

Deciding Public Policy

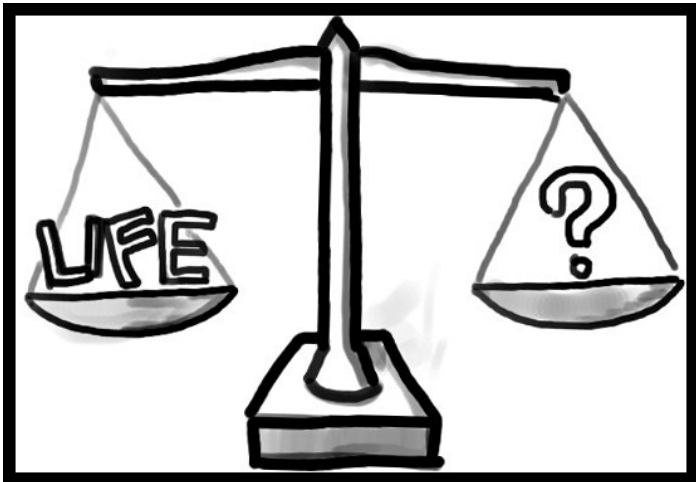


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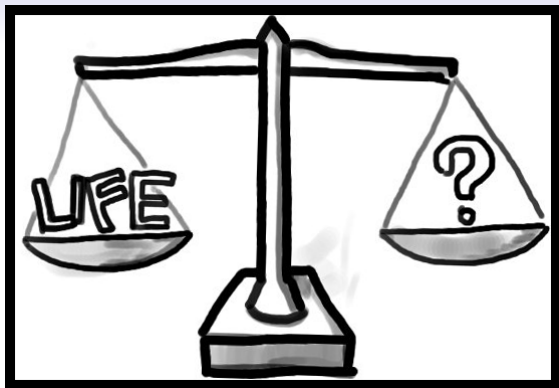


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- Should we vaccinate each citizen? What are the strongest arguments for each side? What makes the most sense from a probability argument?

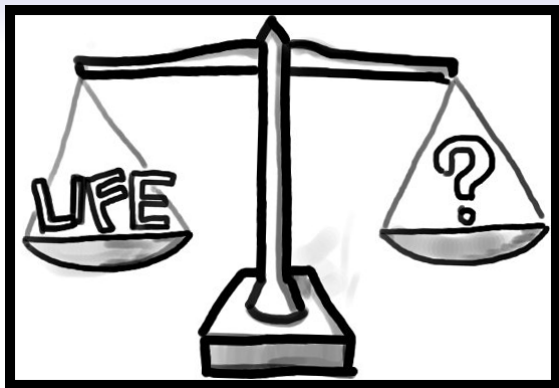


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Price of a Life: Cost per injection \times number of shots to save just one life from the entire population.



Image Credit: Linda Cai

- What are the pros and cons of HIV testing all of the US? all of Swaziland?



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- What are the pros and cons of HIV testing all of the US? all of Swaziland?
—If a test is 95% accurate for people who have a disease then it correctly tests positive 95% of the time, but incorrectly tests negative for them $100\% - 95\% = 5\%$ of the time (**false negative**). *Sensitivity* is .95.



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 - If a test is 99% accurate for people who don't have a disease then it correctly tests negative 99% of the time, but incorrectly tests positive for them 1% of the time (**false positive**). *Specificity* is .99.

	Test+	Test-
Person is HIV +	HIV+ people \times probability they test +	
Person is HIV -		



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	Test+	Test-
Person is HIV +	HIV+ people × probability they test +	
Person is HIV -	# of false positives	
Total		



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—If a test is 99% accurate for people who don't have a disease then it correctly tests negative 99% of the time, but incorrectly tests positive for them 1% of the time (**false positive**). *Specificity* is .99.

	Test+	Test-
Person is HIV +	HIV+ people \times .95	HIV+ people \times .05
Person is HIV -	HIV- people \times .01	HIV- people \times .99
Total		

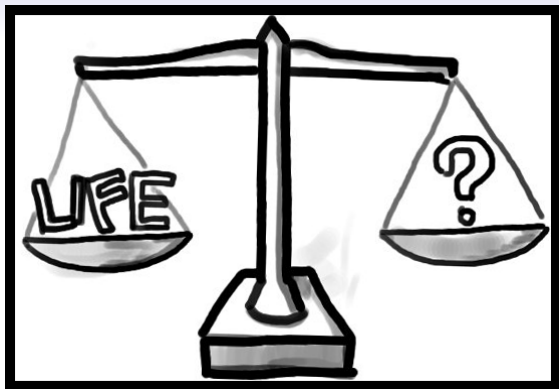


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- If we had to choose between them, should we spend money to make airlines safer or cars safer? What are the strongest arguments for each side? What makes the most sense from a probability argument?