Econ 132 Spring 2022 SECOND MIDTERM EXAM (A): SOLUTIONS Cameron

Version A

1.(a) No screen: per person costs are $900 and get 10.87 QALYs.
Screening: per person costs are $800+$1100=$1,900 and get 10.97 QALYs.
Incremental cost efficiency ratio ΔCost/ΔQALY = (1900-900)/(10.97-10.87)=1000/.10 = 10,000.
Yes. Worthwhile as less than $25,000.

(b)

Team size	Total cost	Total lives saved	Marginal cost	Marginal lives saved	Marginal cost per life saved
0	0	0	0	-	-
5	250,000	600	250,000	600	412
10	500,000	1,000	250,000	400	625
15	750,000	1,200	250,000	200	1250
20	1,000,000	1,300	250,000	100	2500
25	1,250,000	1,350	250,000	50	5000
30	1,500,000	1,370	250,000	20	12500

Optimal is 25 as at 25 MC = 5000 = MB = 5000.

(c) Cost of first test = $50 × 100,000 + $100 × 0.8 × 1000 + $100 × 0.1 × 100,000 = $6,080,000.
Benefit of first test = $5,000 × 0.8 × 1000 = $4,000,000.
Test is not worthwhile as MB < MC.
[Note: An alternative calculation uses lower number of false negatives and also gets full credit.
Cost of 1st test = $50×100,000 + $100×0.8×1000 + $100×0.1×(100,000-1000) = $6,070,000.]

2.(a)(i) D + H + G. (This is an increase in expenditures).
(ii) D + H (This is a loss in welfare).

(b)(i) D (highest possible indifference curve with budget constraint the line through A,B, C, D).
(ii) H (highest possible indifference curve with budget constraint the line through points I, H, J).

(c) Only those with loss in excess of $5,000 will buy insurance.
The expected loss of those insured will be $7,000 (= the mean of uniform on 5,000 to 9,000).
The insurance company will make a loss (of $2,000 + $1,000 administration costs).

3.(a) True Universal means everyone has it. This could be public, private (difficult) or a mix.

(b) False While six was not optimal it was better than zero.

(c) True This is a limitation of cost-benefit analysis.

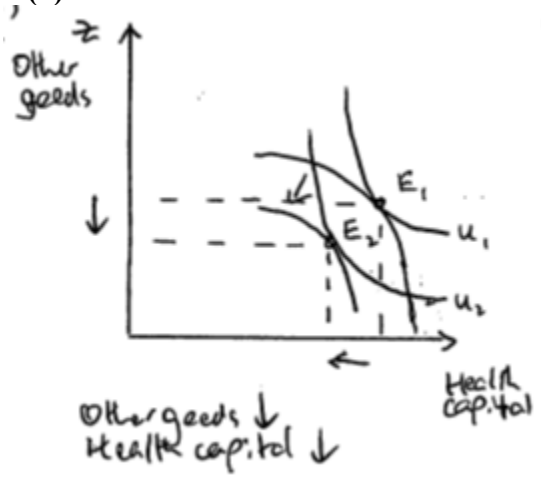
(d) True The present discounted value of the costs over time will be lower.

(e) True When insurance death spirals arise it is due to adverse selection.

(f) False Medicare was created as a private insurance market for the elderly would fail due to adverse selection.

Version A (Continued)

4.(a)



(b) To explain the effect of illness the standard model needs to rotate the indifference map. The Grossman model instead leaves the indifference map unchanged and instead illness changes the ability to produce health capital.

(c) For communities affected change from 2005 to 2015 by 10 – 5 = 5.
For communities not affected change from 2005 to 2015 by 12 – 10 = 2.
The difference in difference estimate of the policy is 5 – 2 = 3.

5.(i) No, if we test at standard statistical levels such as 5% as $p = 0.188 > 0.05$.

(ii) After the regress command given in the output give Stata command
test coins25 coins50 coins95 coinsindiv (test whether all included insurance dummies = 0).

(iii) This dataset came from a randomized experiment, so the results are causal.

(iv) Having bad health is associated with an 8.4 percent increase in outpatient spending.
(More precisely it equals $100 \times \exp(0.084) - 1 = 8.8$ percent higher).

(v) Use cluster-robust standard errors that cluster on family. E.g. vce(cluster famid).

(vi) No as part (iv) is restricted to those with out_infl > 0 due to the need to take logs.

The median for the Stata question out of 6 was 3.5 and the average was 3.5.

Multiple choice

Question	1	2	3	4	5	6
Answer	d	c	b	b	a	d

Scores out of 36 **Curve (Indication only: Course Grade is based on Total Score!)**

75th percentile 27.5 (76 %) (Ave GPA 2.75 on this curve)
Median 25 (69 %)
25th percentile 21 (58 %)

A	28.5 and above	C+	21.5 and above
A-	27 and above	C	20.5 and above
B+	25.5 and above	C-	19 and above
B	24.5 and above	D+	17.5 and above
B-	23 and above	D	16.5 and above
		D-	15 and above

Econ 132 – MT2 (A) S22 Solutions