



Birth Prevalence

$$540,000 \text{ Births} \times \frac{1 \text{ Case}}{6,500 \text{ Births}} = 83 \text{ Cases}$$



Cost of MS/MS Screening

The additional annualized program estimated costs after startup would be:

Personnel & Admin.	\$ 540,000
Equipment	\$ 500,000 *
Supplies	\$ 2,012,500
Lab. Contracts	\$ 1,870,000
<u>Follow-up Centers</u>	<u>\$ 742,000</u>
Sub Total Additional	\$ 5,664,500
Treatment Costs	\$ 5,117,905
Total Costs	\$10,782,405

* (\$4,000,000 depreciated over eight years.)



Costs Without MS/MS Screening

Cases	Probable Outcome		Lifetime Treatment Cost/Case	Total Case
10	Deaths	X	\$ 30,000 =	\$ 300,000
10	Severe Neurological Impairment	X	\$635,135 =	\$ 6,351,350
10	Mild to Moderate Impairment	X	\$300,000 =	\$ 3,000,000
18	Acute Complications Only	X	\$ 50,000 =	\$ 900,000
35	Asymptomatic	X	\$ 500 =	\$ 17,000
83	Total Lifetime Costs			\$10,568,350



Costs With MS/MS Screening

Cases	Probable Outcome		Lifetime Treatment Cost/Case	Total Case
3	Deaths	X	\$ 30,000 =	\$ 90,000
3	Severe Neurological Impairment	X	\$635,135 =	\$1,905,405
6	Mild to Moderate Impairment	X	\$300,000 =	\$1,800,000
26	Acute Complications Only	X	\$ 50,000 =	\$1,300,000
45	Asymptomatic	X	\$ 500 =	\$ 22,500
83	Total Lifetime Costs			\$5,117,905



Benefits of MS/MS Screening

Without MS/MS **\$10,568,350**

With MS/MS **\$ 5,117,905**

Total Cost Avoidance **\$ 5,450,445**

Economic Value of Lives Saved **\$42,700,000**

Total Benefits **\$48,150,445**



Cost Benefit Ratios

$$\frac{\$48,150,445}{\$10,782,405} = \$4.46$$



Cost Per QALY

QALY With MS/MS	\$5,071.5
QALY Without MS/MS	<u>\$4,212.0</u>
Gain	\$ 859.5

Total Program Costs	<u>\$10,782,405</u>	= \$12,544/QALY
Total QALY Gain	\$ 859.5	



Cost Per Case Detected

$$\frac{\$ 10,822,405 \text{ Total Program Costs}}{83 \text{ Cases}} = \$130,390$$

$$\frac{\$5,705,500 \text{ Screening Cost}}{83 \text{ Cases}} = \$ 68,740$$