Understanding Cost-Effectiveness Analysis in Health Care
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Exercise 1

(1) Calculate the Net Benefit associated with each of the following hypothetical public health programs and indicate whether or not each could be recommended based on economic criteria alone when there is no budget constraint.

Alternative	Cost	Benefit	Net Benefit	Adopt with No Budget Constraint?
A	$1,500,000	$1,750,000		
B	$2,000,000	$1,500,000		
C	$500,000	$1,000,000		
D	$2,500,000	$3,500,000		
E	$1,750,000	$1,000,000		

(2) Now, suppose that you have a limited budget. First, describe how you would rank the programs in order to determine which to implement first when there is a limited budget.

(3) Perform the calculations you describe in (2) for all of the alternatives that might be implemented with no budget constraint and indicate which alternative should be implemented first when there is a budget constraint. Is the first alternative to be implemented based on the criteria you have specified the alternative with the highest benefit or net benefit? Describe (with respect to your answer) why this does or does not always have to be the case?

(4) In the following diagram indicate the alternatives that are dominated and whether they are dominated strongly or weakly. For those that are dominated, indicate which other alternatives dominate them.

Quality
Adjusted
Life Years

• F

• D

• C

• B

• E

• A
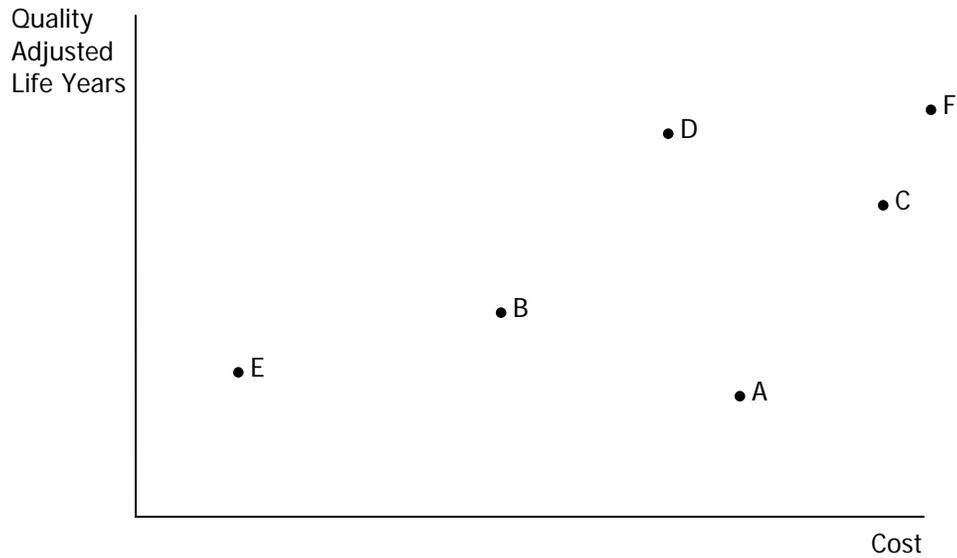
Cost

(5) Consider three alternatives:
- X is the least expensive and least effective; it costs $100,000 and increases quality adjusted life years by 8.
- Y costs $150,000 and increases quality adjusted life years by 11.
- Z costs $250,000 and increases quality adjusted life years by 13.

Calculate the incremental cost-effectiveness ratios that are appropriate for the alternatives described.