



Supporting Information

Supplementary results

**This appendix was part of the submitted manuscript and has been peer reviewed.
It is posted as supplied by the authors.**

Appendix to: Noguchi N, Marinovich ML, Wylie EJ, et al. Screening outcomes by risk factor and age: evidence from BreastScreen WA for discussions of risk-stratified population screening. *Med J Aust* 2021; doi: 10.5694/mja2.51216.

Table 1. Numbers of screening episodes per woman

Screen episodes	Women
Total number of women	323 082
1	76 848 (23.8%)
2	54 750 (17.0%)
3	47 184 (14.6%)
4	58 754 (18.2%)
5	71 748 (22.2%)
6 or more	13 798 (3.3%)

Table 2. Characteristics of screen-detected cancers*

Characteristic	
Pathological tumour size category	7024
pTis (ductal carcinoma in situ)	1551 (22.1%)
pT1a (≤ 5 mm)	502 (7.1%)
pT1b (> 5 mm, ≤ 10 mm)	1299 (18.5%)
pT1c (> 10 mm, ≤ 20 mm)	2313 (32.9%)
pT2 (> 20 mm, ≤ 50 mm)	1184 (16.9%)
pT3 (> 50 mm)	144 (2.1%)
Unknown	31 (0.4%)
Axillary nodal status (invasive cancer)	5472
Negative for metastasis	3731 (68.2%)
Positive for metastasis	1208 (22.1%)
Unknown	533 (9.7%)

The proportion of screen-detected small invasive cancers (< 15 mm) was 49% (478/980) in first screens and 61% (2707/4462) in subsequent screens.

* BreastScreen WA does not collect data on cancer characteristics (size, nodal status) for interval cancers because they are often diagnosed outside the program.

Table 3. Cancer detection rate (CDR) at screening by age group for risk factors (excludes initial screens)

Risk factor/Age group (years)	Yes			No			Difference in CDR (yes v no) (95% CI)
	Screens	Cancers	CDR (95% CI)	Screens	Cancers	CDR (95% CI)	
Personal history of breast cancer							
40–49	922	6	65 (29–145)	78958	282	36 (32–40)	29 (–23 to 81)
50–59	8688	67	77 (61–98)	343085	1590	46 (44–49)	31 (12–49)
60–69	16710	204	122 (107–140)	328517	2414	73 (71–76)	49 (32–66)
70 or more	10609	131	123 (104–146)	90147	1050	116 (110–124)	7 (–15 to 29)
Personal history of ovarian cancer							
40–49	238	0	0	79642	288	36 (32–41)	–36 (–1307 to 1234)
50–59	1490	6	40 (18–89)	350284	1651	47 (45–49)	–7 (–39 to 25)
60–69	2429	10	41 (22–76)	342796	2608	76 (73–79)	–35 (–61 to –9)
70 or more	840	4	48 (18–127)	99913	1177	118 (111–125)	–70 (–117 to –23)
Family history of breast cancer							
40–49	20840	87	42 (34–51)	59040	201	34 (30–39)	8 (–2 to 18)
50–59	70402	397	56 (51–62)	281373	1260	45 (42–47)	12 (6–18)
60–69	72424	641	89 (82–96)	272803	1977	72 (69–76)	16 (9–24)
70 or more	25294	373	147 (133–163)	75462	808	107 (100–115)	40 (24–57)
Dense breasts*							
40–49	18561	86	46 (38–57)	27829	78	28 (22–35)	18 (6–30)
50–59	56491	297	53 (47–59)	152678	580	38 (35–41)	15 (8–21)
60–69	36458	306	84 (75–94)	182695	1160	63 (60–67)	20 (10–30)
70 or more	6507	81	124 (100–155)	43748	376	86 (78–95)	39 (10–67)
Biopsy for benign disease							
40–49	11572	47	41 (31–54)	68308	241	35 (31–40)	5 (–7 to 18)
50–59	62218	377	61 (55–67)	289557	1280	44 (42–47)	16 (10–23)
60–69	69330	659	95 (88–103)	275897	1959	71 (68–74)	24 (16–32)
70 or more	21152	312	148 (132–165)	79604	869	109 (102–117)	38 (21–56)
Hormone replacement therapy in past 6 months							
40–49	4882	11	23 (12–41)	74993	277	37 (33–42)	–14 (–28 to 0)
50–59	52021	307	59 (53–66)	299707	1350	45 (43–48)	14 (7–21)
60–69	42710	416	97 (89–107)	302484	2201	73 (70–76)	25 (15–34)
70 or more	9056	131	145 (122–171)	91695	1049	114 (108–122)	30 (5–56)
Self-reported symptoms							
40–49	1230	18	146 (93–231)	78650	270	34 (30–39)	112 (45–179)
50–59	2833	90	318 (259–389)	348942	1567	45 (43–47)	273 (208–337)
60–69	2121	112	528 (441–632)	343106	2506	73 (70–76)	455 (360–550)
70 or more	853	93	1090 (900–1321)	99903	1088	109 (103–116)	981 (772–1191)

CI = confidence interval.

* Breast density was based on density classification during preceding screen (within 27 months).

Bold: Difference is significantly different to that for 40–49-year-old women in this category.

Table 4. Interval cancer rate (ICR), by age group for risk factors

Risk factor/Age group (years)	Yes			No			Difference in ICR (yes v no) (95% CI)
	Screens	Cancers	ICR (95% CI)	Screens	Cancers	ICR (95% CI)	
Personal history of ovarian cancer							
40–49	340	1	20.5 (2.9–145.4)	142359	283	10.4 (9.3–11.7)	10.1 (–30.1 to 50.3)
50–59	1646	1	4.6 (0.7–32.7)	422566	732	9.1 (8.5–9.8)	–4.5 (–13.6 to 4.6)
60–69	2473	1	3.2 (0.5–22.8)	353598	626	9.5 (8.8–10.3)	–6.3 (–12.6 to 0.1)
70 or more	860	0	0	102288	222	11.8 (9.3–11.7)	–11.8 (–52.0 to 28.4)
Family history of breast cancer							
40–49	31833	75	14.1 (11.2–17.7)	110867	209	9.6 (8.4–11.0)	4.5 (1.1–8.0)
50–59	79707	137	10.4 (8.8–12.3)	344506	596	8.9 (8.2–9.6)	1.6 (–0.3 to 3.5)
60–69	74366	123	10.3 (8.6–12.3)	281707	504	9.3 (8.5–10.1)	1.0 (–1.0 to 3.0)
70 or more	25836	43	10.1 (7.5–13.6)	77315	179	12.2 (10.5–14.1)	–2.1 (–5.6 to 1.4)
Dense breasts							
40–49	54929	166	15.9 (13.6–18.5)	75952	90	6.2 (5.1–7.6)	9.7 (6.9–12.4)
50–59	107399	324	15.8 (14.2–17.6)	285461	355	6.5 (5.9–7.2)	9.3 (7.4–11.1)
60–69	59217	217	19.4 (17.0–22.1)	266970	376	7.4 (6.7–8.2)	12.0 (9.3–14.7)
70 or more	13931	69	26.2 (20.7–33.2)	74830	137	9.6 (5.1–7.6)	16.6 (10.2–23.0)
Biopsy for benign disease							
40–49	17924	54	16.1 (12.4–21.1)	124776	230	9.7 (8.5–11.0)	6.5 (2.0–10.9)
50–59	71516	176	13.2 (11.4–15.3)	352697	557	8.3 (7.6–9.0)	5.0 (2.9–7.0)
60–69	71404	186	14.2 (12.3–16.4)	284669	441	8.3 (7.6–9.1)	6.0 (3.8–8.1)
70 or more	21718	75	19.0 (15.2–23.9)	81433	147	9.8 (8.3–11.5)	9.2 (4.6–13.8)
Hormone replacement therapy in past 6 months							
40–49	8045	12	7.8 (4.4–13.8)	134646	272	10.6 (9.4–12.0)	–2.8 (–7.4 to 1.8)
50–59	59875	142	12.4 (10.5–14.6)	364287	591	8.6 (7.9–9.3)	3.8 (1.7–6.0)
60–69	43994	143	17.2 (14.6–20.2)	312046	484	8.4 (7.6–9.1)	8.8 (5.9–11.7)
70 or more	9275	38	21.8 (15.9–30.0)	93871	184	10.7 (9.3–12.4)	11.1 (4.0–18.2)
Self-reported symptoms							
40–49	3226	16	25.8 (15.8–42.1)	139474	268	10.1 (9.0–11.4)	15.7 (3.0–28.4)
50–59	4041	26	34.2 (23.3–50.2)	420172	707	8.9 (8.2–9.6)	25.3 (12.2–38.5)
60–69	2273	20	48.0 (31.0–74.3)	353800	607	9.2 (8.5–10.0)	38.8 (17.8–59.8)
70 or more	915	10	60.1 (32.4–111.4)	102236	212	11.3 (9.9–12.9)	48.8 (11.6–85.9)

CI = confidence interval.

Bold: Difference is significantly different to that for 40–49-year-old women in this category.