

Table S1. List of 49 cancer predisposition genes tested.

No.	Gene
1	<i>APC</i>
2	<i>ATM</i>
3	<i>AXIN2</i>
4	<i>BARD1</i>
5	<i>BMPR1A</i>
6	<i>BRCA1</i>
7	<i>BRCA2</i>
8	<i>BRIP1</i>
9	<i>CDH1</i>
10	<i>CDK4</i>
11	<i>CDKN2A</i>
12	<i>CHEK2</i>
13	<i>DICER1</i>
14	<i>EPCAM</i>
15	<i>FANCC</i>
16	<i>GREM1</i>
17	<i>KIT</i>
18	<i>MEN1</i>
19	<i>MET</i>
20	<i>MLH1</i>
21	<i>MRE11</i>
22	<i>MSH2</i>
23	<i>MSH6</i>
24	<i>MUTYH</i>
25	<i>NBN</i>
26	<i>NF1</i>
27	<i>PALB2</i>
28	<i>PALLD</i>
29	<i>PDGFRA</i>
30	<i>PMS2</i>
31	<i>POLD1</i>
32	<i>POLE</i>
33	<i>PTCH1</i>
34	<i>PTEN</i>
35	<i>RAD50</i>
36	<i>RAD51C</i>
37	<i>RAD51D</i>
38	<i>RET</i>
39	<i>SDHA</i>
40	<i>SDHB</i>
41	<i>SDHC</i>
42	<i>SDHD</i>
43	<i>SMAD4</i>
44	<i>SMARCA4</i>
45	<i>STK11</i>
46	<i>TP53</i>
47	<i>TSC1</i>
48	<i>TSC2</i>
49	<i>VHL</i>

Table S2. Patient demographics

Characteristics	N=88
Age at diagnosis (in years)	
Median (Range)	60 (24-88)
Ethnicity	
Chinese	59 (67.0%)
Malay	11 (12.5%)
Indian	12 (13.6%)
Others	6 (6.8%)
Personal history of other cancers	
Breast	1 (1.1%)
Endometrial	2 (2.2%)
Family history of cancer	
Breast	17 (19.3%)
Ovary	6 (6.8%)
Endometrial	1 (1.1%)
Colorectal	2 (2.2%)
Pancreas	4 (4.5%)
Gall bladder	2 (2.2%)
Prostate	2 (2.2%)
Stomach	2 (2.2%)
Urinary bladder	1 (1.1%)
Unknown primary site	3 (3.4%)
Primary site of cancer	
Ovarian	68 (77.3%)
Peritoneal	7 (8.0%)
Fallopian Tube	13 (14.8%)
Ovarian cancer subtype	
High grade serous	33 (48.5%)
Clear cell	19 (28.0%)
Endometrioid	10 (14.7%)
Mucinous	5 (7.3%)
Carcinosarcoma	1 (1.5%)
Stage of cancer	
Stage I	25 (28.4%)
Stage II	9 (10.2%)
Stage III	35 (39.8%)
Stage IV	19 (21.6%)
Waiting time to be seen in decentralized clinic (in days)	
Median (Range)	45 (4-94)

Table S3. Clinical characteristics of patients with germline pathogenic variants (n=12).

Gene	Age at diagnosis in years	Cancer stage and subtype	Family history of cancer	Germline mutation	Somatic mutation
<i>BRCA1</i> n=3 (25.0%)	45	Stage IIIC ovarian cancer, high grade serous	Nil	<i>BRCA1</i> : c.3773_3781dup (p.Leu1261*)	Declined
	50	Stage IIIC fallopian tube cancer, high grade serous	Gall bladder cancer (mother)	<i>BRCA1</i> : c.1833_1834ins? (p.Arg612fs)	Declined
	59	Stage IIIA1 fallopian tube cancer, high grade serous	Nil	<i>BRCA1</i> : c.2726dup (p.Asn909Lysfs*6)	<i>BRCA1</i> N909fs*6 (VAF 89.8%) ¹
<i>BRCA2</i> n=2 (16.7%)	63	Stage IVA ovarian cancer, high grade serous	Nil	<i>BRCA2</i> : Deletion (exon 21)	Insufficient tissue ²
	58	Stage IIIC ovarian cancer, high grade serous	Nil	<i>BRCA2</i> : c.3002C>G (p.Ser1001*)	<i>BRCA2</i> S1001* (VAF 74.0%) ²
<i>RAD51C</i> n=2 (16.7%)	55	Stage IIIC fallopian tube cancer, high grade serous	Nil	<i>RAD51C</i> : c.394dup (p.Thr132Asnfs*23)	<i>RAD51C</i> T132fs*23 (VAF 71.2%) ¹
	72	Stage IVB ovarian cancer, high grade serous	Nil	<i>RAD51C</i> : c.394dup (p.Thr132Asnfs*23)	<i>RAD51C</i> T132fs*23 (VAF 94%) ²
<i>RAD51D</i> n=3 (125.0%)	64	Stage IVA ovarian cancer, high grade serous	Nil	<i>RAD51D</i> : c.270_271dup (p.Lys91Ilefs*13)	<i>RAD51D</i> K91fs*13 (VAF 78.1%) ^{1,2}
	69	Stage IIIC ovarian cancer, high grade serous	Nil	<i>RAD51D</i> : c.270_271dup (p.Lys91Ilefs*13)	<i>RAD51D</i> K91fs*13 (VAF 89.6%) ^{1,2}
	47	Stage III ovarian cancer, high grade serous	Unknown cancer (paternal uncle, aunt and cousin)	<i>RAD51D</i> : c.556C>T (p.Arg186*)	<i>RAD51D</i> : c.556C>T (p.Arg186*) ² (VAF not reported)
<i>MSH2</i> n=1 (8.3%)	34	Stage IC1 ovarian cancer, Endometrioid	Nil	<i>MSH2</i> : Deletion (Exon 3)	Declined
<i>TP53</i> n=1 (8.3%)	74	Stage IIIC primary peritoneal cancer, high grade serous	Nil	<i>TP53</i> : c.524G>A (p.Arg175His)	<i>TP53</i> (VAF 40.6%) ²

Table S4. List of VUS identified.

S/N	Gene	Family history of cancer	Age (in years)	Cancer stage and subtype	Variant
1	APC	nil	34	Stage 1C1 endometrioid ovarian cancer	c.4492G>A (p.Asp1498Asn)
2	ATM	nil	62	Stage IA clear cell ovarian cancer	c.3106T>C (p.Phe1036Leu)
		nil	47	Stage IC3 clear cell ovarian cancer	c.4618G>C (p.Asp1540His)
3	BARD1	nil	57	Stage IIIC2 ovarian cancer, high grade serous	c.569A>T (p.Asp190Val)
		nil	42	Stage IIA endometrioid ovarian cancer	c.2183C>T (p.Ser728Phe)
4	BRIP1	Colorectal cancer (mother)	62	Stage IIA clear cell ovarian cancer	c.2183C>T (p.Ser728Phe)
5	CDKN2A	Breast cancer (sister)	62	Stage IC1 endometrioid ovarian cancer and stage IA endometrial cancer	c.223C>T (p.Pro75Ser)
6	PALB2	nil	62	Stage IA clear cell ovarian cancer	c.2448C>G (p.Phe816Leu)
7	POLD1	nil	68	Stage IIIC ovarian cancer, high grade serous	c.50G>A (p.Arg17Gln)
8	POLE	nil	62	Stage IA clear cell ovarian cancer	c.548C>T (p.Ala183Val)
9	RET	Urinary bladder cancer (father)	50	Stage IIIA clear cell ovarian cancer	c.2488G>A (p.Gly830Arg)
		nil	46	Stage IIIC ovarian cancer, high grade serous	c.2488G>A (p.Gly830Arg)
10	SDHA	Colorectal cancer (mother)	62	Stage IIA ovarian clear cell cancer	c.17G>T (p.Gly6Val)
11	SDHB	nil	46	Stage IIIC ovarian cancer, high grade serous	c.304G>A (p.Ala102Thr)
12	STK11	nil	68	Stage IIIC ovarian cancer, high grade serous	c.1168G>A (p.Val390Met)

Table S5. Summary of 88 patients with germline testing, somatic testing, and maintenance therapy.

S/N	Age at diagnosis (years)	Cancer stage and subtype	Somatic Testing	Germline Testing	Maintenance therapy with PARP inhibitor
Germline and somatic testing with concordant results					
1	59	Stage IIIC fallopian tube cancer, high grade serous	BRCA1	BRCA1	Olaparib
2	70	Stage IIIC ovarian cancer, high grade serous	BRCA2	BRCA2	Olaparib
3	53	Stage IIIC fallopian tube cancer, high grade serous	RAD51C	RAD51C	Niraparib
4	72	Stage IVA ovarian cancer, high grade serous	RAD51C	RAD51C	Olaparib
5	57	Stage IVA ovarian cancer, high grade serous	RAD51D	RAD51D	Olaparib
6	55	Stage IIIC ovarian cancer, high grade serous	RAD51D	RAD51D	Niraparib
7	55	Stage IIIC2 ovarian cancer, high grade serous	RAD51D	RAD51D	Olaparib
8	74	Stage IC1 clear cell ovarian cancer	TP53	TP53	Niraparib
9	50	Stage IIA ovarian clear cell cancer	HR proficient	VUS BRIP1, SDHA	
10	61	Stage IIIA clear cell ovarian cancer	HR proficient	VUS RET	
11	51	Stage IVA ovarian cancer, high grade serous	HR proficient	Negative	
12	50	Stage IIIC primary peritoneal cancer, high grade serous	HR proficient	Negative	
13	62	Stage IIIC clear cell ovarian cancer	HR proficient	Negative	
14	65	Stage IV ovarian cancer, high grade serous	HR proficient	Negative	
15	62	Stage IIB clear cell ovarian cancer	HR proficient	Negative	
16	60	Stage IIIC primary peritoneal cancer, high grade serous	HR proficient	Negative	
17	66	Stage IVA primary peritoneal cancer, high grade serous	HR proficient	Negative	
18	62	Stage IIIC ovarian cancer, high grade serous	HR proficient	Negative	

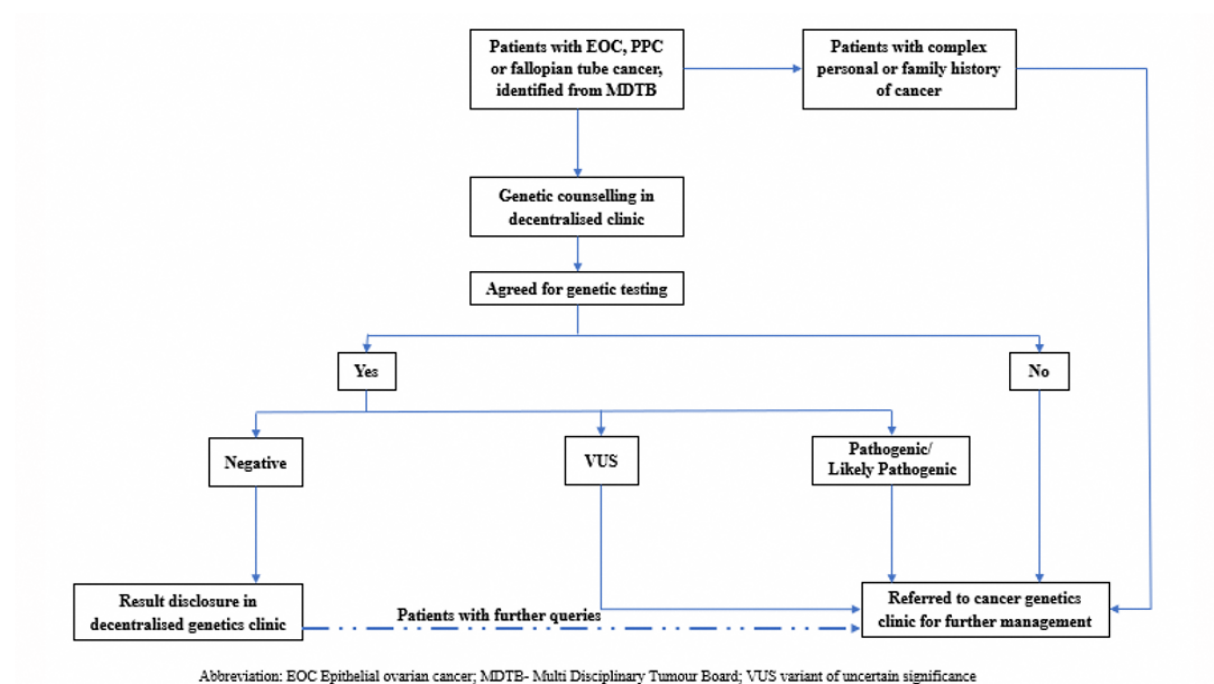
19	64	Stage IC clear cell ovarian cancer	HR proficient	Negative	
20	35	Stage IV ovarian cancer, high grade serous (deceased)	HR proficient	Negative	
Germline and somatic testing with discordant results					
21	68	Stage IIIC ovarian cancer, high grade serous	HR deficient	VUS POLD1, STK11	Olaparib
22	67	Stage IIIC2 ovarian cancer, high grade serous	HR deficient	VUS BARD1	Olaparib
23	48	Stage IIB ovarian cancer, high grade serous	HR deficient	Negative	Olaparib
24	71	Stage IA ovarian carcinosarcoma	BRCA2	Negative	Olaparib
25	71	Stage IIIC fallopian tube cancer, high grade serous	TP53	Negative	
26	62	Stage IVB fallopian tube cancer, high grade serous	HR deficient	Negative	Niraparib
27	47	Stage IIIC fallopian tube cancer, high grade serous	HR deficient	Negative	Bevacizumab
28	65	Stage IVB fallopian tube cancer, high grade serous	HR deficient	Negative	Niraparib
29	75	Stage III fallopian tube cancer, high grade serous	HR deficient	Negative	Declined Olaparib
30	60	Stage IIIC primary peritoneal cancer, high grade serous	HR deficient	Negative	Declined Niraparib
31	63	Stage IVB ovarian cancer, high grade serous	HR deficient	Negative	Olaparib + Bevacizumab
32	41	Stage IVB ovarian cancer, high grade serous	HR deficient	Negative	Niraparib
33	71	Stage IIIC ovarian cancer, high grade serous	HR deficient	Negative	Olaparib + Bevacizumab
34	42	Stage IC clear cell ovarian cancer	HR deficient	Negative	
35	60	Stage IIIC endometrioid/neuroendocrine carcinoma of ovary	HR deficient	Negative	
36	47	Stage IVA ovarian cancer, high grade serous	HR deficient	Negative	
Underwent germline testing alone					
37	43	Stage IIIC ovarian cancer, high grade serous	Declined	BRCA1	Olaparib
38	50	Stage IIIA1 fallopian tube cancer, high grade serous	Declined	BRCA1	Olaparib
39	34	Stage IC1 endometrioid ovarian cancer with clear cell component	Declined	MSH2	
40	63	Stage IVA ovarian cancer, high grade serous	Insufficient tissue	BRCA2	Olaparib

41	42	Stage IIA endometrioid ovarian cancer	Declined	VUS BARD1	
42	46	Stage IIIC ovarian cancer, high grade serous	Declined	VUS RET, SDHB	
43	58	Stage IC3 clear cell ovarian cancer	Declined	VUS ATM	
44	50	Stage IA clear cell ovarian cancer	Declined	VUS ATM, PALB2, POLE	
45	74	Stage III ovarian cancer, high grade serous	Declined	VUS TP53	
46	51	Stage IA mucinous ovarian cancer	Declined	VUS APC	
47	71	Stage IC1 endometrioid ovarian cancer and stage IA grade 1 endometrial cancer	Declined	VUS CDKN2A	
48	42	Stage IC1 clear cell ovarian cancer	Declined	Negative	
49	82	Stage IVA fallopian tube cancer, high grade serous	Declined	Negative	
50	24	Stage IA mucinous ovarian cancer	Declined	Negative	
51	47	Stage IC2 ovarian cancer, high grade serous	Declined	Negative	
52	45	Stage IC endometrioid ovarian cancer	Declined	Negative	
Underwent somatic testing alone					
53	60	Stage IIIC ovarian cancer, high grade serous	BRCA1	Declined	Olaparib
54	62	Stage IV ovarian cancer, high grade serous	BRCA1	Declined	Bevacizumab
55	65	Stage IIIC ovarian cancer, high grade serous	HR deficient	Deceased	Deceased
56	76	Stage IIIC primary peritoneal cancer, high grade serous	HR proficient	Declined	
57	80	Stage IIIC ovarian cancer, high grade serous	HR proficient	Declined	
58	45	Stage IIIC ovarian cancer, high grade serous	HR proficient	Declined	
59	88	Stage IVB ovarian cancer, high grade serous	HR proficient	Declined	
60	76	Stage IIIC ovarian cancer, high grade serous	HR proficient	Declined	
61	84	Stage IIIC ovarian cancer, high grade serous	HR proficient	Declined	
62	48	Stage IVB primary peritoneal cancer, high grade serous	HR proficient	Declined	

63	82	Stage IIIC2 ovarian cancer, high grade serous	HR proficient	Declined	
64	58	Stage IVA ovarian cancer, high grade serous	Inconclusive	Declined	
65	64	Stage IIB fallopian tube cancer, high grade serous	HR deficient	Declined	
Declined both germline and somatic testing					
65	45	Stage IA clear cell ovarian cancer	Declined	Declined	
66	57	Stage IIIC fallopian tube cancer, high grade serous	Declined	Declined	
67	55	Stage IV ovarian cancer, high grade serous	Declined	Declined	
68	64	Stage IIB fallopian tube cancer, high grade serous	Declined	Declined	
69	64	Stage IV fallopian tube cancer, high grade serous	Declined	Declined	
70	68	Stage IC endometrioid ovarian cancer	Declined	Declined	
71	47	Stage IIA fallopian tube cancer, high grade serous	Declined	Declined	
72	69	Stage I endometrioid ovarian cancer	Declined	Declined	
73	78	Stage IA clear cell ovarian cancer	Declined	Declined	
74	54	Stage II endometrioid ovarian cancer	Declined	Declined	
75	73	Stage IA mucinous ovarian cancer	Declined	Declined	
77	44	Stage IC1 high grade endometrioid ovarian cancer	Declined	Declined	
78	67	Stage IC1 mucinous ovarian cancer	Declined	Declined	
79	58	Stage IC1 endometrioid ovarian cancer with Stage IC1 endometrial cancer	Declined	Declined	
80	72	Stage IC2 endometrioid ovarian cancer	Declined	Declined	
81	48	Stage IC1 mucinous ovarian cancer	Declined	Declined	
82	32	Stage IIIC clear cell ovarian cancer	Declined	Declined	
83	60	Stage IIIC endometrioid/neuroendocrine carcinoma of ovar	Declined	Declined	
84	69	Stage IC clear cell ovarian cancer	Declined	Declined	

85	51	Stage IC1 clear cell ovarian cancer	Declined	Declined	
86	44	Stage IC1 high grade endometrioid ovarian cancer	Declined	Declined	
87	62	Stage IIIC clear cell ovarian cancer	Declined	Declined	
88	73	Stage IVB ovarian cancer, high grade serous	Declined	Declined	

Figure S1. Workflow for decentralized gynaecology genetics clinic.



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