Surgical sutures

A decision tree example

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Introduction

Leaper *et al* [1] presented a model that compared antimicrobial surgical sutures (absorbable sutures impregnated with triclosan, TCS) with standard care, absorbable sutures with no antimicrobial impregnation (NCS). The model was evaluated in three scenarios:

- clean wounds;
- clean-contaminated wounds;
- contaminated and dirty wounds

Scenario 1: clean wounds

Model structure

The decision tree defined by Leaper *et al* [1] is shown in the figure below.

Model variables

The model had six input variables:

- the probability of an SSI with NCS
- the risk ratio of an SSI with TCS compared with NCS
- cost of TCS
- cost of NCS
- number of sutures per surgical procedure
- cost of an admission with diagnosis of infection.

The model input variables are shown in the following table:

Table 1: Table continues below

Description	Units	Distribution	Mean	E
Cost of TCS per proedure	GBP	c.pack.TCS * n.sutures	7.26	7.297
VICRYL plus	GBP	Ga(100,0.036)	3.63	3.63
Cost of NCS per procedure	GBP	c.pack.NCS * n.sutures	5.76	5.76

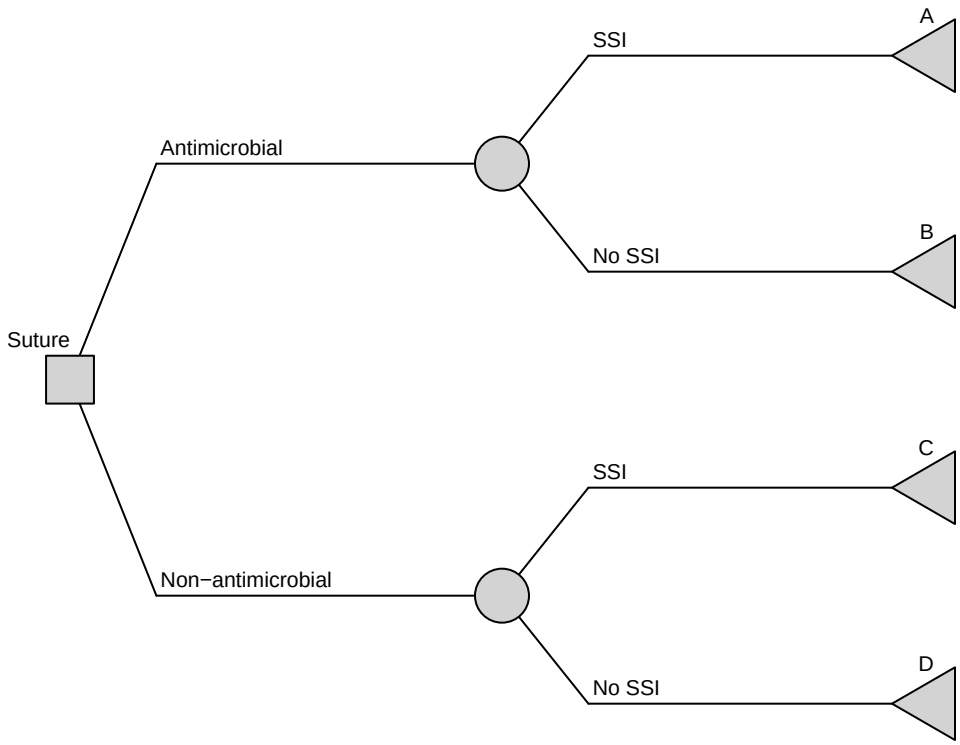

Figure 1: boo

SD	Q2.5	Q97.5	Est
0.7425	5.909	8.763	TRUE
0.363	2.954	4.375	FALSE
NA	5.76	5.76	TRUE

Results

Run	Suture	Probability	Cost	Benefit	Utility
1	Antimicrobial	1	208.3	0	1
1	Non-antimicrobial	1	305.8	0	1

References

1 Leaper DJ, Edmiston Jr CE, Holy CE. Meta-analysis of the potential economic impact following introduction of absorbable antimicrobial sutures. *BJS (British Journal of Surgery)* 2017;**104**:e134–44. doi:10.1002/bjs.10443