

MT288: XprESS Multi-Sinus Dilation System additional sensitivity analyses

Following submission of the External Assessment Centre (EAC) assessment report to the National Institute for Health and Care Excellence (NICE) and the Medical Technologies Advisory Committee (MTAC) meeting, NICE has requested that the EAC conduct further sensitivity analyses (SA). These include a two-way SA around the proportion of surgeries with XprESS Multi-Sinus Dilation System (MSDS) conducted in the office setting using local anesthetic (LA) and the length of Functional Endoscopic Sinus Surgery (FESS) procedure time using general anesthetic (GA). It was requested that this analysis be run separately for when the cost of XprESS MSDS is £900 and £820. A three-way SA has also been requested around the proportion of surgeries with XprESS MSDS conducted in the office setting using LA, the length of FESS procedure time using GA and the cost of XprESS MSDS. The analyses conducted are described in the subsequent sections of this document.

1. **Two-way sensitivity analysis around the proportion of XprESS MSDS surgery conducted in an office setting using local anaesthetic and the length of FESS procedure using general anaesthetic with the cost of XprESS MSDS as £900**

Within the EAC's assessment report the duration of FESS surgery under GA was identified as a key driver of the analysis. The EAC's best estimate of this input of 42.5 minutes was based on expert advice whereby the experts were explicitly asked to provide an estimation of the duration of FESS in patients who would be eligible for treatment with XprESS MSDS. The EAC's best estimate did not reconcile with the company's input of 90 minutes; also based upon expert advice. Within the assessment report the EAC identified 66 minutes as the value over which XprESS MSDS generates cost savings. Two-way sensitivity analysis has been conducted whereby the duration of FESS surgery and the proportion of XprESS MSDS surgery conducted in an office setting using LA have been varied simultaneously. This analysis has been carried out following discussions by the MTAC and attending experts at the committee meeting surrounding the feasibility of XprESS MSDS being used under LA in an office setting.

Figure 1.1 shows that as the procedure time with FESS and the proportion of XprESS MSDS procedures conducted in an office setting using LA increase, XprESS MSDS becomes cost saving when the duration of FESS exceeds 60 minutes and greater than 50% of XprESS MSDS procedures are conducted in an office setting under LA when the cost of XprESS MSDS is £900.

When the procedure time with FESS exceeds 70 minutes, XprESS MSDS is cost saving irrespective of the proportion of XprESS MSDS procedures conducted in an office setting under LA. Where XprESS MSDS costs £900 and is used exclusively under LA in an office setting, the FESS procedure must be 53 minutes or longer for cost savings to be generated.

Figure 1.1: Two-way sensitivity analysis

		Proportion of XprESS procedures conducted in an office using LA											
		-£308	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Duration of FESS using GA (minutes)	20	-£643	-£624	-£606	-£587	-£569	-£550	-£531	-£513	-£494	-£476	-£457	-£457
	30	-£502	-£484	-£465	-£447	-£428	-£409	-£391	-£372	-£354	-£335	-£316	-£316
	40	-£361	-£343	-£324	-£306	-£287	-£269	-£250	-£231	-£213	-£194	-£176	-£176
	50	-£221	-£202	-£184	-£165	-£147	-£128	-£109	-£91	-£72	-£54	-£35	-£35
	60	-£80	-£62	-£43	-£25	-£6	£13	£31	£50	£68	£87	£106	£106
	70	£60	£79	£98	£116	£135	£153	£172	£191	£209	£228	£246	£246
	80	£201	£220	£238	£257	£275	£294	£313	£331	£350	£368	£387	£387
	90	£342	£360	£379	£397	£416	£435	£453	£472	£490	£509	£528	£528
	100	£482	£501	£519	£538	£557	£575	£594	£613	£631	£650	£668	£668
	110	£623	£642	£660	£679	£697	£716	£735	£753	£772	£790	£809	£809
	120	£764	£782	£801	£819	£838	£857	£875	£894	£912	£931	£950	£950

2. Two-way sensitivity analysis around the proportion of XprESS MSDS surgery conducted in an office setting using local anaesthetic and the length of FESS procedure using general anaesthetic with the cost of XprESS as £820

The above analysis was re-run when the cost of XprESS MSDS was £820. This analysis has been carried out following the manufacturer's comment at the MTAC meeting that a discount for the XprESS MSDS is available on the basis that a centre fulfils a minimum order volume. Based on >50 devices being purchased by one centre, the cost of the device is £820 per unit.

Figure 2.1 shows that when XprESS MSDS costs £820, XprESS MSDS becomes cost saving when the duration of FESS exceeds 50 minutes and when greater than 80% of XprESS MSDS procedures are conducted in an office setting under LA.

When the procedure time with FESS exceeds 60 minutes, XprESS MSDS is cost saving irrespective of the proportion of XprESS MSDS procedures conducted in an office setting under LA. Where XprESS MSDS costs £820 and is used exclusively under LA in an office setting, the FESS procedure must be 47 minutes or longer for cost savings to be generated.

Figure 2.1: Two-way sensitivity analysis

		Proportion of XprESS procedures conducted in an office using LA											
		-£224	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Duration of FESS using GA (minutes)	20	-£559	-£540	-£522	-£503	-£485	-£466	-£447	-£429	-£410	-£392	-£373	
	30	-£418	-£400	-£381	-£363	-£344	-£325	-£307	-£288	-£270	-£251	-£232	
	40	-£278	-£259	-£240	-£222	-£203	-£185	-£166	-£147	-£129	-£110	-£92	
	50	-£137	-£118	-£100	-£81	-£63	-£44	-£25	-£7	£12	£30	£49	
	60	£4	£22	£41	£59	£78	£97	£115	£134	£152	£171	£190	
	70	£144	£163	£181	£200	£219	£237	£256	£274	£293	£312	£330	
	80	£285	£304	£322	£341	£359	£378	£397	£415	£434	£452	£471	
	90	£426	£444	£463	£481	£500	£519	£537	£556	£574	£593	£612	
	100	£566	£585	£603	£622	£641	£659	£678	£696	£715	£734	£752	
	110	£707	£726	£744	£763	£781	£800	£819	£837	£856	£874	£893	
	120	£848	£866	£885	£903	£922	£941	£959	£978	£996	£1,015	£1,034	

3. Three-way sensitivity analysis around the proportion of XprESS MSDS surgery conducted in an office setting using local anaesthetic, the length of FESS procedure using general anaesthetic and the cost of XprESS MSDS

Given the uncertainty around the cost of XprESS MSDS, three-way sensitivity analysis has been conducted to determine scenarios where XprESS MSDS could be cost saving.

Figure 3.1 provides a series of graphs where each graph represents a different cost of XprESS MSDS from £500 to £900. On each graph, the duration of FESS under GA is varied on the x-axis and the proportion of XprESS MSDS procedures conducted in an office setting varied using coloured lines. The costs savings are shown on the y-axis where a positive value indicates that XprESS MSDS generates cost savings.

XprESS MSDS is cost saving in scenarios where the line is above £0. For example, when the cost of XprESS MSDS is £500, XprESS MSDS is cost saving when the duration of FESS using GA is 30 minutes or above and at least 50% of XprESS procedures are conducted in the office setting using LA. When the procedure time of FESS exceeds 40 minutes, XprESS MSDS is cost saving irrespective of the proportion of XprESS procedures conducting in an office setting using LA.

As expected, as the cost of XprESS MSDS increases, the number of uses conducted under LA in an office setting and the duration of FESS surgery must also increase for cost savings to be generated.

Figure 3.1: Three-way sensitivity analysis

