$260.2
Total	\$1,545.5	\$819.0	\$287.3	\$52.9	\$2,704.6

<b>Budget-Constrained Design Option H21 - 69500 Live Births</b>					
National PBS (75%)	52,125	# of PSUs	100	<u>Sample Sizes:</u>	
Area PBS (6%)	4,170	# Centers	9	Year 5	61,867
PBS of Center Patients (18%)	12,510			Year 10	55,289
Volunteer Sample (1%)	695			Year 20	47,352
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$16.6	\$1.2	\$3.5	\$0.2	\$21.5
Recruitment	\$101.3	\$5.9	\$14.5	\$7.2	\$128.8
Data Collection	\$1,145.1	\$72.0	\$226.3	\$13.1	\$1,456.4
Retention/Tracking	\$162.0	\$13.7	\$44.7	\$2.6	\$223.0
Sample Analysis & Storage	\$288.3	\$23.9	\$76.5	\$4.4	\$393.2
Data Management	\$162.7	\$13.7	\$44.2	\$2.6	\$223.1
Project Management	\$189.2	\$16.0	\$52.0	\$3.0	\$260.2
Total	\$2,065.2	\$146.3	\$461.7	\$33.0	\$2,706.1

<b>Budget-Constrained Design Option H22 - 69500 Live Births</b>					
National PBS (75%)	52,125	# of PSUs	100	<u>Sample Sizes:</u>	
Area PBS (12%)	8,340	# Centers	9	Year 5	61,565
PBS of Center Patients (12%)	8,340			Year 10	54,956
Volunteer Sample (1%)	695			Year 20	47,067
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$16.6	\$2.4	\$2.4	\$0.2	\$21.5
Recruitment	\$101.3	\$11.7	\$9.6	\$4.9	\$127.5
Data Collection	\$1,145.1	\$145.2	\$152.2	\$13.2	\$1,455.6
Retention/Tracking	\$162.2	\$27.4	\$29.8	\$2.6	\$222.0
Sample Analysis & Storage	\$288.3	\$47.9	\$51.0	\$4.4	\$391.6
Data Management	\$163.0	\$27.4	\$29.5	\$2.6	\$222.4
Project Management	\$190.2	\$32.1	\$34.9	\$3.0	\$260.2
Total	\$2,066.7	\$294.0	\$309.4	\$30.8	\$2,700.9

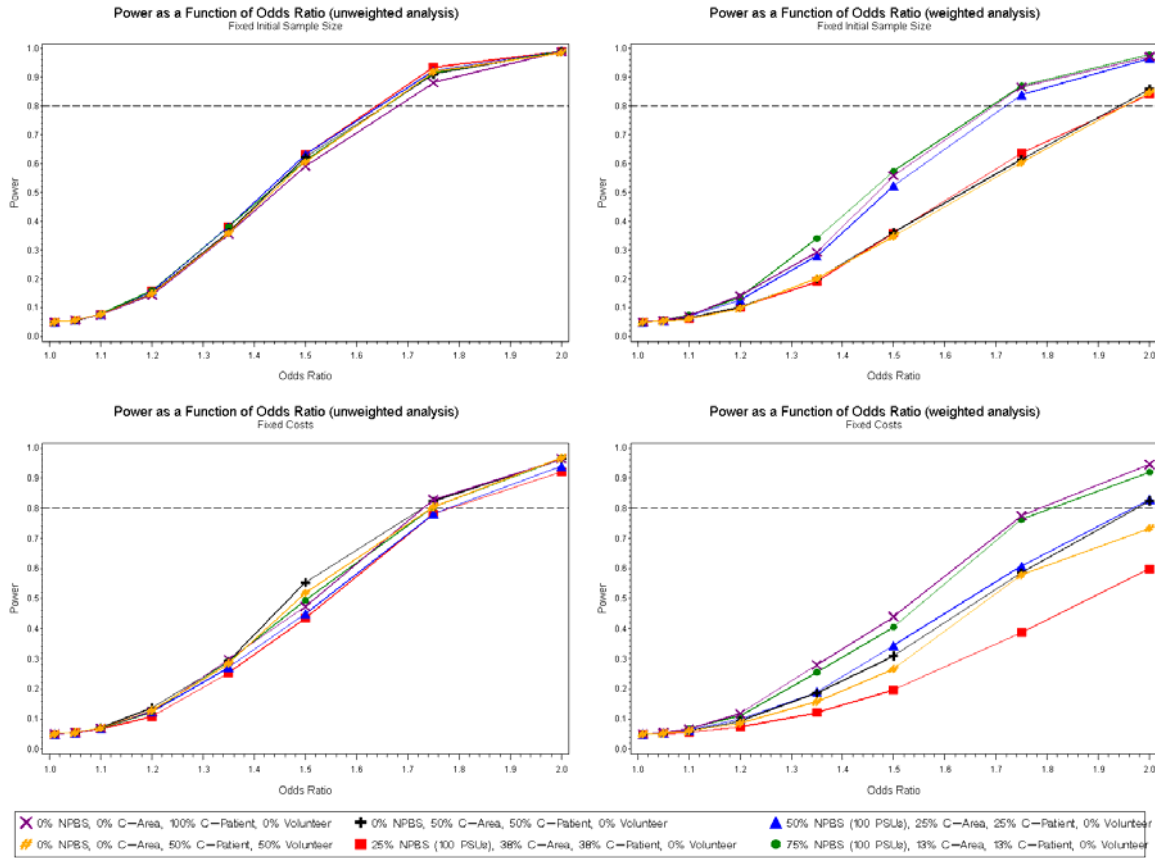
<b>Budget-Constrained Design Option H23 - 70000 Live Births</b>					
National PBS (75%)	52,500	# of PSUs	100	<u>Sample Sizes:</u>	
Area PBS (18%)	12,600	# Centers	9	Year 5	61,703
PBS of Center Patients (6%)	4,200			Year 10	55,016
Volunteer Sample (1%)	700			Year 20	47,118
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$16.6	\$3.5	\$1.2	\$0.2	\$21.5
Recruitment	\$101.5	\$17.6	\$4.8	\$2.6	\$126.6
Data Collection	\$1,148.9	\$220.6	\$77.1	\$13.4	\$1,460.0
Retention/Tracking	\$163.3	\$41.4	\$15.0	\$2.6	\$222.3
Sample Analysis & Storage	\$290.4	\$72.4	\$25.7	\$4.4	\$392.8
Data Management	\$164.0	\$41.3	\$14.9	\$2.6	\$222.8
Project Management	\$191.2	\$48.4	\$17.5	\$3.1	\$260.2
Total	\$2,076.0	\$445.2	\$156.2	\$28.8	\$2,706.2

<b>Budget-Constrained Design Option I24 - 71500 Live Births</b>					
National PBS (25%)*	17,875	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS (36%)	25,740	# Centers	27	Year 5	65,676
PBS of Center Patients (36%)	25,740	*5% pre-conception		Year 10	59,818
Volunteer Sample (3%)	2,145			Year 20	51,274
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$6.1	\$7.1	\$7.1	\$0.6	\$20.9
Recruitment	\$45.7	\$35.6	\$29.1	\$14.7	\$125.1
Data Collection	\$484.2	\$436.9	\$464.3	\$40.2	\$1,425.6
Retention/Tracking	\$54.8	\$83.3	\$90.7	\$7.9	\$236.7
Sample Analysis & Storage	\$98.9	\$147.8	\$157.4	\$13.5	\$417.6
Data Management	\$54.5	\$82.3	\$88.8	\$7.7	\$233.4
Project Management	\$60.4	\$91.7	\$99.5	\$8.7	\$260.2
Total	\$804.6	\$884.6	\$936.9	\$93.2	\$2,719.4

<b>Budget-Constrained Design Option I25 - 70000 Live Births</b>					
National PBS (25%)*	17,500	# of PSUs	50	<u>Sample Sizes:</u>	
Area PBS (36%)	25,200	# Centers	26	Year 5	64,298
PBS of Center Patients (36%)	25,200	*25% pre-conception		Year 10	58,564
Volunteer Sample (3%)	2,100			Year 20	50,199
Major Work Area	NPBS	Area PBS	Patients	Volunteer	Total
Study Design & Start-up	\$6.1	\$7.0	\$7.0	\$0.6	\$20.8
Recruitment	\$45.5	\$34.4	\$28.1	\$14.1	\$122.2
Data Collection	\$497.8	\$450.0	\$451.6	\$39.1	\$1,438.4
Retention/Tracking	\$53.9	\$81.9	\$89.1	\$7.8	\$232.6
Sample Analysis & Storage	\$96.8	\$144.7	\$154.1	\$13.2	\$408.9
Data Management	\$53.7	\$81.2	\$87.5	\$7.6	\$230.0
Project Management	\$60.4	\$91.7	\$99.5	\$8.7	\$260.2
Total	\$814.2	\$890.9	\$917.1	\$91.1	\$2,713.2

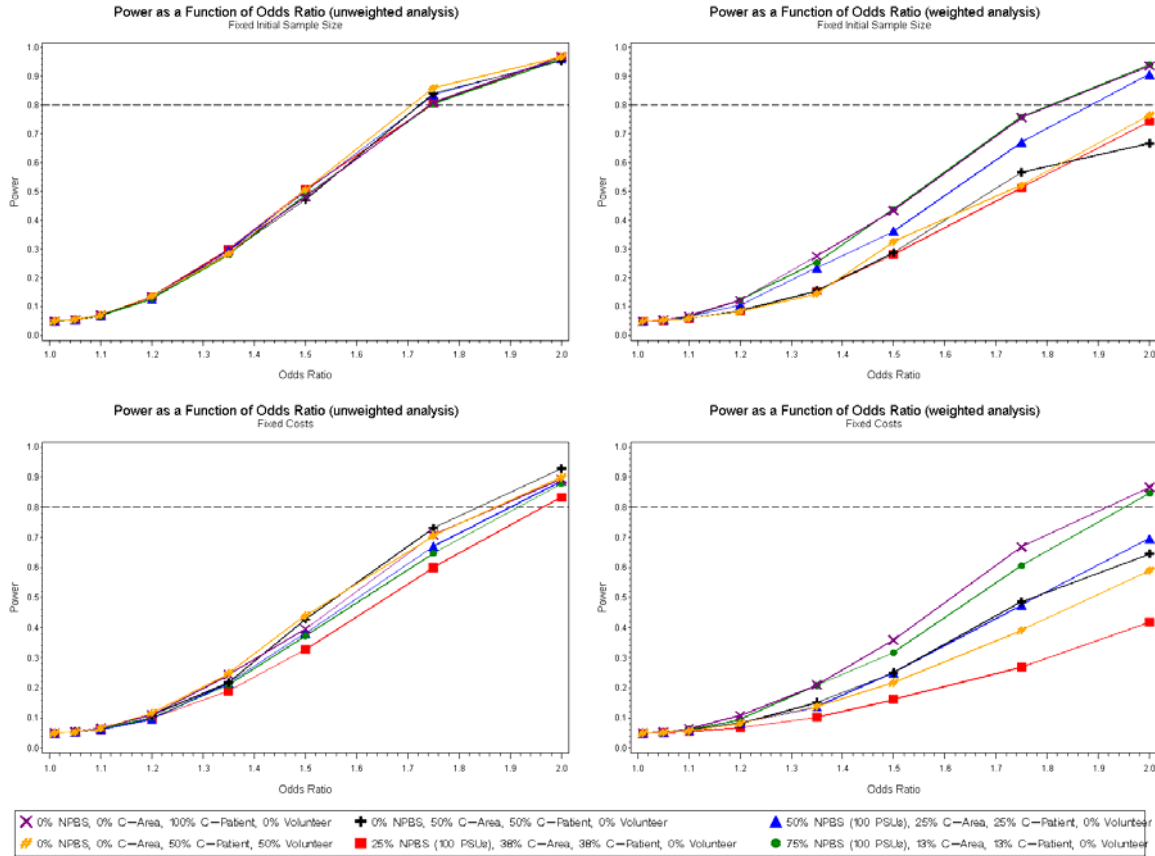


**Hypothesis 1.1a: Undesirable Outcomes of Pregnancy - Early Diagnosis (see Table 10-3)**



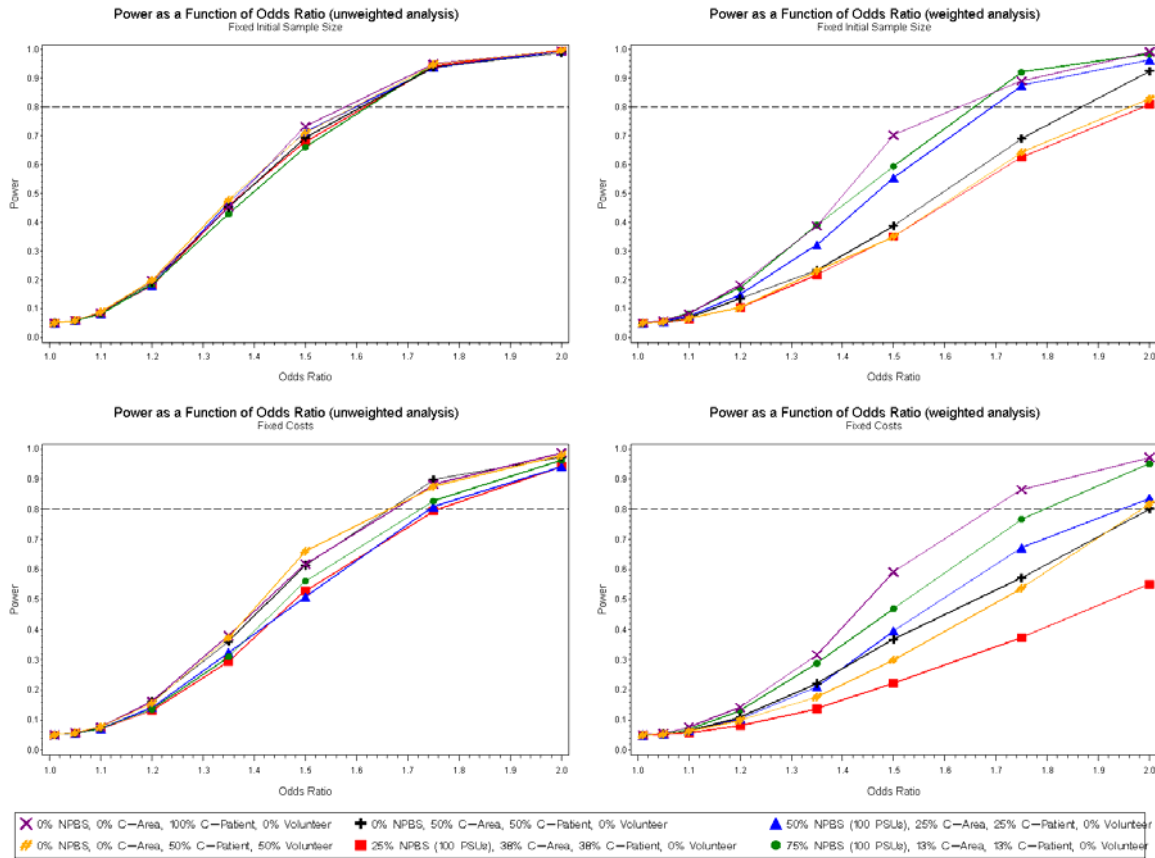
**Figure I-3. Power to detect a significant odds ratio for unweighted (left side panels) and weighted (right side panels) analyses and for fixed sample size (top panels) and fixed cost samples (bottom panels) (assuming a disease prevalence of 0.6%, an exposure prevalence of 5%, 100 PSUs, and the alternative retention rates).**

**Hypothesis 1.1b: Undesirable Outcomes of Pregnancy - Late Diagnosis (see Table 10-3)**



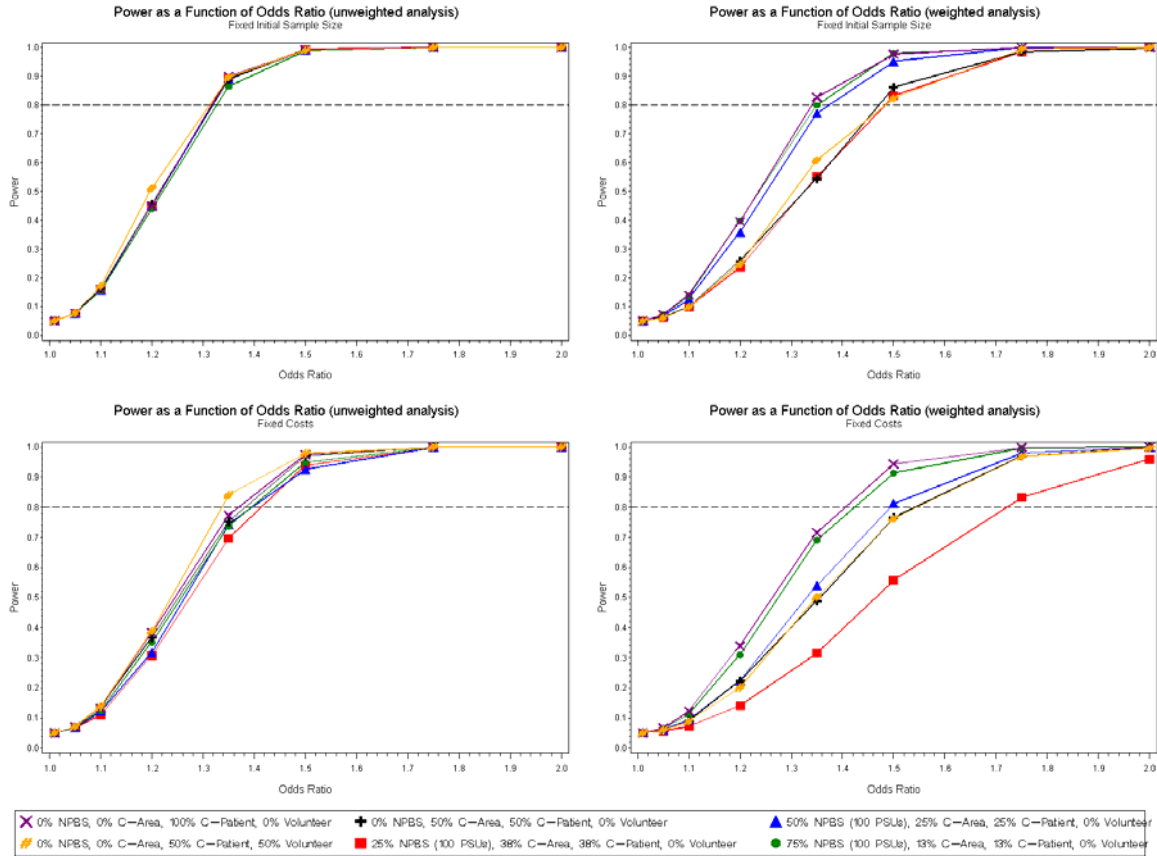
**Figure I-4.** Power to detect a significant odds ratio for unweighted (left side panels) and weighted (right side panels) analyses and for fixed sample size (top panels) and fixed cost samples (bottom panels) (assuming a disease prevalence of 0.6%, an exposure prevalence of 5%, 100 PSUs, and the alternative retention rates).

**Hypothesis 2.2: Altered Neurobehavioral Development - Cerebral Palsy (see Table 10-3)**



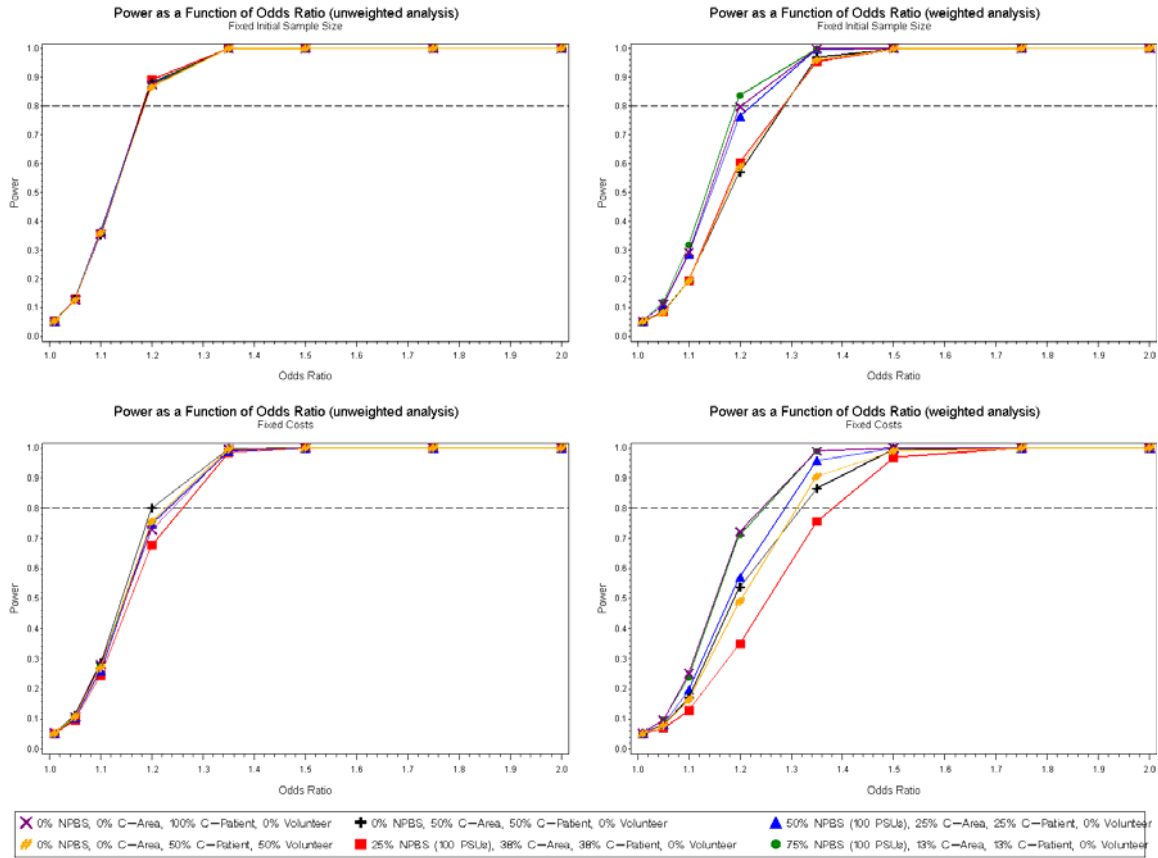
**Figure I-5. Power to detect a significant odds ratio for unweighted (left side panels) and weighted (right side panels) analyses and for fixed sample size (top panels) and fixed cost samples (bottom panels) (assuming a disease prevalence of 0.25%, an exposure prevalence of 20%, 100 PSUs, and the alternative retention rates).**

**Hypothesis 2.3: Altered Neurobehavioral Development – Schizophrenia (see Table 10-3)**

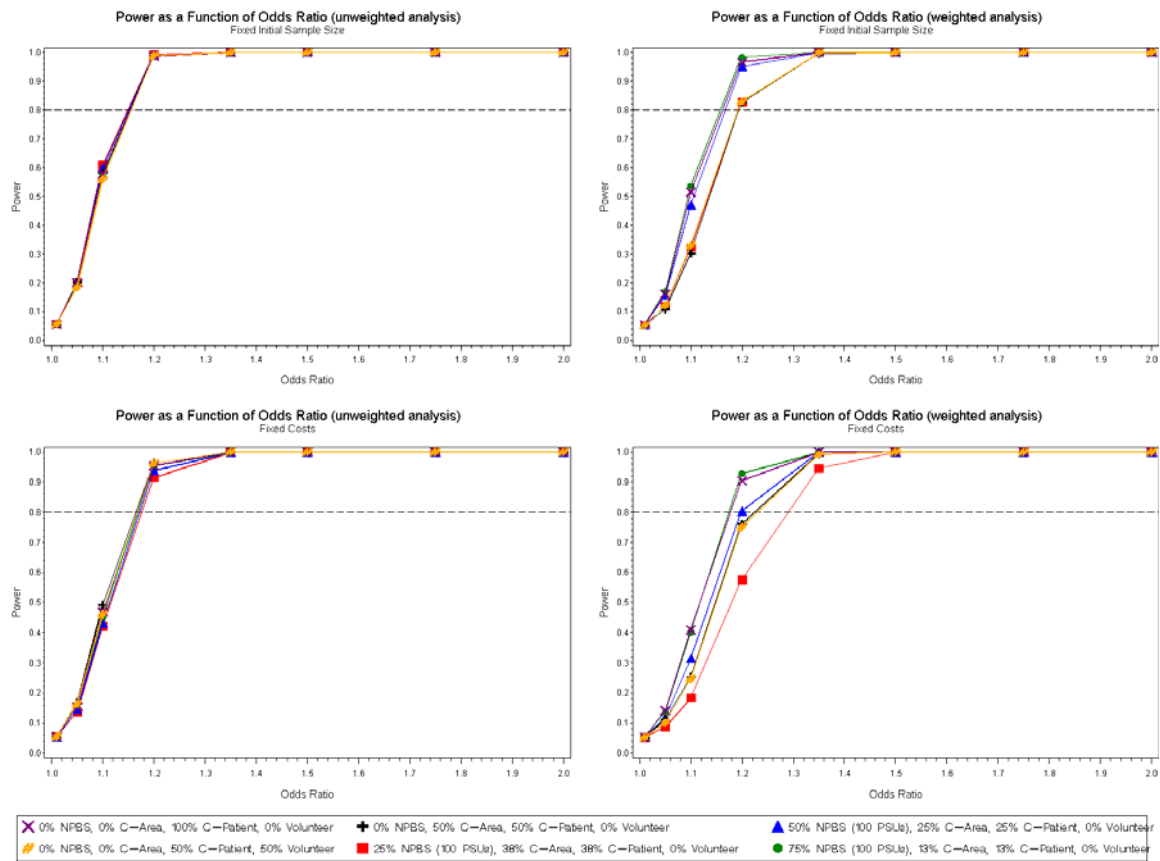


**Figure I-6.** Power to detect a significant odds ratio for unweighted (left side panels) and weighted (right side panels) analyses and for fixed sample size (top panels) and fixed cost samples (bottom panels) (assuming a disease prevalence of 1%, an exposure prevalence of 20%, 100 PSUs, and the alternative retention rates).

**Hypotheses 3.1 and 3.2: Injury Outcomes (see Table 10-3)**

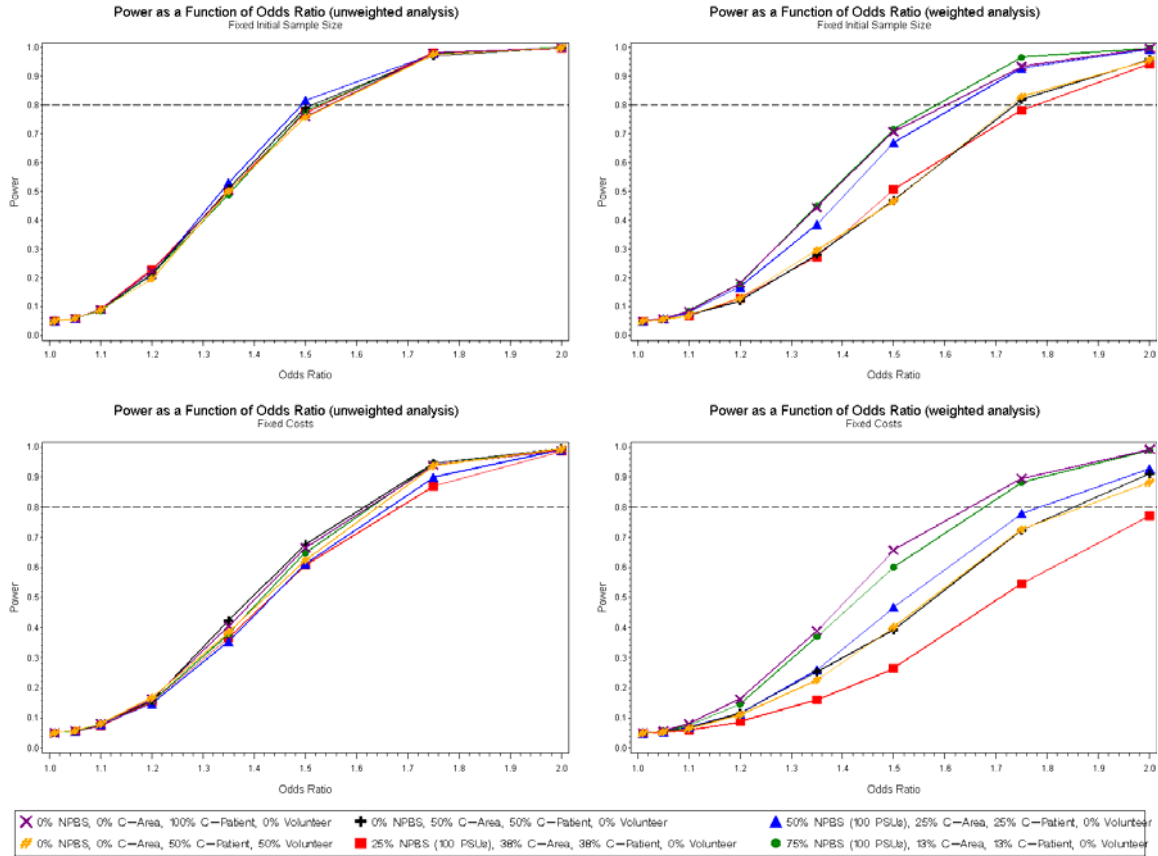


**Figure I-7. Power to detect a significant odds ratio for unweighted (left side panels) and weighted (right side panels) analyses and for fixed sample size (top panels) and fixed cost samples (bottom panels) (assuming a disease prevalence of 10%, an exposure prevalence of 5%, 100 PSUs, and the alternative retention rates).**

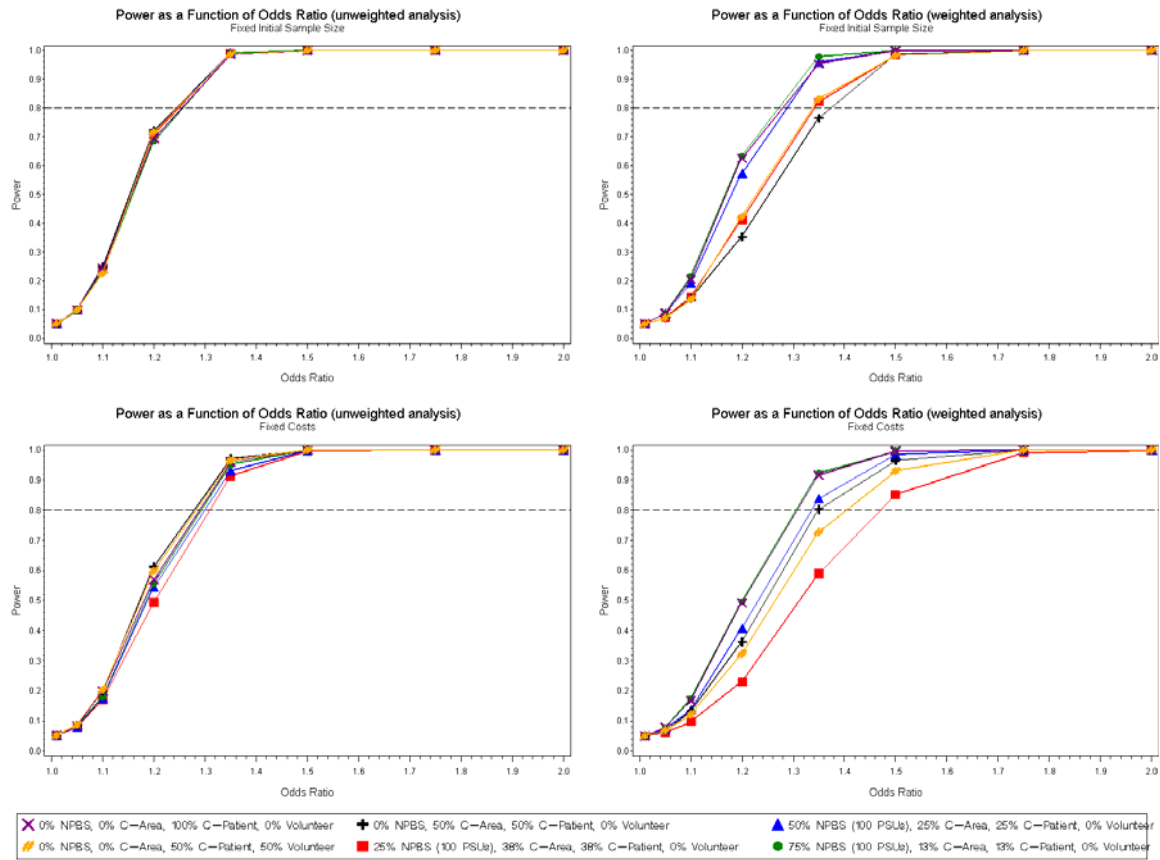


**Figure I-8.** Power to detect a significant odds ratio for unweighted (left side panels) and weighted (right side panels) analyses and for fixed sample size (top panels) and fixed cost samples (bottom panels) (assuming a disease prevalence of 10%, an exposure prevalence of 10%, 100 PSUs, and the alternative retention rates).

**Hypotheses 4.1 and 4.2: Asthma Outcomes (see Table 10-3)**



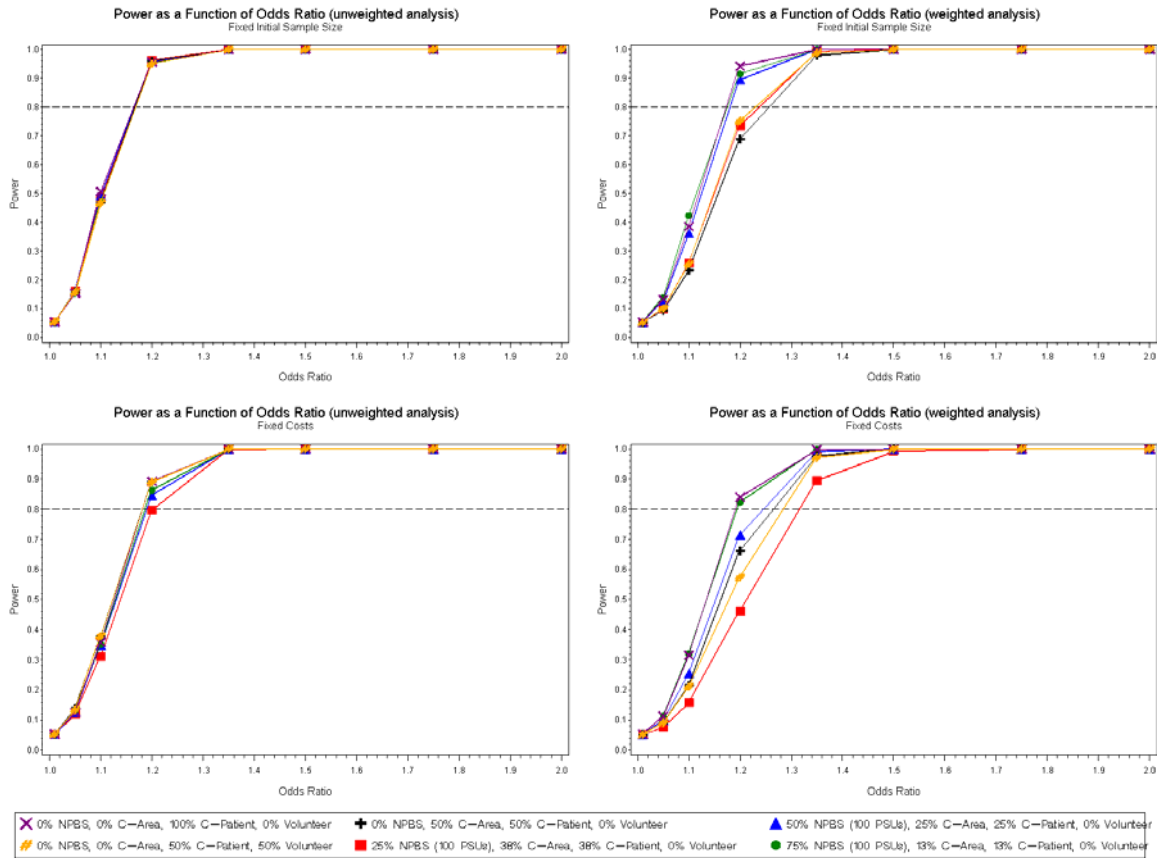
**Figure I-9. Power to detect a significant odds ratio for unweighted (left side panels) and weighted (right side panels) analyses and for fixed sample size (top panels) and fixed cost samples (bottom panels) (assuming a disease prevalence of 6%, an exposure prevalence of 1%, 100 PSUs, and the alternative retention rates).**



**Figure I-10.** Power to detect a significant odds ratio for unweighted (left side panels) and weighted (right side panels) analyses and for fixed sample size (top panels) and fixed cost samples (bottom panels) (assuming a disease prevalence of 6%, an exposure prevalence of 5%, 100 PSUs, and the alternative retention rates).



**Hypothesis 5.1: Obesity and Altered Physical Development (see Table 10-3)**



**Figure I-11. Power to detect a significant odds ratio for unweighted (left side panels) and weighted (right side panels) analyses and for fixed sample size (top panels) and fixed cost samples (bottom panels) (assuming a disease prevalence of 15%, an exposure prevalence of 5%, 100 PSUs, and the alternative retention rates).**