

Prioritisation by FIT to mitigate the impact of delays in the two-week wait colorectal cancer referral pathway during the COVID-19 pandemic: a UK modelling study

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Reference period of disruption (months)		12								
Duration of background delay (months)		3								
Pan-stage per-day delay-HR		0.0056			0.0065 (+2SD)			0.0047 (-2SD)		
Per-day nosocomial infection rate halves each 3 months	Nosocomial infection rate (per-day): current	2.0%	5.0%	10.0%	2.0%	5.0%	10.0%	2.0%	5.0%	10.0%
	Nosocomial infection rate (per-day): post-d	1.0%	2.5%	5.0%	1.0%	2.5%	5.0%	1.0%	2.5%	5.0%
	Attributable deaths	1,062	1,025	978	1,255	1,216	1,168	874	838	793
	Life years lost	14,949	14,552	14,064	17,730	17,320	16,812	12,256	11,872	11,403
Per-day nosocomial infection rate is stable	Nosocomial infection rate (per-day): current	2.0%	5.0%	10.0%	2.0%	5.0%	10.0%	2.0%	5.0%	10.0%
	Nosocomial infection rate (per-day): post-d	2.0%	5.0%	10.0%	2.0%	5.0%	10.0%	2.0%	5.0%	10.0%
	Attributable deaths	1,081	1,067	1,047	1,273	1,256	1,233	894	882	866
	Life years lost	15,161	15,025	14,840	17,934	17,773	17,556	12,477	12,364	12,211

Supplementary Table 1: Multivariate sensitivity analysis

Hilighted in yellow is the estimated impact of 3 months delay to treatment under default parameter assumptions (Per-day delay-HR=0.0056, per-day nosocomial infection rate=5%, nosocomial infection rate halves each 3 months)

Age band	Stage	Average per-patient delay in diagnosis Average reduction in life years		
		2 months	4 months	6 months
30-39 years	Stage 1	0.2	0.5	0.9
	Stage 2	2.4	5.5	9.5
	Stage 3	4.3	9.4	15.1
40-49 years	Stage 1	0.6	1.5	2.6
	Stage 2	2	4.5	7.8
	Stage 3	3.6	7.9	12.5
50-59 years	Stage 1	0.5	1.2	2.1
	Stage 2	1.4	3.2	5.5
	Stage 3	2.6	5.8	9.3
60-69 years	Stage 1	0.3	0.9	1.6
	Stage 2	1.1	2.5	4.2
	Stage 3	1.9	4.1	6.6
70-79 years	Stage 1	0.3	0.8	1.5
	Stage 2	0.8	1.8	3.1
	Stage 3	1.4	2.8	4.3
80+ years	Stage 1	0.5	1.1	1.8
	Stage 2	0.5	1.2	1.9
	Stage 3	0.7	1.4	1.9

Supplementary Table 1: Reduction in life years from delay in colorectal cancer treatment (based on 10-year net survival). The strength of shade of orange indicates the greatest loss in life years from delay.

		2%			5%			10%		
		2 months	4 months	6 months	2 months	4 months	6 months	2 months	4 months	6 months
30-39 years	Stage 1	0.4%	1.1%	1.9%	0.4%	1.0%	1.9%	0.3%	1.0%	1.8%
	Stage 2	5.1%	11.7%	20.1%	5.0%	11.7%	20.1%	5.0%	11.6%	20.0%
	Stage 3	9.1%	20.0%	32.2%	9.0%	19.9%	32.1%	9.0%	19.9%	32.0%
40-49 years	Stage 1	1.6%	3.9%	7.0%	1.5%	3.8%	6.9%	1.4%	3.7%	6.8%
	Stage 2	5.2%	12.0%	20.7%	5.1%	11.9%	20.6%	5.0%	11.8%	20.5%
	Stage 3	9.7%	21.0%	33.5%	9.6%	21.0%	33.4%	9.5%	20.8%	33.2%
50-59 years	Stage 1	1.6%	4.1%	7.5%	1.4%	3.8%	7.2%	1.0%	3.4%	6.7%
	Stage 2	4.8%	11.3%	19.5%	4.5%	11.0%	19.2%	4.2%	10.6%	18.8%
	Stage 3	9.3%	20.4%	32.7%	9.0%	20.1%	32.4%	8.7%	19.7%	32.0%
60-69 years	Stage 1	1.5%	4.2%	7.9%	0.8%	3.4%	7.0%	-0.2%	2.3%	5.8%
	Stage 2	5.1%	12.3%	21.4%	4.4%	11.5%	20.5%	3.4%	10.4%	19.3%
	Stage 3	9.3%	20.7%	33.1%	8.6%	19.9%	32.2%	7.6%	18.8%	31.0%
70-79 years	Stage 1	2.2%	6.5%	12.4%	0.6%	4.6%	10.3%	-1.5%	2.2%	7.7%
	Stage 2	5.9%	14.7%	25.4%	4.3%	12.9%	23.4%	2.3%	10.5%	20.7%
	Stage 3	10.5%	22.8%	34.7%	8.9%	21.1%	32.9%	6.9%	18.8%	30.5%
80+ years	Stage 1	6.4%	16.6%	28.3%	3.5%	13.3%	24.7%	-0.3%	8.8%	19.9%
	Stage 2	7.1%	17.9%	30.0%	4.2%	14.6%	26.4%	0.4%	10.2%	21.7%
	Stage 3	10.3%	21.0%	28.8%	7.6%	18.1%	25.8%	4.0%	14.1%	21.7%

Supplementary Table 2: Survival benefit from surgery versus delay, for different per day rates of COVID-19 nosocomial infection (assuming 6 day in-patient stay and rates of nosocomial infection halve for every 3 months of delay). Green colour indicates survival benefit from avoidance of delay; red colouring indicates survival benefit from delay.