

Supplement 5: Clinical utility

We report below on the estimated number of women under 90 years who would be referred for further investigation following CA125 in England per year and the number of cases of invasive ovarian cancer (OC) that could be identified using:

- (1) Using the Ovatoools risk prediction model, where 1-2.9% risk and $\geq 3\%$ risk triggering primary care ultrasound and direct urgent cancer pathway referral, respectively (**Table S5.1.11.**)
- (2) Using integer CA125 thresholds that equate to approximately $\geq 1\%$ and $\geq 3\%$ risk of invasive OC by age group to trigger ultrasound and direct cancer referral, respectively. We use age categorisations: 18-29, 30-39, 40-49, 50-59, 60-69, 70-79 and 80-89 years (**Table S5.2.12**)

Utility for both groups is compared to that using current NICE guidelines, in which a CA125 test result $\geq 35\text{U/ml}$ triggers primary care ultrasound (referred to as “current practice”). For both groups above, we estimate the utility overall, by ages above and below 50 years, and by age group.

Table S5.i. The number of women tested using CA125 in primary care in England in 2022

	Number
Women tested with CA125 in 2022	34,075
GP practices with CA125 records in CPRD	1,009
Average women tested using CA125 per GP practice per year	33.77
Total GP practices in England in 2022 ²⁵	6,422
Total tested with CA125 in England in 2022 under 90 years	216,878
Number with invasive ovarian cancer (incidence 0.62%) in England	1,339
Total population in England in 2022 ²⁶	57,112,500
CA125 tests per 100,000 population per year	380
Number with invasive ovarian cancer / 100,000 population	2.39

The mean number of women who received one or more CA125 tests per GP practice per year in CPRD between 28 February 2021 and 1 March 2022 was calculated (**Table S5.i**). Women with a prior diagnosis of any invasive ovarian cancer were excluded. Based on 34,075 women under 90 years tested with CA125 in one year across 1,009 GP practices in CPRD, this equated to approximately 33.77 women per GP practice per year. With 6,422 GP practices in 2022²⁵, a total of 216,878 women under 90 years were estimated to have been tested with CA125 in England in 2022. The population in England in 2022 was approximately 57,112,500²⁶, thus, an estimated 380 women had one or more CA125 tests per 100,000 population in 2022, of which 2.39 had invasive ovarian cancer.

Table S5.ii. The number of women under 90 years tested using CA125 in primary care in England in 2022 by age group

Age group	Population distribution, %	Number tested using CA125 per year	Invasive OC incidence, n (%)
18-29 years	5.40%	11,711	23 (0.13)
30-39 years	11.69%	25,353	55 (0.14)
40-49 years	25.17%	54,588	221 (0.26)
50-59 years	22.91%	49,687	401 (0.52)
60-69 years	16.88%	36,609	603 (1.05)
70-79 years	11.98%	25,982	536 (1.32)
80-89 years	5.97%	12,948	255 (1.26)

Section 5.1. Clinical utility of using Ovatoools risk models at 1-2.9% and $\geq 3\%$ to trigger ultrasound and urgent referral, respectively, compared to current practice.

Table S5.1.1. Distribution of CA125 ≥ 35 U/ml and Ovatoools risk among CA125-tested women per year, all ages

CA125 and Ovatoools risk distribution for all participants and by invasive ovarian cancer diagnosis		Proportion, %	Number in cohort, total=339,124	Number in England per year, total=216,878
All participants	CA125 <35U/mL	93.20	316,068	202,133
	CA125 ≥ 35 U/mL	6.80	23,056	14,745
	<1% risk	92.05	312,152	199,629
	$\geq 1\%$ risk	7.95	26,972	17,249
	1-3%	5.25	17,806	11,387
	$\geq 3\%$ risk	2.70	9,166	5,862
Participants with invasive ovarian cancer	CA125 ≥ 35 U/mL	84.67	1,773	1,134
	$\geq 1\%$ risk	86.82	1,818	1,163
	$\geq 3\%$ risk	77.55	1,624	1,039
Participants without invasive ovarian cancer	CA125 ≥ 35 U/mL	6.31	21,283	13,611
	$\geq 1\%$ risk	7.46	25,154	16,087
	$\geq 3\%$ risk	2.24	7,542	4,238

Table S5.1.2. Distribution of CA125 ≥ 35 U/ml and Ovatoools risk among CA125-tested women per year, 18-29 years

CA125 and Ovatoools risk distribution for all participants and by invasive ovarian cancer diagnosis		Proportion, %	Number in cohort, total=18,319	Number in England per year, total=11,711
All participants	CA125 <35U/mL	94.69	17,347	11,090
	CA125 ≥ 35 U/mL	5.31	972	621
	<1% risk	95.39	17,474	11,171
	$\geq 1\%$ risk	4.61	845	540
	1-3%	3.53	647	414
	$\geq 3\%$ risk	1.08	198	127
Participants with invasive ovarian cancer	CA125 ≥ 35 U/mL	56.52	13	8
	$\geq 1\%$ risk	47.83	11	7
	$\geq 3\%$ risk	39.13	9	6
Participants without invasive ovarian cancer	CA125 ≥ 35 U/mL	5.24	959	613
	$\geq 1\%$ risk	4.56	834	533
	$\geq 3\%$ risk	1.03	189	118

Table S5.1.3. Distribution of CA125 $\geq$ 35U/ml and Ovatoools risk among CA125-tested women per year, 30-39 years

CA125 and Ovatoools risk distribution for all participants and by invasive ovarian cancer diagnosis		Proportion, %	Number in cohort, total=39,635	Number in England per year, total=25,353
All participants	CA125 <35U/mL	0.14	55	35
	CA125 $\geq$ 35U/mL	99.86	39,580	25,318
	<1% risk	92.27	36,570	23,392
	$\geq$ 1% risk	7.73	3,065	1,961
	1-3%	97.43	38,617	24,702
	$\geq$ 3% risk	2.57	1,018	651
Participants with invasive ovarian cancer	CA125 $\geq$ 35U/mL	69.09	38	24
	$\geq$ 1% risk	49.09	27	17
	$\geq$ 3% risk	23.64	13	8
Participants without invasive ovarian cancer	CA125 $\geq$ 35U/mL	7.65	3,027	1,936
	$\geq$ 1% risk	2.50	991	634
	$\geq$ 3% risk	0.55	219	135

Table S5.1.4. Distribution of CA125 $\geq$ 35U/ml and Ovatoools risk among CA125-tested women per year, 40-49 years

CA125 and Ovatoools risk distribution for all participants and by invasive ovarian cancer diagnosis		Proportion, %	Number in cohort, total=39,635	Number in England per year, total=25,353
All participants	CA125 <35U/mL	91.86	78,396	50,144
	CA125 $\geq$ 35U/mL	8.14	6,948	4,444
	<1% risk	96.82	82,628	52,851
	$\geq$ 1% risk	3.18	2,716	1,737
	1-3%	2.44	2,084	1,333
	$\geq$ 3% risk	0.74	632	404
Participants with invasive ovarian cancer	CA125 $\geq$ 35U/mL	78.73	174	111
	$\geq$ 1% risk	66.52	147	94
	$\geq$ 3% risk	51.13	113	72
Participants without invasive ovarian cancer	CA125 $\geq$ 35U/mL	7.96	6,774	4,333
	$\geq$ 1% risk	3.02	2,569	1,643
	$\geq$ 3% risk	0.61	519	291

Table S5.1.5. Distribution of CA125 $\geq$ 35U/ml and Ovatoools risk among CA125-tested women per year, 50-59 years

CA125 and Ovatoools risk distribution for all participants and by invasive ovarian cancer diagnosis		Proportion, %	Number in cohort, total= 77,697	Number in England per year, total=49,687
All participants	CA125 <35U/mL	0.52	401	256
	CA125 $\geq$ 35U/mL	99.48	77,296	49,430
	<1% risk	95.26	74,012	47,330
	$\geq$ 1% risk	4.74	3,685	2,357
	1-3%	0.52	401	256
	$\geq$ 3% risk	99.48	77,296	49,430
Participants with invasive ovarian cancer	CA125 $\geq$ 35U/mL	80.55	323	207
	$\geq$ 1% risk	84.54	339	217
	$\geq$ 3% risk	72.32	290	185
Participants without invasive ovarian cancer	CA125 $\geq$ 35U/mL	4.35	3,362	2,150
	$\geq$ 1% risk	7.03	5,434	3,475
	$\geq$ 3% risk	1.58	1,225	679

Table S5.1.6. Distribution of CA125 $\geq$ 35U/ml and Ovatoools risk among CA125-tested women per year, 60-69 years

CA125 and Ovatoools risk distribution for all participants and by invasive ovarian cancer diagnosis		Proportion, %	Number in cohort, total= 57,257	Number in England per year, total=36,609
All participants	CA125 <35U/mL	95.05	54,420	34,795
	CA125 $\geq$ 35U/mL	4.95	2,837	1,814
	<1% risk	88.44	50,637	32,376
	$\geq$ 1% risk	11.56	6,620	4,233
	1-3%	6.93	3,969	2,538
	$\geq$ 3% risk	4.63	2,651	1,695
Participants with invasive ovarian cancer	CA125 $\geq$ 35U/mL	86.90	524	335
	$\geq$ 1% risk	92.37	557	356
	$\geq$ 3% risk	86.57	522	334
Participants without invasive ovarian cancer	CA125 $\geq$ 35U/mL	4.08	2,313	1,479
	$\geq$ 1% risk	10.70	6,063	3,877
	$\geq$ 3% risk	3.76	2,129	1,173

Table S5.1.7. Distribution of CA125 $\geq$ 35U/ml and Ovatoools risk among CA125-tested women per year, 70-79 years

CA125 and Ovatoools risk distribution for all participants and by invasive ovarian cancer diagnosis		Proportion, %	Number in cohort, total= 40,624	Number in England per year, total=25,982
All participants	CA125 <35U/mL	92.53	37,589	24,041
	CA125 $\geq$ 35U/mL	7.47	3,035	1,941
	<1% risk	84.86	34,472	22,047
	$\geq$ 1% risk	15.14	6,152	3,935
	1-3%	9.00	3,656	2,338
	$\geq$ 3% risk	6.14	2,496	1,596
Participants with invasive ovarian cancer	CA125 $\geq$ 35U/mL	87.69	470	301
	$\geq$ 1% risk	93.66	502	321
	$\geq$ 3% risk	86.01	461	295
Participants without invasive ovarian cancer	CA125 $\geq$ 35U/mL	6.40	2,565	1,641
	$\geq$ 1% risk	14.09	5,650	3,614
	$\geq$ 3% risk	5.08	2,035	1,135

Table S5.1.8. Distribution of CA125 $\geq$ 35U/ml and Ovatoools risk among CA125-tested women per year, 80-89 years

CA125 and Ovatoools risk distribution for all participants and by invasive ovarian cancer diagnosis		Proportion, %	Number in cohort, total= 20,248	Number in England per year, total=12,948
All participants	CA125 <35U/mL	87.58	17,734	11,340
	CA125 $\geq$ 35U/mL	12.42	2,514	1,608
	<1% risk	81.00	16,400	10,487
	$\geq$ 1% risk	19.00	3,848	2,461
	1-3%	11.88	2,406	1,539
	$\geq$ 3% risk	7.12	1,442	922
Participants with invasive ovarian cancer	CA125 $\geq$ 35U/mL	90.59	231	148
	$\geq$ 1% risk	92.16	235	150
	$\geq$ 3% risk	84.71	216	138
Participants without invasive ovarian cancer	CA125 $\geq$ 35U/mL	11.42	2,283	1,460
	$\geq$ 1% risk	18.07	3,613	2,310
	$\geq$ 3% risk	6.13	1,226	706

Table S5.1.9. Distribution of CA125 $\geq$ 35U/ml and Ovatoools risk among CA125-tested women per year, 18-49 years

CA125 and Ovatoools risk distribution for all participants and by invasive ovarian cancer diagnosis		Proportion, %	Number in cohort, total= 143,298	Number in England per year, total=91,653
All participants	CA125 <35U/mL	92.33	132,313	84,627
	CA125 $\geq$ 35U/mL	7.67	10,985	7,026
	<1% risk	96.80	138,719	88,724
	$\geq$ 1% risk	3.20	4,579	2,929
	1-3%	2.45	3,517	2,249
	$\geq$ 3% risk	0.74	1,062	679
Participants with invasive ovarian cancer	CA125 $\geq$ 35U/mL	75.25	225	144
	$\geq$ 1% risk	61.87	185	118
	$\geq$ 3% risk	45.15	135	86
Participants without invasive ovarian cancer	CA125 $\geq$ 35U/mL	7.52	10,760	6,882
	$\geq$ 1% risk	3.07	4,394	2,810
	$\geq$ 3% risk	0.65	927	544

Table S5.1.10. Distribution of CA125 $\geq$ 35U/ml and Ovatoools risk among CA125-tested women per year, 50-89 years

CA125 and Ovatoools risk distribution for all participants and by invasive ovarian cancer diagnosis		Proportion, %	Number in cohort, total= 143,298	Number in England per year, total=91,653
All participants	CA125 <35U/mL	93.84	183,755	117,506
	CA125 $\geq$ 35U/mL	6.16	12,071	7,719
	<1% risk	88.87	174,038	111,292
	$\geq$ 1% risk	11.44	22,393	14,320
	1-3%	7.30	14,289	9,137
	$\geq$ 3% risk	4.14	8,104	5,182
Participants with invasive ovarian cancer	CA125 $\geq$ 35U/mL	86.24	1,548	990
	$\geq$ 1% risk	90.97	1,633	1,044
	$\geq$ 3% risk	82.95	1,489	952
Participants without invasive ovarian cancer	CA125 $\geq$ 35U/mL	5.42	10,523	6,729
	$\geq$ 1% risk	10.70	20,760	13,275
	$\geq$ 3% risk	3.41	6,615	3,693

Table S5.1.11. Women investigated further and identified with invasive OC using current practice compared to Ovatoools risks 1-2.9% and $\geq 3\%$ to trigger ultrasound or cancer referral, respectively.

Age group	Age distribution, %	Threshold for primary care ultrasound, U/ml	Ultrasound following CA125, n	Change in USS using Ovatoools, n	Urgent referral (risk $\geq 3\%$), n	Additional women tested further using Ovatoools, n	Invasive OC detected, n	Additional OC detected using Ovatoools, n
All ages	NA	CA125 ≥ 35 U/mL	14,745	NA	NA	NA	1,134	29
		Ovatoools 1-2.9%	11,387	-3,357	5,862	2,504	1,163	
All ages 18-49 years	42.26	CA125 ≥ 35 U/mL	7,026	NA	NA	NA	144	-26
		Ovatoools 1-2.9%	2,249	-4,776	679	-4,097	118	
All ages 50-89 years	57.74	CA125 ≥ 35 U/mL	7,719	NA	NA	NA	990	54
		Ovatoools 1-2.9%	9,137	1,418	5,182	6,601	1,044	
18-29 years	5.40	CA125 ≥ 35 U/mL	621	NA	NA	NA	8	-1
		Ovatoools 1-2.9%	414	-208	127	-81	7	
30-39 years	11.69	CA125 ≥ 35 U/mL	1,961	NA	NA	NA	24	-7
		Ovatoools 1-2.9%	503	-1,458	148	-1,309	17	
40-49 years	25.17	CA125 ≥ 35 U/mL	4,444	NA	NA	NA	111	-17
		Ovatoools 1-2.9%	1,333	-3,111	404	-2,707	94	
50-59 years	22.91	CA125 ≥ 35 U/mL	2,357	NA	NA	NA	207	10
		Ovatoools 1-2.9%	2,723	366	969	1,335	217	
60-69 years	16.88	CA125 ≥ 35 U/mL	1,814	NA	NA	NA	335	21
		Ovatoools 1-2.9%	2,538	724	1,695	2,419	356	
70-79 years	11.98	CA125 ≥ 35 U/mL	1,941	NA	NA	NA	301	20
		Ovatoools 1-2.9%	2,338	397	1,596	1,994	321	
80-89 years	5.97	CA125 ≥ 35 U/mL	1,608	NA	NA	NA	148	3
		Ovatoools 1-2.9%	1,539	-69	922	853	150	

Section 5.2: Clinical utility using age-group based CA125 levels that approximate 1-2.9% and 3% Ovatoools risk to trigger ultrasound and urgent referral, respectively.

Table 5.2.1. The CA125 thresholds used to estimate to trigger ultrasound or cancer referral

Age group	Equivalent CA125 level (U/ml)	
	Ovatoools 1-2.9% risk (primary care ultrasound)	Ovatoools $\geq 3\%$ risk (urgent cancer referral)
18-29 years	34-90.9	≥ 91
30-39 years	59-159.9	≥ 160
40-49 years	58-156.9	≥ 157
50-59 years	26-56.9	≥ 57
60-69 years	22-36.9	≥ 37
70-79 years	22-40.9	≥ 41
80-89 years	26-57.9	≥ 58

Table S5.2.2. Distribution of women with CA125 values above/below the 1% and 3% risk thresholds, all ages

CA125 / risk distribution for all participants and by invasive ovarian cancer diagnosis		Proportion, %	Number in cohort, total=339,124	Number in England per year, total=216,878
All participants	<1% risk*	91.08	308,877	197,534
	$\geq 1\%$ risk*	8.92	30,247	19,344
	1-3%*	6.06	20,550	13,142
	$\geq 3\%$ risk*	2.86	9,697	6,201
Participants with invasive ovarian cancer	$\geq 1\%$ risk*	86.82	1,818	1,163
	$\geq 3\%$ risk*	77.55	1,624	1,039
Participants without invasive ovarian cancer	$\geq 1\%$ risk*	7.46	25,154	16,087
	$\geq 3\%$ risk*	2.24	7,542	4,238

*CA125 thresholds applied by age group as defined in Table S5.2.1

Table S5.2.3. Distribution of women with CA125 values above/below the 1% and 3% risk thresholds, 18-29 years

CA125 /risk distribution for all participants and by invasive ovarian cancer diagnosis, U/ml (% risk)		Proportion, %	Number in cohort, total=18,319	Number in England per year, total=11,711
All participants	CA125 <34 (<1%)	94.37	17,287	11,052
	CA125 = 34-90.9 (1-3% risk)	4.36	799	511
	CA125 ≥ 91 ($\geq 3\%$ risk)	1.27	233	149
Participants with invasive ovarian cancer	CA125 ≥ 34 ($\geq 1\%$ risk)	56.52	13	8
	CA125 ≥ 91 ($\geq 3\%$ risk)	30.43	7	4
Participants without invasive ovarian cancer	CA125 ≥ 34 ($\geq 1\%$ risk)	7.46	5.57	1,019
	CA125 ≥ 91 ($\geq 3\%$ risk)	2.24	1.24	226

Table S5.2.4. Distribution of women with CA125 values above/below the 1% and 3% risk thresholds, 30-39 years

CA125 /risk distribution for all participants and by invasive ovarian cancer diagnosis, U/ml (% risk)		Proportion, %	Number in cohort, total=39,635	Number in England per year, total=25,353
All participants	CA125 <59 (<1%)	97.24	38,541	24,653
	CA125 = 59-159.9 (1-3% risk)	2.11	837	535
	CA125 ≥160 (≥3% risk)	0.65	257	164
Participants with invasive ovarian cancer	CA125 ≥59 (≥1% risk)	50.91	28	18
	CA125 ≥160 (≥3% risk)	29.09	16	10
Participants without invasive ovarian cancer	CA125 ≥59 (≥1% risk)	2.69	1,066	682
	CA125 ≥160 (≥3% risk)	0.61	241	148

Table S5.2.5. Distribution of women with CA125 values above/below the 1% and 3% risk thresholds, 40-49 years

CA125 /risk distribution for all participants and by invasive ovarian cancer diagnosis, U/ml (% risk)		Proportion, %	Number in cohort, total=85,344	Number in England per year, total=54,588
All participants	CA125 <58 (<1%)	97.00	82,784	52,951
	CA125 = 58-156.9 (1-3% risk)	2.28	1,946	1,245
	CA125 ≥157 (≥3% risk)	0.72	614	393
Participants with invasive ovarian cancer	CA125 ≥58 (≥1% risk)	67.42	149	95
	CA125 ≥157 (≥3% risk)	48.42	107	68
Participants without invasive ovarian cancer	CA125 ≥58 (≥1% risk)	2.83	2,411	1,542
	CA125 ≥157 (≥3% risk)	0.60	507	286

Table S5.2.6. Distribution of women with CA125 values above/below the 1% and 3% risk thresholds, 50-59 years

CA125 /risk distribution for all participants and by invasive ovarian cancer diagnosis, U/ml (% risk)		Proportion, %	Number in cohort, total=77,697	Number in England per year, total=49,687
All participants	CA125 <26 (<1%)	91.19	70,849	45,307
	CA125 = 26-56.9 (1-3% risk)	6.57	75,956	3,266
	CA125 ≥57 (≥3% risk)	2.24	1,741	1,113
Participants with invasive ovarian cancer	CA125 ≥26 (≥1% risk)	84.79	340	217
	CA125 ≥57 (≥3% risk)	72.32	290	185
Participants without invasive ovarian cancer	CA125 ≥26 (≥1% risk)	8.42	6,508	4,162
	CA125 ≥57 (≥3% risk)	1.88	1,451	823

Table S5.2.7. Distribution of women with CA125 values above/below the 1% and 3% risk thresholds, 60-69 years

CA125 /risk distribution for all participants and by invasive ovarian cancer diagnosis, U/ml (% risk)		Proportion, %	Number in cohort, total=57,257	Number in England per year, total=36,609
All participants	CA125 <22 (<1%)	88.42	50,625	32,369
	CA125 = 22-36.9 (1-3% risk)	6.95	54,607	2,546
	CA125 ≥37 (≥3% risk)	4.63	2,650	1,694
Participants with invasive ovarian cancer	CA125 ≥22 (≥1% risk)	92.37	557	356
	CA125 ≥37 (≥3% risk)	86.57	522	334
Participants without invasive ovarian cancer	CA125 ≥22 (≥1% risk)	10.72	6,075	3,884
	CA125 ≥37 (≥3% risk)	3.76	2,128	1,172

Table S5.2.8. Distribution of women with CA125 values above/below the 1% and 3% risk thresholds, 70-79 years

CA125 /risk distribution for all participants and by invasive ovarian cancer diagnosis, U/ml (% risk)		Proportion, %	Number in cohort, total=40,624	Number in England per year, total=25,982
All participants	CA125 <22 (<1%)	83.70	34,004	21,748
	CA125 = 22-40.9 (1-3% risk)	10.08	38,097	2,618
	CA125 ≥41 (≥3% risk)	6.22	2,527	1,616
Participants with invasive ovarian cancer	CA125 ≥22 (≥1% risk)	93.47	501	320
	CA125 ≥41 (≥3% risk)	86.38	463	296
Participants without invasive ovarian cancer	CA125 ≥22 (≥1% risk)	15.26	6,119	3,914
	CA125 ≥41 (≥3% risk)	5.15	2,064	1,153

Table S5.2.9. Distribution of women with CA125 values above/below the 1% and 3% risk thresholds, 80-89 years

CA125 /risk distribution for all participants and by invasive ovarian cancer diagnosis, U/ml (% risk)		Proportion, %	Number in cohort, total=20,248	Number in England per year, total=12,948
All participants	CA125 <26 (<1%)	80.84	16,369	10,467
	CA125 = 26-57.9 (1-3% risk)	12.17	18,833	1,576
	CA125 ≥58 (≥3% risk)	6.99	1,415	905
Participants with invasive ovarian cancer	CA125 ≥26 (≥1% risk)	92.16	235	150
	CA125 ≥58 (≥3% risk)	83.14	212	136
Participants without invasive ovarian cancer	CA125 ≥26 (≥1% risk)	18.23	3,644	2,330
	CA125 ≥58 (≥3% risk)	6.02	1,203	693

Table S5.2.10. Distribution of women with CA125 values above/below the 1% and 3% risk thresholds, 18-49 years

CA125 and Ovatoools risk distribution for all participants and by invasive ovarian cancer diagnosis		Proportion, %	Number in cohort, total=143,298	Number in England per year, total=91,653
All participants	<1% risk*	96.73	138,612	88,655
	1-3%*	2.50	3,582	2,291
	≥3% risk*	0.77	1,104	706
Participants with invasive ovarian cancer	≥1% risk*	63.55	190	122
	≥3% risk*	43.48	130	83
Participants without invasive ovarian cancer	≥1% risk*	3.14	4,496	2,876
	≥3% risk*	0.68	974	576
*CA125 thresholds applied by age group as defined in Table S5.2.1				

Table S5.2.11. Distribution of women with CA125 values above/below the 1% and 3% risk thresholds, 50-89 years

CA125 and Ovatoools risk distribution for all participants and by invasive ovarian cancer diagnosis		Proportion, %	Number in cohort, total=195,826	Number in England per year, total=125,225
All participants	<1% risk*	87.75	171,847	109,891
	≥1% risk*	7.99	15,646	10,005
	1-3%*	4.26	8,333	5,329
	≥3% risk*	2.86	9,697	6,201
Participants with invasive ovarian cancer	≥1% risk*	90.97	1,633	1,044
	≥3% risk*	82.84	1,487	951
Participants without invasive ovarian cancer	≥1% risk*	11.52	22,346	14,290
	≥3% risk*	3.53	6,846	3,842
*CA125 thresholds applied by age group as defined in Table S5.2.1				

Table S5.2.12. The clinical utility of using CA125 thresholds that approximate 1 and 3% risk by age group to trigger ultrasound and cancer referral, respectively, compared to current practice.

Age group	Age distribution, %	Threshold for primary care ultrasound, U/ml (% risk)	Ultrasound following CA125, n	Change in ultrasound using Ovatools, n	Urgent referral (risk $\geq 3\%^*$), n	Additional tested further using Ovatools, n	Invasive OC detected, n	Additional OC detected using Ovatools, n
All ages	NA	CA125 ≥ 35	14,745	NA	NA	NA	1,134	32
		1-2.9% risk*	12,296	-2449	6,035	3,586	1,166	
All 18-49 years	42.26	CA125 ≥ 35	7,026	NA	NA	NA	144	-22
		1-2.9% risk*	2,291	-4735	706	-4029	122	
All 50-89 years	57.74	CA125 ≥ 35	7,719	NA	NA	NA	990	54
		1-2.9% risk*	10,005	2286	5,329	7,615	1,044	
18-29 years	5.40	CA125 ≥ 35	621	NA	NA	NA	8	0
		CA125 ≥ 34 ($\geq 1\%$ risk)	511	-111	149	38	8	
30-39 years	11.69	CA125 ≥ 35	1,961	NA	NA	NA	24	-6
		CA125 ≥ 59 ($\geq 1\%$ risk)	535	-1425	164	-1261	18	
40-49 years	25.17	CA125 ≥ 35	4,444	NA	NA	NA	111	-16
		CA125 ≥ 58 ($\geq 1\%$ risk)	1,245	-3199	393	-2807	95	
50-59 years	22.91	CA125 ≥ 35	2,357	NA	NA	NA	207	11
		CA125 ≥ 26 ($\geq 1\%$ risk)	3,266	909	1113	2,023	217	
60-69 years	16.88	CA125 ≥ 35	1,814	NA	NA	NA	335	21
		CA125 ≥ 22 ($\geq 1\%$ risk)	2,546	732	1,694	2,426	356	
70-79 years	11.98	CA125 ≥ 35	1,941	NA	NA	NA	301	20
		CA125 ≥ 22 ($\geq 1\%$ risk)	2,618	677	1,616	2,293	320	
80-89 years	5.97	CA125 ≥ 35	1,608	NA	NA	NA	148	3
		CA125 ≥ 26 ($\geq 1\%$ risk)	1,576	-32	905	873	150	
*CA125 thresholds equating approximate risk applied by age group as defined in Table S5.2.1								