

Daily Exercise Solution

Future states:

State	Payoff
S	\$10M
W	\$0

Buyer types and EVs:

Type	Pop	ρ_S	EV	Value
H	500	0.02	$0.02 * \$10M$	\$200k
L	9500	0.001	$0.001 * \$10M$	\$10k

Expected cost:

$$EV = (500/10,000) * \$200k + (9500/10,000) * \$10k$$

$$EV = 0.05 * \$200k + 0.95 * \$10k$$

$$EV = \$19.5k$$

Fraction uncovered:

Type	Pop	Sick	Spending
H	500	$.02 * 500 = 10$	$10 * \$10M = \$100M$
L	9500	$0.001 * 9500 = 9.5$	$9.5 * \$10M = \$95M$
Total	10000	19.5	\$195M

Uncovered portion, L share of sick individuals:

$$9.5/19.5 = 0.4872 \text{ or } 49\%$$