Pharmacoeconomics Workshop

2022-2023

A Workshop is a class exercise based on group work. Students will be given a number of tasks alongside some reading materials. You will be asked to work through them with your group and this would be followed by feedback and class discussion.

There will be no marks assigned to your work, however this would be highly advised to help you master the skills required for the midterm and final exams.

You will be allowed to use the lecture notes, text books or your own notes

Learning outcomes

By the end of the workshop you will be able to:

- Understand how economic evaluations can inform decision making in health care and policy

Process

- Workshop introduction (5 minutes)
- In groups of 3-4 students; start to work through the worksheet of this workshop papers (40 minutes)
- During the workshop Dr R. Mousa will be available to advice and facilitate group discussions, please raise your hand and she will call up to your group.
- Final group discussion (all the class) (10 minutes)

Exercise 1: Discounting

Part 1: The following table presents the costs of two TNF inhibitors proposed to your formulary

Year	**TNF A**	**TNF B**
Year 1	**300 JDs**	**550 JDs**
Year 2	**100 JDs**	**50 JDs**
Year 3	**260 JDs**	**50 JDs**
Total	**660 JDs**	**650 JDs**

At year 1, which of these would look more attractive to you (less costly) *for the same indication*	
At the end of the program (<u>total</u>), which of these would look more attractive to you (less costly), Why?	

Part 2: we should talk a little bit about the number above, the initial costs during year 1 for both TNFs related to drug acquisition costs and the costs of IV line required for administration. TNF A is given over a 1 hour infusion rate but TNF B given over 15 min only. The dose should be repeated yearly for three years.

In the table below discount the costs to the present values; use PV (present value) = future costs/ $(1+r)^n$.

Year	**TNF A**	**PV at 5%**	**TNF B**	**PV at 5%**
Year 1	**300 JDs**	*e.g. 300/ $(1+.05)^1$*	**550 JDs**	
Year 2	**100 JDs**		**50 JDs**	
Year 3	**260 JDs**		**50 JDs**	
Total	**660 JDs**		**650 JDs**	

At the end of the programme, which of these would look more attractive to you (less costly), *use discounted value***?**	
Comment on how discounting might/might not change conclusion on costs over time?	

Exercise 2: Sensitivity analysis

Now we will be performing a sensitivity analysis, challenging whether the conclusion will be changing with the change of the probability of having an adverse event when taking TNF A was 10% and for TNF B was 15%.

The range of probability to experience adverse effect is 7%-15% for TNF A *and* TNF B *10-25%*

Have a careful look on the table below:

Variable	Range L=Low Estimate H=High Estimate	**TNF A** Overall Costs ($)	**TNF B** Overall Costs ($)	Δ Overall Costs: A – B ($)
Base case		700	650	+50
Cost of treating adverse events	L = $500	650	575	+75
	H = $2,500	850	875	−25
Cost per course of therapy for antibiotic A	L = $400	500	650	−150
	H = $800	900	650	+250
Cost per course of therapy for antibiotic B	L = $350	700	500	+200
	H = $750	700	900	−200
Probability of adverse events for antibiotic A	L = 7%	670	650	+20
	H = 15%	750	650	+100
Probability of adverse events for antibiotic B	L = 10%	700	600	+100
	H = 25%	700	750	−50

Comments on the following statements:

- For the entire range (7-15%) the cost of TNF A was higher, so the results are insensitive to the range of % of adverse effects.

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- The total cost of TNF A- TNG B at a probability of 10-25% for B was 100 $ if the % of adverse event was close to 10%. There was cost saving of 50$ when the % of adverse event was close to 25%.

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