Supplementary analysis for patients starting treatment for gynaecological cancer

Patients waiting over 104 days from urgent suspected cancer referral to starting treatment for gynaecological cancer

Cervical, ovarian and uterine cancers showed similar general associations between age and likelihood of waiting over 104 days (Tables 1, 7 & 13). Women aged 19-49 were less likely to be a long waiter compared to those aged 60-69 in all analyses for cervical and ovarian cancer. Cervical cancer had no other significant differences by age but for ovarian and uterine cancer those aged 80+ were more likely to wait over 104 days compared to those aged 60-69 in all analyses. Patients living in the most deprived quintile were more likely to wait over 104 days compared to the least for ovarian and uterine cancer, but this association was not significant for cervical cancer. The likelihood of being a long waiter increased with increasing financial year, with uterine cancer having the highest adjusted odds ratios for Q1 & Q2 2022/2023 compared to the baseline year among both the original and rapid cancer registration dataset (RCRD) linked cohort (5.44 and 5.50 respectively). There were no significant differences by stage for ovarian cancer, while those diagnosed with uterine cancer at stage 2 were more likely to wait over 104 days compared to those diagnosed at stage 1. There were no significant relationships between comorbidity score and being a long waiter for ovarian cancer, but those with a comorbidity score of 1, 2 or 3+ were more likely to be long waiters compared to those with a score of 0 for uterine cancer. For cervical cancer, those with a score of 1 were more likely to be long waiters for cervical cancer, but there were no significant associations for those with higher comorbidity score.

The longest subinterval for each cancer was from referral to informed of diagnosis with the median interval from DTT to treatment in Q1 & Q2 2022/2023 around 22 days for ovarian cancer (Table 8), 26 days for cervical (Table 2) and 27 for uterine cancer (Table 14). There was a median of 38 days from informed of diagnosis to DTT for cervical cancer and 22 days for ovarian and uterine cancer, with this interval increasing for ovarian cancer from 2020/2021.

The most common reason for delay from referral to treatment in Q1 & Q2 2022/2023 was healthcare provider-initiated delay for cervical, ovarian and uterine cancer (Tables 3, 9 & 15). Only small numbers of patients met the 28-day standard from referral to being informed of diagnosis in Q1 & Q2 2022/2023 for all the sites. The percentages who met the 31-day standard from decision to treat (DTT) to treatment decreased substantially from 2017/2018 to Q1 & Q2 2022/2023 for all sites, from 100% to 71.2% for cervical, 87.8% to 70.0% for ovarian and 82.0% to 60.7% for uterine cancer.

Patients waiting over 62 days from urgent suspected cancer referral to starting treatment for gynaecological cancer

Similar relationships between age and likelihood of waiting over 62 days were seen (Tables 4, 10 & 16), with those aged 19-49 less likely to wait over 62 days compared to those aged 60-69 for cervical, ovarian, and uterine cancer, and those aged 80+ more likely for ovarian and uterine. There was not significant variation by deprivation for cervical or ovarian cancer in the RCRD linked analysis, but a deprivation gradient was present for uterine cancer. Similar findings were seen for financial year. Those diagnosed with ovarian cancer at stage 3 were more likely to wait over 62 days compared to those diagnosed at stage 1

as were those diagnosed with uterine cancer at stage 2 or 3. Those with a comorbidity score of 1, 2 or 3+ were more likely to wait over 62 days, compared to those with a score of 0 for uterine cancer, but there were no significant associations seen for cervical or ovarian cancer.

The interval findings were similar compared to those waiting over 104 days (Tables 5, 11 & 17), but with shorter median intervals. Similar findings for reasons for delay were present (Tables 6, 12 & 18), although the percentage that met the 28 and 31-day standards was generally higher, compared to those waiting over 104 days.

Table 1: Regression analysis for likelihood of waiting over 104 days by characteristic for cervical cancer. Results presented for both the original and Rapid Cancer Registration Dataset (RCRD) linked cohort. The results for the original cohort are presented unadjusted and adjusted and results for the RCRD linked cohort are presented unadjusted, with minimal adjustment to align with the original cohort analysis and with full adjustment

		Original cohort		**RCRD linked cohort**		
Characteristic	**Category**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs)**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs) (minimal adjustment)**	**Adjusted odds ratio (95% CIs) (fully adjusted)**
Age group	19-49	0.36 (0.24-0.54)*	0.32 (0.21-0.49)*	0.31 (0.2-0.48)*	0.26 (0.17-0.42)*	0.27 (0.17-0.43)*
	50-59	0.8 (0.56-1.14)	0.79 (0.54-1.15)	0.72 (0.5-1.06)	0.72 (0.48-1.08)	0.74 (0.49-1.1)
	60-69 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
	70-79	0.94 (0.65-1.37)	0.89 (0.6-1.33)	0.71 (0.47-1.08)	0.65 (0.41-1.01)	0.63 (0.4-0.99)
	80+	0.98 (0.64-1.52)	1.05 (0.67-1.67)	1.04 (0.67-1.63)	1.18 (0.73-1.9)	1.17 (0.72-1.89)
Deprivation quintile	1 - most deprived	1.49 (0.97-2.29)	1.35 (0.84-2.15)	1.96 (1.19-3.22)*	2.04 (1.19-3.5)*	1.97 (1.15-3.4)
	2	1.21 (0.77-1.9)	1.18 (0.73-1.9)	1.48 (0.88-2.49)	1.75 (1.01-3.03)	1.71 (0.99-2.97)
	3	1.43 (0.92-2.24)	1.51 (0.94-2.43)	1.69 (1.01-2.84)	2.07 (1.19-3.59)*	2.02 (1.17-3.52)
	4	1.21 (0.76-1.94)	1.16 (0.71-1.89)	1.29 (0.74-2.22)	1.39 (0.78-2.45)	1.37 (0.77-2.44)
	5 - least deprived (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Financial year	Base year (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
	2020/2021	1.59 (1.08-2.35)	1.61 (1.08-2.41)	1.62 (1.06-2.49)	1.66 (1.06-2.58)	1.7 (1.09-2.65)

		Original cohort		RCRD linked cohort		
Characteristic	**Category**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs)**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs) (minimal adjustment)**	**Adjusted odds ratio (95% CIs) (fully adjusted)**
	2021/2022	2.3 (1.6-3.31)*	2.39 (1.64-3.5)*	2.37 (1.59-3.54)*	2.62 (1.73-3.98)*	2.7 (1.78-4.11)*
	Q1 & Q2 2022/2023	3.34 (2.24-4.97)*	3.69 (2.42-5.62)*	3.59 (2.33-5.52)*	4.14 (2.62-6.53)*	4.3 (2.71-6.82)*
Comorbidity	0 (ref)			1 (ref)		1 (ref)
	1			2.03 (1.3-3.17)*		1.98 (1.21-3.24)*
	2			2.03 (1.01-4.08)		1.66 (0.79-3.5)
	3+			0.68 (0.21-2.21)		0.54 (0.16-1.82)

*significant at the p<0.01 level

Table 2: Median and interquartile range for the intervals in the diagnostic and treatment pathway for cervical cancer patients who waited over 104 days from referral to treatment in each financial year of start of treatment

Interval	2017/2018 (Median and IQR)	2020/2021 (Median and IQR)	2021/2022 (Median and IQR)	Q1 & Q2 2022/2023 (Median and IQR)
Referral to first seen	12 (7.5 - 14)	9 (6 - 14)	12.5 (8 - 14)	13 (10 - 14)
First seen to informed of diagnosis	Data not available	50 (22 - 70)	52 (33 - 69)	45 (28.25 - 71.5)
Informed of diagnosis to decision to treat	Data not available	39 (28 - 62)	29 (22.5 - 43.5)	38 (20.25 - 60.5)
Decision to treat to treatment start	22 (14.5 - 27)	20.5 (13 - 29)	24 (14 - 31)	25.5 (16.5 - 34)
Referral to informed of diagnosis	Data not available	59 (38 - 80)	69 (47.5 - 84)	56 (43.5 - 83.5)
Referral to decision to treat	98 (89 - 123)	99 (86 - 117.5)	99 (89 - 119)	107.5 (89.5 - 122)
Referral to treatment start	116 (110 - 138.5)	118.5 (111 - 131)	119 (112 - 136)	126.5 (117.25 - 151)

Table 3: Breakdown of the reasons for delay in each financial year of start of treatment among cervical cancer patients who waited over 104 days from referral to treatment, with delay overall between referral and treatment, from referral to informed of diagnosis or from decision to treat to treatment

Delay interval	Reason for delay	2017/2018 (Number and %)	2020/2021 (Number and %)	2021/2022 (Number and %)	Q1 & Q2 2022/2023 (Number and %)
Referral to treatment start	Healthcare provider-initiated delay	5 (10.6%)	10 (15.2%)	37 (38.1%)	28 (42.4%)
	Medical reason for diagnosis delay	17 (36.2%)	18 (27.3%)	27 (27.8%)	20 (30.3%)
	Medical reason for treatment delay	<5	<5	<5	<5
	Patient-initiated delay	<5	<10	<10	<5
	Other reason (not listed)	20 (42.6%)	28 (42.4%)	24 (24.7%)	14 (21.2%)
Referral to informed of diagnosis	Healthcare provider-initiated delay	Data not available	10 (24.4%)	18 (30.5%)	16 (29.6%)
	Medical reason for diagnosis delay	Data not available	12 (29.3%)	13 (22.0%)	12 (22.2%)
	Patient-initiated delay	Data not available	<10	<5	<5
	Other reason (not listed)	Data not available	7 (17.1%)	<10	12 (22.2%)
	No delay	Data not available	<5	<10	6 (11.1%)
	Unknown	Data not available	<5	12 (20.3%)	<5
Decision to treat to treatment start	Healthcare provider-initiated delay	<5	<5	17 (17.5%)	14 (21.2%)
	Medical reason for diagnosis delay	<5	<5	<5	<5
	Medical reason for treatment delay	<5	<5	<5	<5

Delay interval	Reason for delay	2017/2018 (Number and %)	2020/2021 (Number and %)	2021/2022 (Number and %)	Q1 & Q2 2022/2023 (Number and %)
	Patient-initiated delay	<5	<5	<5	<5
	Other reason (not listed)	<5	<5	<5	<5
	No delay	47 (100.0%)	56 (84.8%)	74 (76.3%)	47 (71.2%)

Table 4: Regression analysis for likelihood of waiting over 62 days by characteristic for cervical cancer. Results presented for both the original and RCRD linked cohort. The results for the original cohort are presented unadjusted and adjusted and results for the RCRD linked cohort are presented unadjusted, with minimal adjustment to align with the original cohort analysis and with full adjustment

		Original cohort		RCRD linked cohort		
Characteristic	**Category**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs)**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs) (minimal adjustment)**	**Adjusted odds ratio (95% CIs) (fully adjusted)**
Age group	19-49	0.46 (0.37-0.58)*	0.42 (0.32-0.54)*	0.31 (0.2-0.48)*	0.42 (0.32-0.55)*	0.42 (0.32-0.55)*
	50-59	0.88 (0.69-1.12)	0.84 (0.65-1.1)	0.72 (0.5-1.06)	0.85 (0.65-1.12)	0.85 (0.64-1.11)
	60-69 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
	70-79	1.18 (0.91-1.54)	1.19 (0.89-1.59)	0.71 (0.47-1.08)	1.22 (0.9-1.65)	1.22 (0.9-1.66)
	80+	0.72 (0.53-0.97)	0.72 (0.51-1)	1.04 (0.67-1.63)	0.87 (0.62-1.23)	0.89 (0.63-1.26)
Deprivation quintile	1 - most deprived	1.18 (0.92-1.52)	1.21 (0.9-1.62)	1.96 (1.19-3.22)*	1.42 (1.03-1.94)	1.42 (1.04-1.95)
	2	1.21 (0.93-1.57)	1.29 (0.96-1.73)	1.48 (0.88-2.49)	1.39 (1.02-1.9)	1.39 (1.02-1.9)
	3	1.05 (0.8-1.37)	1.15 (0.85-1.56)	1.69 (1.01-2.84)	1.31 (0.95-1.8)	1.3 (0.95-1.79)
	4	1.17 (0.89-1.53)	1.12 (0.83-1.52)	1.29 (0.74-2.22)	1.27 (0.92-1.75)	1.27 (0.92-1.75)
	5 - least deprived (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Financial year	Base year (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
	2020/2021	1.67 (1.35-2.07)*	1.8 (1.43-2.27)*	1.62 (1.06-2.49)	1.44 (1.13-1.83)*	1.43 (1.13-1.82)*

		Original cohort		RCRD linked cohort		
Characteristic	**Category**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs)**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs) (minimal adjustment)**	**Adjusted odds ratio (95% CIs) (fully adjusted)**
	2021/2022	3.49 (2.82-4.32)*	3.78 (3-4.76)*	2.37 (1.59-3.54)*	2.95 (2.32-3.74)*	2.94 (2.31-3.73)*
	Q1 & Q2 2022/2023	4.14 (3.18-5.4)*	4.72 (3.54-6.29)*	3.59 (2.33-5.52)*	3.79 (2.82-5.09)*	3.76 (2.8-5.06)*
Comorbidity	0 (ref)			1 (ref)		1 (ref)
	1			2.03 (1.3-3.17)*		0.91 (0.63-1.31)
	2			2.03 (1.01-4.08)		1.06 (0.59-1.89)
	3+			0.68 (0.21-2.21)		0.75 (0.38-1.47)

*significant at the p<0.01 level

Table 5: Median and interquartile range for the intervals in the diagnostic and treatment pathway for cervical cancer patients who waited over 62 days from referral to treatment in each financial year of start of treatment

Interval	2017/2018 (Median and IQR)	2020/2021 (Median and IQR)	2021/2022 (Median and IQR)	Q1 & Q2 2022/2023 (Median and IQR)
Referral to first seen	10 (7 - 13)	10 (7 - 13)	11 (8 - 14)	12 (8 - 14)
First seen to informed of diagnosis	Data not available	25 (15 - 39)	23 (14 - 39)	24.5 (14 - 42)
Informed of diagnosis to decision to treat	Data not available	28 (16 - 39)	25.5 (15 - 36)	28.5 (17 - 42)
Decision to treat to treatment start	21 (14 - 26)	21 (13 - 27)	21 (14 - 27)	22 (14.75 - 29)
Referral to informed of diagnosis	Data not available	36 (26 - 51)	37 (26 - 53)	37.5 (26 - 55)
Referral to decision to treat	62 (51 - 80)	63 (53 - 80)	64 (52 - 82)	66 (53.75 - 88)
Referral to treatment start	81 (72 - 100.25)	85 (73 - 101)	84 (74 - 101)	89 (76 - 110)

Table 6: Breakdown of the reasons for delay in each financial year of start of treatment among cervical cancer patients who waited over 62 days from referral to treatment, with delay overall between referral and treatment, from referral to informed of diagnosis or from decision to treat to treatment

Delay interval	Reason for delay	2017/2018 (Number and %)	2020/2021 (Number and %)	2021/2022 (Number and %)	Q1 & Q2 2022/2023 (Number and %)
Referral to treatment start	Healthcare provider-initiated delay	53 (22.1%)	103 (34.0%)	208 (45.8%)	119 (49.6%)
	Medical reason for diagnosis delay	59 (24.6%)	68 (22.4%)	104 (22.9%)	58 (24.2%)
	Medical reason for treatment delay	13 (5.4%)	<10	8 (1.8%)	6 (2.5%)
	Patient-initiated delay	16 (6.7%)	~25	25 (5.5%)	8 (3.3%)
	Other reason (not listed)	99 (41.2%)	102 (33.7%)	109 (24.0%)	49 (20.4%)
Referral to informed of diagnosis	Healthcare provider-initiated delay	Data not available	39 (19.1%)	84 (25.9%)	48 (27.0%)
	Medical reason for diagnosis delay	Data not available	37 (18.1%)	48 (14.8%)	28 (15.7%)
	Patient-initiated delay	Data not available	~10	10 (3.1%)	<10
	Other reason (not listed)	Data not available	36 (17.6%)	35 (10.8%)	27 (15.2%)
	No delay	Data not available	62 (30.4%)	107 (33.0%)	61 (34.3%)
	Unknown	Data not available	~20	40 (12.3%)	<10
Decision to treat to treatment start	Healthcare provider-initiated delay	<5	18 (5.9%)	37 (8.1%)	26 (10.8%)
	Medical reason for diagnosis delay	<5	<5	<5	<5
	Medical reason for treatment delay	<5	7 (2.3%)	<5	<5

Delay interval	Reason for delay	2017/2018 (Number and %)	2020/2021 (Number and %)	2021/2022 (Number and %)	Q1 & Q2 2022/2023 (Number and %)
	Patient-initiated delay	<5	<5	<10	<5
	Other reason (not listed)	<5	<5	11 (2.4%)	<5
	No delay	230 (95.8%)	269 (88.8%)	397 (87.4%)	203 (84.6%)

Table 7: Regression analysis for likelihood of waiting over 104 days by characteristic for ovarian cancer. Results presented for both the original and RCRD linked cohort. The results for the original cohort are presented unadjusted and adjusted and results for the RCRD linked cohort are presented unadjusted, with minimal adjustment to align with the original cohort analysis and with full adjustment

		Original cohort		RCRD linked cohort		
Characteristic	**Category**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs)**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs) (minimal adjustment)**	**Adjusted odds ratio (95% CIs) (fully adjusted)**
Age group	19-49	0.43 (0.27-0.69)*	0.39 (0.24-0.63)*	0.25 (0.13-0.46)*	0.22 (0.12-0.41)*	0.24 (0.13-0.45)*
	50-59	0.78 (0.56-1.07)	0.72 (0.52-0.99)	0.74 (0.52-1.04)	0.68 (0.48-0.96)	0.71 (0.5-1)
	60-69 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
	70-79	1.19 (0.91-1.56)	1.23 (0.93-1.62)	1.09 (0.81-1.45)	1.14 (0.85-1.53)	1.11 (0.82-1.49)
	80+	2 (1.49-2.7)*	2.13 (1.57-2.89)*	2.17 (1.6-2.95)*	2.36 (1.72-3.23)*	2.2 (1.59-3.03)*
Deprivation quintile	1 - most deprived	1.49 (1.08-2.05)	1.66 (1.18-2.32)*	1.56 (1.11-2.19)	1.81 (1.27-2.6)*	1.78 (1.24-2.55)*
	2	1.23 (0.9-1.7)	1.36 (0.98-1.9)	1.12 (0.79-1.59)	1.26 (0.88-1.8)	1.25 (0.87-1.8)
	3	1.07 (0.78-1.48)	1.18 (0.85-1.63)	0.98 (0.7-1.38)	1.09 (0.77-1.55)	1.09 (0.77-1.55)
	4	1.06 (0.78-1.45)	1.08 (0.79-1.49)	1.14 (0.82-1.58)	1.14 (0.82-1.59)	1.14 (0.81-1.58)
	5 - least deprived (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Financial year	Base year (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
	2020/2021	2.06 (1.44-2.93)*	2.17 (1.52-3.09)*	1.17 (0.82-1.67)	1.17 (0.82-1.67)	1.16 (0.81-1.66)

		Original cohort		RCRD linked cohort		
Characteristic	**Category**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs)**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs) (minimal adjustment)**	**Adjusted odds ratio (95% CIs) (fully adjusted)**
	2021/2022	3.39 (2.45-4.7)*	3.71 (2.67-5.15)*	2.32 (1.71-3.16)*	2.48 (1.82-3.37)*	2.44 (1.78-3.33)*
	Q1 & Q2 2022/2023	4.64 (3.27-6.59)*	5.05 (3.55-7.21)*	3.25 (2.32-4.54)*	3.4 (2.42-4.78)*	3.36 (2.39-4.72)*
Stage	1 (ref)			1 (ref)		1 (ref)
	2			1.1 (0.59-2.03)		0.99 (0.53-1.84)
	3			1.92 (1.37-2.69)*		1.5 (1.05-2.13)
	4			1.53 (1.04-2.25)		1.08 (0.72-1.62)
	Not known			2.06 (1.48-2.86)*		1.54 (1.09-2.18)
Comorbidity	0 (ref)			1 (ref)		1 (ref)
	1			1.78 (1.25-2.54)*		1.38 (0.95-1.99)
	2			1.78 (1.02-3.11)		1.3 (0.73-2.33)
	3+			1.55 (0.78-3.09)		0.96 (0.47-1.95)

*significant at the $p<0.01$ level

Table 8: Median and interquartile range for the intervals in the diagnostic and treatment pathway for ovarian cancer patients who waited over 104 days from referral to treatment in each financial year of start of treatment

Interval	2017/2018 (Median and IQR)	2020/2021 (Median and IQR)	2021/2022 (Median and IQR)	Q1 & Q2 2022/2023 (Median and IQR)
Referral to first seen	9 (7 - 13)	11 (7.25 - 13.75)	11 (8 - 14)	10 (6 - 14)
First seen to informed of diagnosis	Data not available	92 (76 - 112)	77 (38 - 103)	74 (49 - 96)
Informed of diagnosis to decision to treat	Data not available	10 (0 - 25)	13.5 (0 - 42)	22 (7 - 49)
Decision to treat to treatment start	15 (7 - 28)	16.5 (9 - 27.75)	22 (13 - 31)	21.5 (12.75 - 34)
Referral to informed of diagnosis	Data not available	105 (87 - 121)	86.5 (50.5 - 115)	85 (55 - 104)
Referral to decision to treat	105 (90 - 120)	110 (92 - 127)	102 (85 - 119.5)	105.5 (86.5 - 120)
Referral to treatment start	121 (109 - 130)	124.5 (112.25 - 145)	120 (109.5 - 139.5)	123.5 (113 - 141)

Table 9: Breakdown of the reasons for delay in each financial year of start of treatment among ovarian cancer patients who waited over 104 days from referral to treatment, with delay overall between referral and treatment, from referral to informed of diagnosis or from decision to treat to treatment

Delay interval	Reason for delay	2017/2018 (Number and %)	2020/2021 (Number and %)	2021/2022 (Number and %)	Q1 & Q2 2022/2023 (Number and %)
Referral to treatment start	Healthcare provider-initiated delay	<10	24 (26.7%)	49 (30.8%)	38 (38.0%)
	Medical reason for diagnosis delay	16 (32.7%)	32 (35.6%)	60 (37.7%)	32 (32.0%)
	Medical reason for treatment delay	<10	<10	<5	<5
	Patient-initiated delay	<5	<5	<10	<5
	Other reason (not listed)	19 (38.8%)	27 (30.0%)	38 (23.9%)	24 (24.0%)
Referral to informed of diagnosis	Healthcare provider-initiated delay	Data not available	10 (22.2%)	20 (23.3%)	14 (25.5%)
	Medical reason for diagnosis delay	Data not available	17 (37.8%)	34 (39.5%)	21 (38.2%)
	Patient-initiated delay	Data not available	<5	<5	<5
	Other reason (not listed)	Data not available	6 (13.3%)	10 (11.6%)	11 (20.0%)
	No delay	Data not available	<5	<10	<5
	Unknown	Data not available	7 (15.6%)	14 (16.3%)	6 (10.9%)
Decision to treat to treatment start	Healthcare provider-initiated delay	<5	10 (11.1%)	26 (16.4%)	21 (21.0%)
	Medical reason for diagnosis delay	<5	<5	<5	<5
	Medical reason for treatment delay	<5	5 (5.6%)	<5	<5

Delay interval	Reason for delay	2017/2018 (Number and %)	2020/2021 (Number and %)	2021/2022 (Number and %)	Q1 & Q2 2022/2023 (Number and %)
	Patient-initiated delay	<5	<5	<5	<5
	Other reason (not listed)	<5	5 (5.6%)	5 (3.1%)	<5
	No delay	43 (87.8%)	69 (76.7%)	122 (76.7%)	70 (70.0%)

Table 10: Regression analysis for likelihood of waiting over 62 days by characteristic for ovarian cancer. Results presented for both the original and RCRD linked cohort. The results for the original cohort are presented unadjusted and adjusted and results for the RCRD linked cohort are presented unadjusted, with minimal adjustment to align with the original cohort analysis and with full adjustment

		Original cohort		RCRD linked cohort		
Characteristic	**Category**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs)**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs) (minimal adjustment)**	**Adjusted odds ratio (95% CIs) (fully adjusted)**
Age group	19-49	0.56 (0.47-0.68)*	0.52 (0.43-0.63)*	0.57 (0.47-0.69)*	0.53 (0.43-0.64)*	0.55 (0.45-0.68)*
	50-59	0.79 (0.68-0.91)*	0.71 (0.61-0.83)*	0.84 (0.72-0.97)	0.78 (0.66-0.91)*	0.79 (0.68-0.93)*
	60-69 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
	70-79	1.2 (1.05-1.37)*	1.22 (1.06-1.4)*	1.2 (1.04-1.37)	1.23 (1.07-1.43)*	1.2 (1.04-1.4)
	80+	1.41 (1.2-1.66)*	1.55 (1.3-1.84)*	1.49 (1.26-1.76)*	1.66 (1.38-1.99)*	1.59 (1.32-1.91)*
Deprivation quintile	1 - most deprived	1.27 (1.09-1.5)*	1.34 (1.12-1.6)*	1.19 (1-1.4)	1.24 (1.03-1.49)	1.22 (1.01-1.47)
	2	1.15 (0.98-1.34)	1.21 (1.02-1.43)	1.09 (0.93-1.28)	1.14 (0.96-1.36)	1.14 (0.95-1.36)
	3	1.04 (0.89-1.2)	1.1 (0.93-1.29)	0.93 (0.8-1.09)	1.02 (0.86-1.2)	1.01 (0.85-1.19)
	4	1.03 (0.89-1.2)	1.02 (0.87-1.2)	1.1 (0.95-1.28)	1.1 (0.94-1.3)	1.1 (0.93-1.29)
	5 - least deprived (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Financial year	Base year (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
	2020/2021	1.83 (1.58-2.11)*	1.98 (1.7-2.3)*	1.43 (1.23-1.65)*	1.49 (1.28-1.73)*	1.5 (1.29-1.75)*

		Original cohort		RCRD linked cohort		
Characteristic	**Category**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs)**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs) (minimal adjustment)**	**Adjusted odds ratio (95% CIs) (fully adjusted)**
	2021/2022	2.82 (2.46-3.23)*	3.2 (2.77-3.7)*	2.26 (1.98-2.6)*	2.53 (2.19-2.92)*	2.53 (2.19-2.92)*
	Q1 & Q2 2022/2023	3.84 (3.26-4.51)*	4.46 (3.75-5.3)*	3.15 (2.67-3.71)*	3.58 (3.01-4.25)*	3.55 (2.98-4.23)*
Stage	1 (ref)			1 (ref)		1 (ref)
	2			1.28 (1-1.64)		1.22 (0.93-1.59)
	3			1.74 (1.5-2.01)*		1.47 (1.25-1.72)*
	4			1.38 (1.17-1.64)*		1.06 (0.88-1.28)
	Not known			1.57 (1.36-1.81)*		1.28 (1.09-1.5)*
Comorbidity	0 (ref)			1 (ref)		1 (ref)
	1			1.35 (1.11-1.64)*		1.21 (0.98-1.5)
	2			1.14 (0.83-1.56)		0.99 (0.7-1.41)
	3+			1.5 (1.05-2.14)		1.2 (0.81-1.77)

*significant at the $p<0.01$ level

Table 11: Median and interquartile range for the intervals in the diagnostic and treatment pathway for ovarian cancer patients who waited over 62 days from referral to treatment in each financial year of start of treatment

Interval	2017/2018 (Median and IQR)	2020/2021 (Median and IQR)	2021/2022 (Median and IQR)	Q1 & Q2 2022/2023 (Median and IQR)
Referral to first seen	10 (7 - 13)	10 (7 - 13)	11 (7 - 14)	11 (7 - 14)
First seen to informed of diagnosis	Data not available	46 (23 - 69)	42 (24 - 72)	46 (28 - 65)
Informed of diagnosis to decision to treat	Data not available	11 (0 - 24)	11 (0 - 28)	12 (0 - 28.5)
Decision to treat to treatment start	14 (8 - 22.75)	15 (8.25 - 23)	17 (10 - 27)	16 (9.5 - 28)
Referral to informed of diagnosis	Data not available	55 (35 - 78)	53 (35 - 83)	56 (36.5 - 76.5)
Referral to decision to treat	66 (55 - 78)	63 (52 - 78)	64 (52 - 78)	64 (51 - 81)
Referral to treatment start	78 (70 - 92.75)	78 (70 - 93)	82 (71 - 97)	82 (71 - 98.5)

Table 12: Breakdown of the reasons for delay in each financial year of start of treatment among ovarian cancer patients who waited over 62 days from referral to treatment, with delay overall between referral and treatment, from referral to informed of diagnosis or from decision to treat to treatment

Delay interval	Reason for delay	2017/2018 (Number and %)	2020/2021 (Number and %)	2021/2022 (Number and %)	Q1 & Q2 2022/2023 (Number and %)
Referral to treatment start	Healthcare provider-initiated delay	117 (28.3%)	229 (38.3%)	391 (44.7%)	244 (49.7%)
	Medical reason for diagnosis delay	109 (26.3%)	157 (26.3%)	218 (24.9%)	128 (26.1%)
	Medical reason for treatment delay	39 (9.4%)	30 (5.0%)	~20	~15
	Patient-initiated delay	~20	~15	34 (3.9%)	17 (3.5%)
	Other reason (not listed)	129 (31.2%)	166 (27.8%)	209 (23.9%)	88 (17.9%)
	Unknown	<5	<5	<5	<5
Referral to informed of diagnosis	Healthcare provider-initiated delay	Data not available	69 (19.8%)	97 (20.7%)	71 (24.1%)
	Medical reason for diagnosis delay	Data not available	107 (30.7%)	128 (27.4%)	106 (35.9%)
	Patient-initiated delay	Data not available	<5	<10	6 (2.0%)
	Other reason (not listed)	Data not available	62 (17.8%)	~55	43 (14.6%)
	No delay	Data not available	62 (17.8%)	79 (16.9%)	44 (14.9%)
	Unknown	Data not available	~45	105 (22.4%)	25 (8.5%)
Decision to treat to treatment start	Healthcare provider-initiated delay	24 (5.8%)	53 (8.9%)	113 (12.9%)	72 (14.7%)
	Medical reason for diagnosis delay	<5	<10	<10	<10

Delay interval	Reason for delay	2017/2018 (Number and %)	2020/2021 (Number and %)	2021/2022 (Number and %)	Q1 & Q2 2022/2023 (Number and %)
	Medical reason for treatment delay	9 (2.2%)	11 (1.8%)	<10	<10
	Patient-initiated delay	<5	<5	<5	<10
	Other reason (not listed)	6 (1.4%)	14 (2.3%)	11 (1.3%)	<5
	No delay	373 (90.1%)	513 (85.8%)	729 (83.4%)	400 (81.5%)

Table 13: Regression analysis for likelihood of waiting over 104 days by characteristic for uterine cancer. Results presented for both the original and RCRD linked cohort. The results for the original cohort are presented unadjusted and adjusted and results for the RCRD linked cohort are presented unadjusted, with minimal adjustment to align with the original cohort analysis and with full adjustment

		Original cohort		RCRD linked cohort		
Characteristic	**Category**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs)**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs) (minimal adjustment)**	**Adjusted odds ratio (95% CIs) (fully adjusted)**
Age group	19-49	0.88 (0.65-1.19)	0.73 (0.53-1)	0.86 (0.62-1.2)	0.7 (0.5-0.99)	0.71 (0.51-1.01)
	50-59	0.92 (0.8-1.06)	0.85 (0.73-0.98)	0.95 (0.83-1.1)	0.88 (0.76-1.02)	0.89 (0.76-1.03)
	60-69 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
	70-79	1.04 (0.92-1.17)	1.03 (0.91-1.17)	1.05 (0.93-1.19)	1.05 (0.92-1.19)	1.02 (0.89-1.16)
	80+	1.32 (1.15-1.53)*	1.4 (1.21-1.63)*	1.33 (1.15-1.55)*	1.41 (1.21-1.65)*	1.3 (1.1-1.52)*
Deprivation quintile	1 - most deprived	1.73 (1.48-2.02)*	1.64 (1.38-1.94)*	1.68 (1.43-1.96)*	1.66 (1.39-1.97)*	1.59 (1.34-1.9)*
	2	1.34 (1.15-1.57)*	1.35 (1.14-1.59)*	1.26 (1.07-1.48)*	1.32 (1.11-1.57)*	1.28 (1.08-1.53)*
	3	1.23 (1.05-1.44)*	1.27 (1.08-1.49)*	1.17 (0.99-1.37)	1.25 (1.06-1.48)*	1.23 (1.04-1.45)
	4	1.24 (1.06-1.45)*	1.26 (1.07-1.48)*	1.17 (1-1.37)	1.23 (1.04-1.45)	1.21 (1.03-1.43)
	5 - least deprived (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Financial year	Base year (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
	2020/2021	2.27 (1.92-2.69)*	2.29 (1.93-2.72)*	2.2 (1.86-2.61)*	2.23 (1.88-2.65)*	2.24 (1.88-2.67)*

		Original cohort		RCRD linked cohort		
Characteristic	**Category**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs)**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs) (minimal adjustment)**	**Adjusted odds ratio (95% CIs) (fully adjusted)**
	2021/2022	3.58 (3.05-4.2)*	3.73 (3.17-4.38)*	3.43 (2.92-4.02)*	3.55 (3.02-4.17)*	3.58 (3.04-4.21)*
	Q1 & Q2 2022/2023	5.09 (4.3-6.04)*	5.44 (4.57-6.47)*	5.03 (4.24-5.97)*	5.44 (4.57-6.48)*	5.5 (4.62-6.56)*
Stage	1 (ref)			1 (ref)		1 (ref)
	2			1.44 (1.18-1.75)*		1.32 (1.07-1.62)*
	3			1.39 (1.19-1.64)*		1.13 (0.96-1.34)
	4			1.09 (0.86-1.38)		0.88 (0.69-1.13)
	Not known			1.22 (1.08-1.38)*		1.1 (0.96-1.27)
Comorbidity	0 (ref)			1 (ref)		1 (ref)
	1			1.28 (1.07-1.53)*		1.3 (1.08-1.57)*
	2			1.42 (1.12-1.78)*		1.4 (1.1-1.79)*
	3+			1.78 (1.41-2.23)*		1.73 (1.35-2.21)*

*significant at the $p<0.01$ level

Table 14: Median and interquartile range for the intervals in the diagnostic and treatment pathway for uterine cancer patients who waited over 104 days from referral to treatment in each financial year of start of treatment

Interval	2017/2018 (Median and IQR)	2020/2021 (Median and IQR)	2021/2022 (Median and IQR)	Q1 & Q2 2022/2023 (Median and IQR)
Referral to first seen	10 (8 - 13)	10 (7 - 13)	12 (8 - 14)	12 (8 - 15)
First seen to informed of diagnosis	Data not available	59.5 (30.75 - 89)	50 (30.25 - 73)	59.5 (35 - 79.75)
Informed of diagnosis to decision to treat	Data not available	21 (7 - 49)	23 (11.5 - 44)	22 (12 - 42.75)
Decision to treat to treatment start	20.5 (10 - 29)	22 (12 - 35.25)	27 (15.25 - 40)	27 (15 - 41)
Referral to informed of diagnosis	Data not available	71 (43 - 99)	63 (44.5 - 88)	72 (50.25 - 95)
Referral to decision to treat	102 (89 - 118.75)	101 (85 - 120.25)	96 (79 - 114.75)	99 (83 - 121)
Referral to treatment start	119 (111 - 139)	124.5 (112 - 142)	121 (111 - 142)	125 (113 - 148)

Table 15: Breakdown of the reasons for delay in each financial year of start of treatment among uterine cancer patients who waited over 104 days from referral to treatment, with delay overall between referral and treatment, from referral to informed of diagnosis or from decision to treat to treatment

Delay interval	Reason for delay	2017/2018 (Number and %)	2020/2021 (Number and %)	2021/2022 (Number and %)	Q1 & Q2 2022/2023 (Number and %)
Referral to treatment start	Healthcare provider-initiated delay	44 (21.4%)	143 (31.6%)	320 (43.1%)	206 (42.1%)
	Medical reason for diagnosis delay	53 (25.7%)	79 (17.5%)	165 (22.2%)	114 (23.3%)
	Medical reason for treatment delay	15 (7.3%)	27 (6.0%)	37 (5.0%)	20 (4.1%)
	Patient-initiated delay	14 (6.8%)	42 (9.3%)	44 (5.9%)	41 (8.4%)
	Other reason (not listed)	80 (38.8%)	161 (35.6%)	176 (23.7%)	108 (22.1%)
Referral to informed of diagnosis	Healthcare provider-initiated delay	Data not available	70 (25.3%)	168 (34.2%)	135 (39.9%)
	Medical reason for diagnosis delay	Data not available	61 (22.0%)	89 (18.1%)	79 (23.4%)
	Patient-initiated delay	Data not available	26 (9.4%)	26 (5.3%)	23 (6.8%)
	Other reason (not listed)	Data not available	52 (18.8%)	76 (15.5%)	48 (14.2%)
	No delay	Data not available	34 (12.3%)	45 (9.2%)	27 (8.0%)
	Unknown	Data not available	34 (12.3%)	87 (17.7%)	26 (7.7%)
Decision to treat to treatment start	Healthcare provider-initiated delay	14 (6.8%)	68 (15.0%)	182 (24.5%)	139 (28.4%)
	Medical reason for diagnosis delay	<5	8 (1.8%)	25 (3.4%)	~15
	Medical reason for treatment delay	12 (5.8%)	19 (4.2%)	25 (3.4%)	~15

Delay interval	Reason for delay	2017/2018 (Number and %)	2020/2021 (Number and %)	2021/2022 (Number and %)	Q1 & Q2 2022/2023 (Number and %)
	Patient-initiated delay	<5	7 (1.5%)	10 (1.3%)	<10
	Other reason (not listed)	9 (4.4%)	28 (6.2%)	37 (5.0%)	17 (3.5%)
	No delay	169 (82.0%)	322 (71.2%)	463 (62.4%)	297 (60.7%)

Table 16: Regression analysis for likelihood of waiting over 62 days by characteristic for uterine cancer. Results presented for both the original and RCRD linked cohort. The results for the original cohort are presented unadjusted and adjusted and results for the RCRD linked cohort are presented unadjusted, with minimal adjustment to align with the original cohort analysis and with full adjustment

		Original cohort		RCRD linked cohort		
Characteristic	**Category**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs)**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs) (minimal adjustment)**	**Adjusted odds ratio (95% CIs) (fully adjusted)**
Age group	19-49	0.92 (0.77-1.1)	0.82 (0.67-1)	0.85 (0.7-1.03)	0.71 (0.57-0.87)*	0.71 (0.57-0.88)*
	50-59	0.96 (0.88-1.04)	0.89 (0.81-0.98)	0.94 (0.87-1.03)	0.89 (0.81-0.98)	0.9 (0.82-0.99)
	60-69 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
	70-79	1.18 (1.1-1.28)*	1.16 (1.07-1.26)*	1.16 (1.07-1.25)*	1.14 (1.04-1.24)*	1.11 (1.02-1.21)
	80+	1.24 (1.13-1.36)*	1.3 (1.17-1.45)*	1.24 (1.13-1.37)*	1.3 (1.17-1.45)*	1.22 (1.1-1.37)*
Deprivation quintile	1 - most deprived	1.25 (1.13-1.38)*	1.25 (1.11-1.4)*	1.23 (1.12-1.36)*	1.31 (1.17-1.48)*	1.28 (1.13-1.44)*
	2	1.14 (1.04-1.25)*	1.24 (1.12-1.39)*	1.1 (1-1.21)	1.25 (1.12-1.4)*	1.23 (1.1-1.37)*
	3	1.1 (1.01-1.21)	1.17 (1.05-1.3)*	1.07 (0.98-1.18)	1.2 (1.08-1.34)*	1.19 (1.07-1.32)*
	4	1.07 (0.97-1.17)	1.09 (0.99-1.21)	1.03 (0.94-1.13)	1.1 (0.99-1.22)	1.09 (0.98-1.2)
	5 - least deprived (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Financial year	Base year (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
	2020/2021	2.45 (2.24-2.68)*	2.64 (2.41-2.91)*	2.01 (1.84-2.19)*	2.14 (1.95-2.34)*	2.15 (1.95-2.36)*

		Original cohort		RCRD linked cohort		
Characteristic	**Category**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs)**	**Unadjusted odds ratio (95% CIs)**	**Adjusted odds ratio (95% CIs) (minimal adjustment)**	**Adjusted odds ratio (95% CIs) (fully adjusted)**
	2021/2022	3.87 (3.55-4.22)*	4.59 (4.19-5.04)*	3.2 (2.94-3.48)*	3.77 (3.44-4.12)*	3.78 (3.45-4.14)*
	Q1 & Q2 2022/2023	5.4 (4.87-5.99)*	6.92 (6.18-7.74)*	4.45 (4.02-4.93)*	5.77 (5.16-6.45)*	5.81 (5.19-6.5)*
Stage	1 (ref)			1 (ref)		1 (ref)
	2			1.36 (1.2-1.55)*		1.25 (1.08-1.45)*
	3			1.66 (1.5-1.84)*		1.35 (1.2-1.52)*
	4			1.38 (1.2-1.59)*		1.15 (0.98-1.35)
	Not known			1.24 (1.15-1.33)*		1.09 (0.99-1.19)
Comorbidity	0 (ref)			1 (ref)		1 (ref)
	1			1.15 (1.02-1.29)		1.2 (1.06-1.37)*
	2			1.24 (1.06-1.45)*		1.26 (1.06-1.5)*
	3+			1.36 (1.16-1.61)*		1.46 (1.21-1.76)*

*significant at the $p<0.01$ level

Table 17: Median and interquartile range for the intervals in the diagnostic and treatment pathway for uterine cancer patients who waited over 62 days from referral to treatment in each financial year of start of treatment

Interval	2017/2018 (Median and IQR)	2020/2021 (Median and IQR)	2021/2022 (Median and IQR)	Q1 & Q2 2022/2023 (Median and IQR)
Referral to first seen	11 (8 - 13)	10 (7 - 13)	11 (8 - 14)	12 (8 - 14)
First seen to informed of diagnosis	Data not available	32.5 (18.25 - 50)	33 (20 - 49)	35 (21 - 55)
Informed of diagnosis to decision to treat	Data not available	15 (3 - 29)	17 (6 - 29)	19 (7 - 31)
Decision to treat to treatment start	16 (9 - 27)	20 (11 - 29)	22 (13 - 30)	21 (12 - 31)
Referral to informed of diagnosis	Data not available	43 (29 - 61.25)	44 (31 - 60)	47 (34 - 68)
Referral to decision to treat	67 (56 - 83)	63 (50 - 82)	65 (52 - 82)	68 (55 - 87)
Referral to treatment start	84 (72 - 99)	83 (71 - 102)	87 (75 - 105)	89 (76 - 111)

Table 18: Breakdown of the reasons for delay in each financial year of start of treatment among uterine cancer patients who waited over 62 days from referral to treatment, with delay overall between referral and treatment, from referral to informed of diagnosis or from decision to treat to treatment

Delay interval	Reason for delay	2017/2018 (Number and %)	2020/2021 (Number and %)	2021/2022 (Number and %)	Q1 & Q2 2022/2023 (Number and %)
Referral to treatment start	Healthcare provider-initiated delay	328 (31.3%)	849 (42.6%)	1496 (53.4%)	836 (52.6%)
	Medical reason for diagnosis delay	188 (17.9%)	293 (14.7%)	522 (18.6%)	306 (19.2%)
	Medical reason for treatment delay	80 (7.6%)	~90	~100	~45
	Patient-initiated delay	~75	113 (5.7%)	151 (5.4%)	85 (5.3%)
	Other reason (not listed)	376 (35.8%)	648 (32.5%)	529 (18.9%)	319 (20.1%)
	Unknown	<5	<5	<5	<5
Referral to informed of diagnosis	Healthcare provider-initiated delay	Data not available	363 (26.7%)	675 (33.5%)	423 (37.6%)
	Medical reason for diagnosis delay	Data not available	221 (16.2%)	294 (14.6%)	190 (16.9%)
	Patient-initiated delay	Data not available	78 (5.7%)	80 (4.0%)	65 (5.8%)
	Other reason (not listed)	Data not available	233 (17.1%)	234 (11.6%)	152 (13.5%)
	No delay	Data not available	336 (24.7%)	408 (20.3%)	198 (17.6%)
	Unknown	Data not available	129 (9.5%)	323 (16.0%)	96 (8.5%)
Decision to treat to treatment start	Healthcare provider-initiated delay	63 (6.0%)	231 (11.6%)	476 (17.0%)	305 (19.2%)
	Medical reason for diagnosis delay	<5	15 (0.8%)	56 (2.0%)	~20

Delay interval	Reason for delay	2017/2018 (Number and %)	2020/2021 (Number and %)	2021/2022 (Number and %)	Q1 & Q2 2022/2023 (Number and %)
	Medical reason for treatment delay	36 (3.4%)	45 (2.3%)	52 (1.9%)	24 (1.5%)
	Patient-initiated delay	<10	15 (0.8%)	21 (0.8%)	~10
	Other reason (not listed)	21 (2.0%)	96 (4.8%)	59 (2.1%)	30 (1.9%)
	No delay	924 (88.1%)	1591 (79.8%)	2135 (76.3%)	1200 (75.5%)