

## Supplementary appendix 2

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Sud A, Torr B, Jones ME, et al. Effect of delays in the 2-week-wait cancer referral pathway during the COVID-19 pandemic on cancer survival in the UK: a modelling study. *Lancet Oncol* 2020; published online July 20. [http://dx.doi.org/10.1016/S1470-2045\(20\)30392-2](http://dx.doi.org/10.1016/S1470-2045(20)30392-2).

**Supplementary Table 5a: Impact of presentational delay during 'lockdown' and scenario**  
**-Assumptions:** ~3 month lockdown period with uniform reduction in 2WW referrals of 25%/ ascribed with 2 months of 'presentational delay' (an averaged estimate).  
**-Three mitigation scenarios are modelled** (i) provide all additional capacity required in mor

Referral Delays			
Months Delay	3	Reduction in referrals	25%

		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
		July	August	September	October	November	December
Lives lost per period of delay							
LY lost per period of delay							
(i)	Capacity	175%	100%	100%	100%	100%	100%
Backlog from dela	75%	75%	0%	0%	0%	0%	0%
Month 1	100%	100%	0%	0%	0%	0%	0%
Month 2	100%		100%	0%	0%	0%	0%
Month 3	100%			100%	0%	0%	0%
Month 4	100%				100%	0%	0%
Month 5	100%					100%	0%
Month 6	100%						100%
Month 7	100%						
Month 8	100%						
Month 9	100%						
Month 10	100%						
Month 11	100%						
Month 12	100%						

(ii)	Capacity	125%	125%	125%	100%	100%	100%
Backlog from dela	75%	54%	21%	0%	0%	0%	0%
Month 1	100%	71%	29%	0%	0%	0%	0%
Month 2	100%		75%	25%	0%	0%	0%
Month 3	100%			100%	0%	0%	0%
Month 4	100%				100%	0%	0%
Month 5	100%					100%	0%
Month 6	100%						100%
Month 7	100%						
Month 8	100%						
Month 9	100%						
Month 10	100%						
Month 11	100%						
Month 12	100%						

(iii)	Capacity	100%	100%	113%	113%	113%	113%
Backlog from dela	75%	43%	32%	0%	0%	0%	0%
Month 1	100%	57%	43%	0%	0%	0%	0%
Month 2	100%		25%	75%	0%	0%	0%
Month 3	100%			38%	63%	0%	0%
Month 4	100%				50%	50%	0%
Month 5	100%					63%	38%

Month 6	100%						75%
Month 7	100%						
Month 8	100%						
Month 9	100%						
Month 10	100%						
Month 11	100%						
Month 12	100%						

Referral Delays			
Months Delay	3	Reduction in referrals	50%

		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
		July	August	September	October	November	December
Lives lost per period of delay							
LY lost per period of delay							
(iv)	Capacity	250%	100%	100%	100%	100%	100%
Backlog from delay	150%	150%	0%	0%	0%	0%	0%
Month 1	100%	100%	0%	0%	0%	0%	0%
Month 2	100%		100%	0%	0%	0%	0%
Month 3	100%			100%	0%	0%	0%
Month 4	100%				100%	0%	0%
Month 5	100%					100%	0%
Month 6	100%						100%
Month 7	100%						
Month 8	100%						
Month 9	100%						
Month 10	100%						
Month 11	100%						
Month 12	100%						

(v)	Capacity	150%	150%	150%	100%	100%	100%
Backlog from delay	150%	90%	60%	0%	0%	0%	0%
Month 1	100%	60%	40%	0%	0%	0%	0%
Month 2	100%		50%	50%	0%	0%	0%
Month 3	100%			100%	0%	0%	0%
Month 4	100%				100%	0%	0%
Month 5	100%					100%	0%
Month 6	100%						100%
Month 7	100%						
Month 8	100%						
Month 9	100%						
Month 10	100%						
Month 11	100%						
Month 12	100%						

(vi)	Capacity	100%	100%	125%	125%	125%	125%
Backlog from delay	150%	60%	60%	30%	0%	0%	0%
Month 1	100%	40%	40%	20%	0%	0%	0%
Month 2	100%		0%	75%	25%	0%	0%

Month 3	100%			0%	100%	0%	0%
Month 4	100%				0%	100%	0%
Month 5	100%					25%	75%
Month 6	100%						50%
Month 7	100%						
Month 8	100%						
Month 9	100%						
Month 10	100%						
Month 11	100%						
Month 12	100%						

Referral Delays			
Months Delay	3	Reduction in referrals	75%

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
	July	August	September	October	November	December
Lives lost per period of delay						
LY lost per period of delay						
(vii) Capacity	325%	100%	100%	100%	100%	100%
Backlog from delay	225%	225%	0%	0%	0%	0%
Month 1	100%	100%	0%	0%	0%	0%
Month 2	100%		100%	0%	0%	0%
Month 3	100%			100%	0%	0%
Month 4	100%				100%	0%
Month 5	100%					100%
Month 6	100%					
Month 7	100%					
Month 8	100%					
Month 9	100%					
Month 10	100%					
Month 11	100%					
Month 12	100%					

(viii) Capacity	175%	175%	175%	100%	100%	100%
Backlog from delay	225%	121%	104%	0%	0%	0%
Month 1	100%	54%	46%	0%	0%	0%
Month 2	100%		25%	75%	0%	0%
Month 3	100%			100%	0%	0%
Month 4	100%				100%	0%
Month 5	100%					100%
Month 6	100%					
Month 7	100%					
Month 8	100%					
Month 9	100%					
Month 10	100%					
Month 11	100%					
Month 12	100%					

(ix) Capacity	100%	100%	138%	138%	138%	138%
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Backlog from dela	225%	69%	69%	87%	0%	0%	0%
Month 1	100%	31%	31%	38%	0%	0%	0%
Month 2	100%		0%	13%	88%	0%	0%
Month 3	100%			0%	50%	50%	0%
Month 4	100%				0%	88%	13%
Month 5	100%					0%	100%
Month 6	100%						25%
Month 7	100%						
Month 8	100%						
Month 9	100%						
Month 10	100%						
Month 11	100%						
Month 12	100%						

**os of subsequent 'diagnostic delay' (FIXED)**

50%/75%. This deficit of patients then all present in month 1 post 'lockdown lift' (July) as a 'b

th 1, (ii) additional capacity spread across months 1-3, (iii) additional capacity spread across 1

Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Impa		
January	February	March	April	May	June	0 months	1 month	2 months
							118	241
							2,151	4,421
100%	100%	100%	100%	100%	100%			
0%	0%	0%	0%	0%	0%			75%
0%	0%	0%	0%	0%	0%	100%		
0%	0%	0%	0%	0%	0%	100%		
0%	0%	0%	0%	0%	0%	100%		
0%	0%	0%	0%	0%	0%	100%		
0%	0%	0%	0%	0%	0%	100%		
100%	0%	0%	0%	0%	0%	100%		
	100%	0%	0%	0%	0%	100%		
		100%	0%	0%	0%	100%		
			100%	0%	0%	100%		
				100%	0%	100%		/
					100%	100%	/	/
<b>Total</b>						1200%	0%	75%
<b>Lives lost</b>						0	0	181
<b>Life-Years lost</b>						0	0	3316
100%	100%	100%	100%	100%	100%			
0%	0%	0%	0%	0%	0%			54%
0%	0%	0%	0%	0%	0%	71%	29%	
0%	0%	0%	0%	0%	0%	75%	25%	
0%	0%	0%	0%	0%	0%	100%	0%	
0%	0%	0%	0%	0%	0%	100%	0%	
0%	0%	0%	0%	0%	0%	100%	0%	
0%	0%	0%	0%	0%	0%	100%	0%	
100%	0%	0%	0%	0%	0%	100%	0%	
	100%	0%	0%	0%	0%	100%	0%	
		100%	0%	0%	0%	100%	0%	
			100%	0%	0%	100%	0%	
				100%	0%	100%	0%	/
					100%	100%	/	/
<b>Total</b>						1146%	54%	54%
<b>Lives lost</b>						0	63	129
<b>Life-Years lost</b>						0	1152	2369
113%	113%	100%	100%	100%	100%			
0%	0%	0%	0%	0%	0%			43%
0%	0%	0%	0%	0%	0%	57%	43%	
0%	0%	0%	0%	0%	0%	25%	75%	
0%	0%	0%	0%	0%	0%	38%	63%	
0%	0%	0%	0%	0%	0%	50%	50%	
0%	0%	0%	0%	0%	0%	63%	38%	



0%	0%	0%	0%	0%	0%		100%		
0%	0%	0%	0%	0%	0%		100%		
0%	0%	0%	0%	0%	0%	25%	75%		
50%	0%	0%	0%	0%	0%	50%	50%		
75%	25%	0%	0%	0%	0%	75%	25%		
	100%	0%	0%	0%	0%	100%			
		100%	0%	0%	0%	100%			
			100%	0%	0%	100%			
				100%	0%	100%		/	
					100%	100%	/	/	
<b>Total</b>							690%	465%	105%
<b>Lives lost</b>							0	547	253
<b>Life-Years lost</b>							0	10002	4643

Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Impa			
January	February	March	April	May	June	0 months	1 month	2 months	
							118	241	
							2,151	4,421	
100%	100%	100%	100%	100%	100%				
0%	0%	0%	0%	0%	0%			225%	
0%	0%	0%	0%	0%	0%	100%			
0%	0%	0%	0%	0%	0%	100%			
0%	0%	0%	0%	0%	0%	100%			
0%	0%	0%	0%	0%	0%	100%			
0%	0%	0%	0%	0%	0%	100%			
0%	0%	0%	0%	0%	0%	100%			
100%	0%	0%	0%	0%	0%	100%			
	100%	0%	0%	0%	0%	100%			
		100%	0%	0%	0%	100%			
			100%	0%	0%	100%			
				100%	0%	100%		/	
					100%	100%	/	/	
<b>Total</b>							1200%	0%	225%
<b>Lives lost</b>							0	0	542
<b>Life-Years lost</b>							0	0	9948
100%	100%	100%	100%	100%	100%			121%	
0%	0%	0%	0%	0%	0%				
0%	0%	0%	0%	0%	0%	54%	46%		
0%	0%	0%	0%	0%	0%	25%	75%		
0%	0%	0%	0%	0%	0%	100%			
0%	0%	0%	0%	0%	0%	100%			
0%	0%	0%	0%	0%	0%	100%			
0%	0%	0%	0%	0%	0%	100%			
100%	0%	0%	0%	0%	0%	100%			
	100%	0%	0%	0%	0%	100%			
		100%	0%	0%	0%	100%			
			100%	0%	0%	100%			
				100%	0%	100%		/	
					100%	100%	/	/	
<b>Total</b>							1079%	121%	121%
<b>Lives lost</b>							0	143	292
<b>Life-Years lost</b>							0	2606	5357
138%	138%	100%	100%	100%	100%				



0%	0%	0%	0%	0%	0%			69%	
0%	0%	0%	0%	0%	0%	31%	31%	38%	
0%	0%	0%	0%	0%	0%		13%	88%	
0%	0%	0%	0%	0%	0%		50%	50%	
0%	0%	0%	0%	0%	0%		88%	13%	
0%	0%	0%	0%	0%	0%		100%		
75%	0%	0%	0%	0%	0%	25%	75%		
63%	38%	0%	0%	0%	0%	63%	38%		
	100%	0%	0%	0%	0%	100%			
		100%	0%	0%	0%	100%			
			100%	0%	0%	100%			
				100%	0%	100%		/	
					100%	100%	/	/	
						<b>Total</b>	618%	393%	258%
						<b>Lives lost</b>	0	463	621
						<b>Life-Years lost</b>	0	8459	11394

backlog'; each individual is

months 3-8.

List of Delays			
3 months	4 months	Total	Excess
369	501		
6,799	9,272		
	/		
/	/		
/	/		
/	/		
0%	0%		
0	0	181	0
0	0	3316	0
21%			
	/		
/	/		
/	/		
/	/		
21%	0%		
79	0	271	90
1457	0	4978	1662
32%			

	/		
/	/		
/	/		
/	/		
32%	0%		
119	0	581	401
2185	0	10649	7332

ct of Delays			
3 months	4 months	Total	Excess
369	501		
6,799	9,272		

	/		
/	/		
/	/		
/	/		
0%	0%		
0	0	361	0
0	0	6632	0

60%			
	/		
/	/		
/	/		
/	/		
60%	0%		
221	0	544	183
4079	0	9995	3362

60%	30%		

	/		
/	/		
/	/		
/	/		
60%	30%		
221	150	1172	811
4079	2782	21506	14873

ct of Delays			
3 months	4 months	Total	Excess
369	501		
6,799	9,272		
	/		
/	/		
/	/		
/	/		
0%	0%		
0	0	542	0
0	0	9948	0
104%			
	/		
/	/		
/	/		
/	/		
104%	0%		
383	0	818	276
7061	0	15023	5075

69%	87%		
	/		
/	/		
/	/		
/	/		
69%	87%		
256	434	1773	1231
4707	8024	32584	22635