UroShield – addendum on increased staff time for catheter change

The Lead Team raised the issue of the amount of nurse time that had been allocated for catheter changes in the community populations. In the company's model this was 15 mins in the base case, with a range of 10-20 mins for the sensitivity analysis. Clinical experts indicated that unscheduled visits were often required to manage infections and blockages and that the staff time for this was more likely to be in the range 45-60mins.

The EAC has remodelled the community costs, with 45 minutes as the base time for a nurse visit.

After Table 1: Summary of base case results

	EOC original base case			EAC new results		
	SoC	**UroShield**	**Cost saving per person**	**SoC**	**UroShield**	**Cost saving per person**
Community – all						
Cost of CAUTI	£38.55	£9.71	£28.84	£42.86	£10.80	£32.06
Other costs	£0	£68.18	-£68.18	£0	£68.18	-£68.18
Total cost	£38.55	£77.89	**-£39.34**	£42.86	£78.98	**-£36.12**
Community – recurrent						
Cost of CAUTI	£113.38	£28.57	£84.81	£126.07	£31.77	£94.30
Other costs	£0	£68.18	-£68.18	£0	£68.18	-£68.18
Total cost	£113.38	£96.75	**£16.63**	£126.07	£99.95	**£26.12**

In the original EAC model, the recurrent CAUTI population has a baseline cost saving of £16.63 and the all community population is cost-incurring by £39.34 for UroShield. Increasing the nurse time from 15 mins to 45 mins alters the base case very little (as suggested by the Tornado plots, Fig 9 and 10 in the Assessment Report). In both cases, the case for UroShield becomes slightly more positive.

An hour of a nurse's patient contact time is £89, so the cost of a catheter change has increased by £44.50 (£28.12 to £72.62). The base cost of treating each CAUTI (including proportions of first line, second line, MDR, and CABSI treatments) has increased from £453.54 to £504.27.

To investigate the effect of incorporating blockages in the model we have made two assumptions:

- The treatment cost for catheter blockages is the cost of a catheter change
- The effectiveness of UroShield is equivalent for preventing blockages as for preventing infections

Threshold analysis results:

- For patients without blockages, UroShield is cost saving when the rate of CAUTIs is 0.18 per patient per 30 days. This is equivalent to just over 2 CAUTIs per year, or 1 CAUTI every 5.5 months.
- For patients without CAUTIs, UroShield is cost-saving when the rate of blockages is 1.25 per patient per 30 days. This is equivalent to 15 blockages per year, or a blockage every 24 days.

The two-way sensitivity analysis below shows how the result alters with a range of CAUTI and blockage risks when other variables are kept at the base case.

	Blockage risk											
CAUTI risk	0.00	0.25	0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.75	3
0.00	£68.18	£54.60	£41.02	£27.44	£13.86	£0.28	-£13.30	-£26.88	-£40.46	-£54.04	-£81.20	-£94.78
0.05	£49.32	£35.74	£22.16	£8.58	-£5.00	-£18.58	-£32.16	-£45.74	-£59.32	-£72.90	-£100.06	-£113.64
0.10	£30.46	£16.88	£3.30	-£10.28	-£23.86	-£37.44	-£51.02	-£64.60	-£78.18	-£91.76	-£118.92	-£132.50
0.15	£11.60	-£1.98	-£15.56	-£29.14	-£42.72	-£56.30	-£69.88	-£83.46	-£97.04	-£110.62	-£137.78	-£151.36
0.20	-£7.26	-£20.84	-£34.42	-£48.00	-£61.58	-£75.16	-£88.74	-£102.32	-£115.90	-£129.48	-£156.64	-£170.22
0.25	-£26.12	-£39.70	-£53.28	-£66.86	-£80.44	-£94.02	-£107.60	-£121.18	-£134.76	-£148.34	-£175.50	-£189.08
0.30	-£44.98	-£58.56	-£72.14	-£85.72	-£99.30	-£112.88	-£126.46	-£140.04	-£153.62	-£167.20	-£194.36	-£207.94