

Version A

1.(a) Marginal cost for 1,000 adults = $1,000 \times \$25 = \$25,000$.

Marginal benefit for 1,000 adults = $1,000 \times (0.24 - 0.14) \times \$200 = \$20,000$.

No. Do not vaccinate as MC exceeds MB.

(b) (i) Cost per case avoided = $\$25 / (0.24 - 0.14) = \$25 / 0.10 = \underline{\$250}$.

[or # cases avoided per 1,000 = $(0.24 - 0.14) \times 1,000 = 100$; and $\$25,000 / 100 = \250 .]

(ii) QALY is a quality-adjusted life year, where quality of life is rated on a scale between 0.0 (death) and 1.0 (good health).

(c) Cost: $100,000 \times \$5 + 0.9 \times 1000 \times \$100 + 0.1 \times 100,000 \times \$100 = 500,000 + 90,000 + 1,000,000 = \$1,590,000$ (or could instead have $0.1 \times 99,000 \times \100 unneeded tests giving $\$1,590,000$ total).

Benefit = $0.9 \times 1,000 \times \$10,000 = \$9,000,000$.

Do the test as benefit exceeds cost.

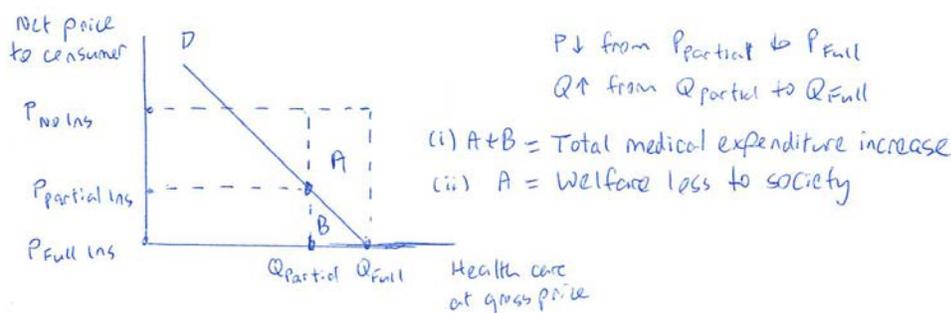
2.(a)(i) We expect health care to decrease as move down from Free to 25% to 50% to 95%.

This is generally the case, but unexpectedly it increases for the 50% plan for inpatient \$ and for total expenses.

Note: This was not answered well but was discussed twice in lectures.

(ii) The numbers in parentheses are the standard errors (the precision) of the estimates.

(b)



(c) $E[X] = 60$ as uniform on (40, 80) (where 80 is the posted price) has mean 60.

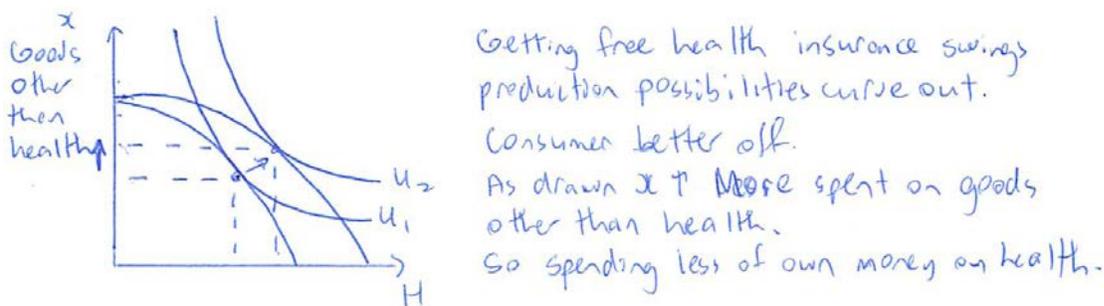
$E[U(X)] = 1.2 \times E[X] = 1.2 \times 60 = 72$. Since this is less than the price of 80, do not buy.

3.(a)(i) Main reason to see a doctor is sickness. Since budget constraint has not moved, need to say that indifference curves moves. This is unconventional. Rarely do economists use changes in the indifference map to explain behavior.

(ii) Yes. E.g. We use market supply and demand curves for health throughout this course.

(b) Curves are as below though it is possible to draw so that $x \downarrow$ rather than \uparrow as drawn.

Note: For full credit curves intersect at x axis as free insurance has no effect when $m = 0$.



Version A (continued)

3.(c) PDV doctor = $-30 + 55/1.1 + 110/(1.1)^2 = -30 + 50 + 91 = \underline{111}$

PDV college = $20 + 44/1.1 + 66/(1.1)^2 = 20 + 40 + 55 = \underline{115}$.

College 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\$.

- 4.(a) True. Cost-benefit analysis measures MB and MC which ordinarily are D and S curves.
- (b) False. Some screening was worthwhile (though six was much more than optimal).
- (c) True
- (d) False The elasticity is estimated by regressing logs on logs.
- (e) True Before this there was little to no mandatory training of doctors.
- (f) False

5. Note: This question was answered well which is very pleasing.

(i) The definition of **waz** given in the question is that it is a z-score.

A z-score is a score standardized to have a mean of approximately 0 and standard deviation of approximately one. (In fact in this sample there was some deviation from that).

Any mean around 0 and standard deviation between one and 1.5 gets full credit.

(ii) **sum waz if high==1 & year==93 or sum waz if high==1 & year==93**

or regress waz if high==1 & year==93

(iii) This yields the difference-in-difference estimate.

(iv) Yes.

(v)-(vi) Change for affected is $10 - 4 = 6$ and for not affected is $7 - 2 = 5$.

Difference in difference estimate is $6 - 5 = 1$.

Or .. Difference (affected vs. not affected) in 2000 is $10 - 7 = 3$ and in 1990 is $4 - 2 = 2$.

Difference in difference estimate is $3 - 2 = 1$.

Multiple choice

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

- 2. Rand was an experiment that randomly assigned insurance policies free to the participant
- 3. Great Britain has free universal health insurance at one level of insurance.

Scores out of 36

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

75 th percentile	27.5 (76 %)	(Ave GPA 2.67 on this curve)	C+	22 and above	
Median	24.5 (68 %)	A	29 and above	C	21 and above
25 th percentile	21 (58 %)	A-	27.5 and above	C-	19.5 and above
		B+	26.5 and above	D+	18 and above
		B	25 and above	D	17 and above
		B-	23.5 and above	D-	15.5 and above