Econ 132 Fall 2017 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 20 (or 25) as at 25 MC = 5000 = MB = 5000 whereas at 30 MC = 12500 > 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) True Universal means everyone has it. This could be public and/or private.

(b) False Optimal was 2-3 tests.

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

(d) False It is a bit more than $200,000.

(e) False Most U.S. hospitals are not-for-profit.

(f) True Hospitals are much more labor-intensive.

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

(b) 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).

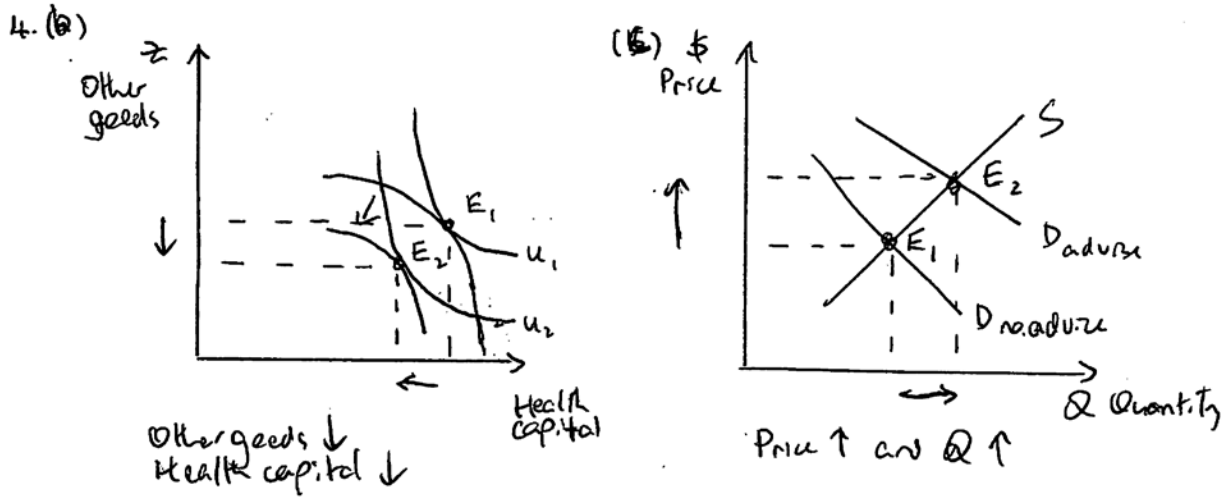
(c)(i) Hospital chargemaster is a menu of the prices hospital charges, before any discount.

(ii) Adverse selection arises if high risk individuals are disproportionately likely to buy health insurance. OR Adverse selection in an insurance market arises if different individuals have different expected losses and are able to reasonably estimate these expected losses, but insurance companies do not have this information.

4.(a) PDV doctor = $-25 + 55/1.1 + 110/(1.1)^2 = -30 + 50 + 91 = \underline{116}$
PDV college = $20 + 44/1.1 + 66/(1.1)^2 = 20 + 40 + 55 = \underline{115}$.
Doctor as PDV of income is higher.
Note: For full credit you need to discount to zero and to year 1 $ as question said use year 1 $.

Version A (Continued)

4.(b),(c)



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 is $100 \times \exp(0.084) - 1 = 8.8$ percent higher).

(v)-(vi) For communities effected change from 2005 to 2015 by $10 - 5 = 5$.
For communities not effected change from 2005 to 2015 by $12 - 10 = 2$.
The difference in difference estimate of the policy is $5 - 2 = 3$.

Multiple choice

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

The median for the Stata question was 3.5 and the average was 3.3.

Scores out of 36

75th percentile	27	(75 %)
Median	24	(67 %)
25th percentile	20	(55 %)

Curve (Indication only: Course Grade is based on Total Score!)

(Ave GPA 2.63 on this curve)

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