

Supplemental Online Content

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eFigure 2. Tumor Size by Parity Group

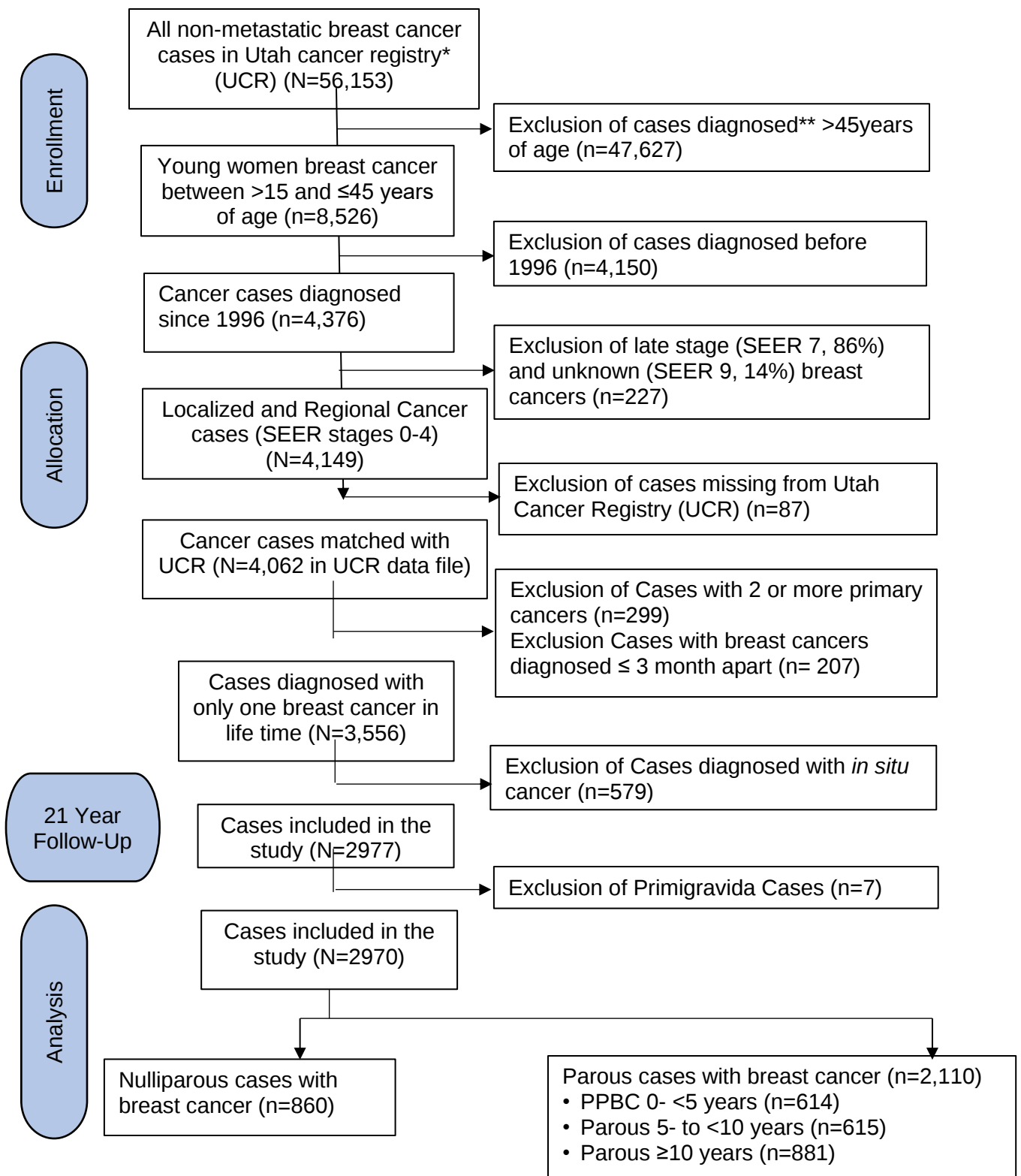
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This supplemental material has been provided by the authors to give readers additional information about their work.

eFigure 1. CONSORT Diagram of the Analytic Cohort

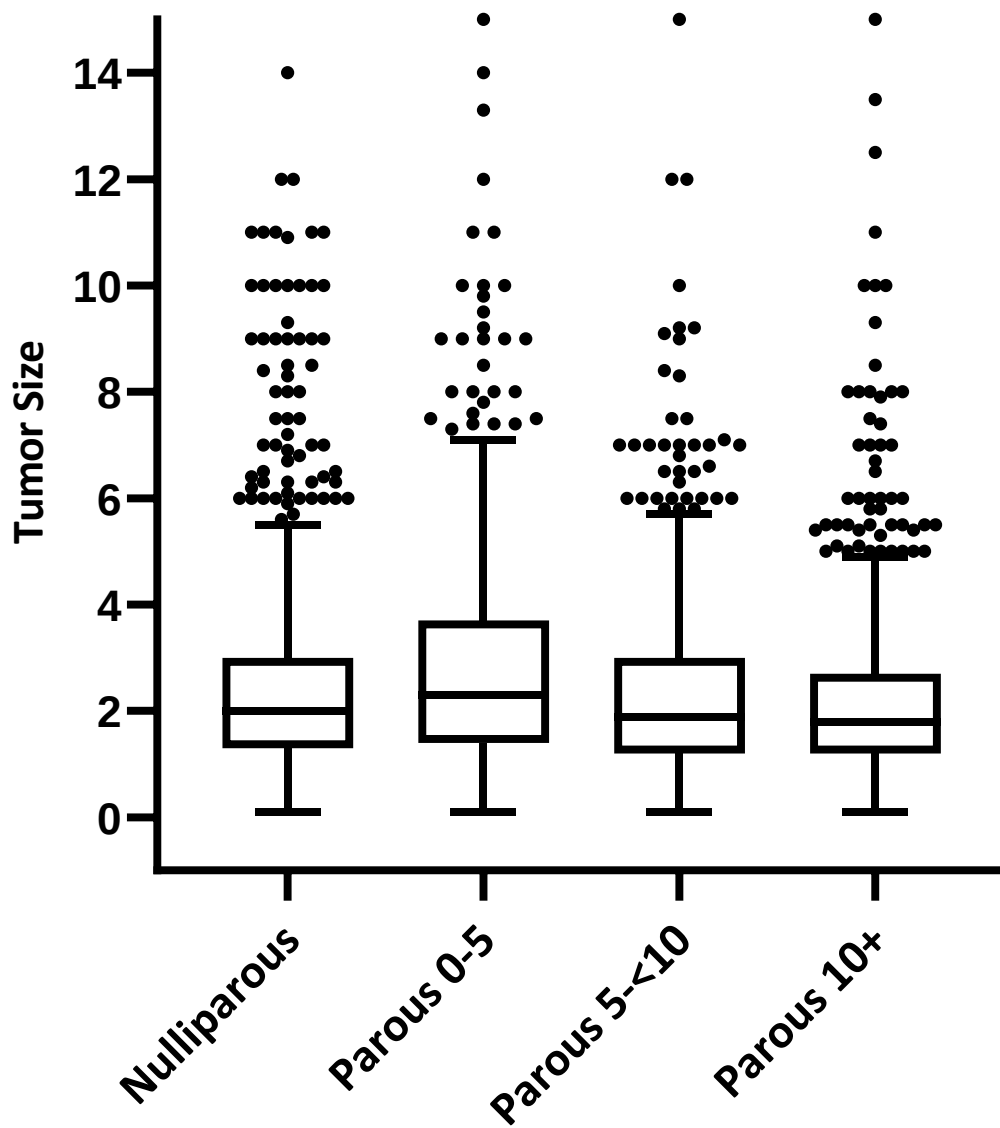


*Utah Cancer registry SEER DMS database – include SEER reportable cases, Utah resident at diagnosis, exclude cases only reported by VA hospital, exclude cases reported by other state registries, ambiguous diagnosis included

**2 additional cases < 15 years old excluded

This diagram depicts how cases from the Utah Population Database were selected for inclusion in our analytic cohort. In brief, non-metastatic, invasive breast cancer cases diagnosed between 01/01/1996 and 12/31/2017 were included in the cohort (N = 2970).

eFigure 2. Tumor Size by Parity Group



eTable 1. UPDB's Breast Cancer Cohort

	Nulliparous (N=860, 29.1%)		PPBC <5 years (N=614, 20.6%)		PPBC 5-<10 years (N=615, 20.7%)		PPBC ≥10 (N=881, 29.6%)	
	No. (%)		No. (%)		No. (%)		No. (%)	
Mean age at diagnosis (SD)	38.8 (5.7)		35.6 (5.0)		39.5 (4.1)		42.2 (2.7)	
Median age in PPBC <5 years	Age ≤ 36	Age > 36	Age ≤ 36	Age > 36	Age ≤36	Age > 36	Age ≤ 36	Age > 36
	(N=240)	(N=620)	(N=334)	(N=280)	(N=131)	(N=484)	(N=36)	(N=845)
Estrogen status								
ER+	169 (73.2)	473 (79.8)	223 (68.8)	214 (78.4)	94 (73.4)	373 (80)	27 (77.1)	635 (77.6)
ER-	62 (26.8)	120 (20.2)	101 (31.2)	59 (21.6)	34 (26.6)	93 (20)	8 (22.9)	183 (22.4)
Missing	14	29	10	7	3	18	1	27
Lymph Node								
Yes	108 (47)	275 (45.6)	206 (62.6)	154 (57.5)	59 (46.5)	198 (42)	16 (45.7)	335 (40.7)
No	122 (53)	328 (54.4)	123 (37.4)	114 (42.5)	68 (53.5)	273 (58)	19 (54.3)	488 (59.3)
No Nodes examined	15	19	5	12	4	13	1	22
Tumor size								
0.1—≤2.0 cm	112 (49.1)	331 (55.5)	126 (39.5)	133 (50.2)	72 (58.1)	248 (53)	19 (54.3)	475 (58.6)
>2.0—≤5.0 cm	88 (38.6)	217 (36.4)	145 (45.5)	94 (35.5)	37 (29.8)	183 (39.1)	14 (40)	292 (36)
>5.0 cm	28 (12.3)	48 (8.1)	48 (15)	38 (14.3)	15 (12.1)	37 (7.9)	2 (5.7)	43 (5.3)
Missing	12	24	15	15	7	16	1	35
Stage								
I	84 (40.2)	246 (49.4)	71 (26.7)	87 (36.9)	52 (47.7)	194 (46.4)	16 (57.1)	375 (53)
II	93 (44.5)	203 (40.8)	136 (51.1)	105 (44.5)	33 (30.3)	174 (41.6)	9 (32.1)	261 (36.9)
III	32 (15.3)	49 (9.8)	59 (22.2)	44 (18.6)	24 (22)	50 (12)	3 (10.7)	71 (10)
Missing	36	124	68	44	22	66	8	138
Biologic subtype								

Luminal A (ER+, PR+/-, Her2 neu-)	52 (51)	159 (71)	83 (53.5)	91 (65)	35 (61.4)	161 (72.2)	13 (76.5)	251 (68.2)
Luminal B (ER+, PR+/-, Her2 neu+)	27 (26.5)	34 (15.2)	37 (23.9)	25 (17.9)	10 (17.5)	26 (11.7)	2 (11.8)	50 (13.6)
Her2 neu positive (ER-, PR-)	10 (9.8)	9 (4)	13 (8.4)	8 (5.7)	6 (10.5)	14 (6.3)	0 (0)	18 (4.9)
Triple negative	13 (12.7)	22 (9.8)	22 (14.2)	16 (11.4)	6 (10.5)	22 (9.9)	2 (11.8)	49 (13.3)
Unknown Her2 neu	136	384	175	139	73	258	19	474
Unknown/Other	2	12	4	1	1	3	0	3
Year of Diagnosis								
1996-1998	23 (9.4)	71 (11.4)	31 (9.3)	18 (6.4)	15 (11.5)	45 (9.3)	4 (11.1)	96 (11.4)
1999-2004	46 (18.8)	162 (26.1)	61 (18.3)	58 (20.7)	28 (21.4)	92 (19)	11 (30.6)	210 (24.9)
2005-2017	176 (71.8)	389 (62.5)	242 (72.5)	204 (72.9)	88 (67.2)	347 (71.7)	21 (58.3)	539 (63.8)
Patients with Metastasis	33 (13.5)	67 (10.8)	78 (23.4)	40 (14.3)	15 (11.5)	65 (13.4)	7 (19.4)	93 (11)
Note: Abbreviations: PPBC, Postpartum Breast Cancer; No., number of patients per group; ER, estrogen receptor; PR, progesterone receptor;								

eTable 2. Frequency Distribution of Known First Site of Metastasis by Estrogen Receptor Status

Known First Site of Metastasis	ER+ (n=2203)					ER- (n=658)				
	Total n of Metastasis	Nulliparous	PPBC 0-5	Parous 5-<10	Parous ≥10	Total n of Metastasis	Nulliparous	PPBC 0-5	Parous 5-<10	Parous ≥10
Bone	130 (46%) ^c	36 (28%) ^e	31 (24%) ^e	30 (23%) ^e	33 (25%) ^e	22 (25%) ^d	3 (14%) ^e	7 (32%) ^e	5 (23%) ^e	7 (32%) ^e
Liver	108 (38%) ^c	28 (26%) ^e	38 (35%) ^e	18 (17%) ^e	24 (22%) ^e	33 (37.5%) ^d	8 (24%) ^e	12 (36%) ^e	4 (12%) ^e	9 (28%) ^e
Brain + Nervous System	32 (11%) ^c	11 (34%) ^e	12 (38%) ^e	7 (22%) ^e	2 (6%) ^e	29 (33%) ^d	3 (10%) ^e	10 (34%) ^e	6 (21%) ^e	10 (35%) ^e
Lung	12 (4%) ^c	2 (17%) ^e	2 (17%) ^e	3 (25%) ^e	5 (42%) ^e	3 (3%) ^d	1 (33%) ^e	0	0	2 (67%) ^e
Kidney	0	0	0	0	0	1 (1%) ^d	0 (14%) ^e	0	0	1 (100%) ^e
Total	282 (12.8%) ^a	77 (27%) ^e	83 (29%) ^e	58 (21%) ^e	64 (23%) ^e	88 (13.4%) ^b	15 (17%) ^e	29 (33%) ^e	15 (17%) ^e	29 (33%) ^e
a. Percentages based on total number of participants with ER+ (n=2203) b. Percentages based on total number of participants with ER- (n=658) c. Percentages based on total number of participants with known first site of metastasis in ER+ group (n=282) d. Percentages based on total number of participants with known first site of metastasis in ER- group (n=88) e. Percentages on number of participants with known first site of metastasis by estrogen receptor status and site of metastasis (row percentage).										

eTable 3. Multivariate Cox Proportional Regression Model for Time Since Recent Childbirth in Association with Distant Metastasis and Breast Cancer–Specific Mortality (Entire Cohort: Stage I, II, III, or Unknown)

		Distant–Metastasis				Breast Cancer-Specific Mortality			
Variable	Levels	Hazard Ratio	95% HR CI	P value	Overall P	Hazard Ratio	95% HR CI	P value	Overall P
Time since recent childbirth	Nulliparous	Reference			0.02	Reference			0.039
	PPBC <5	1.5	1.2-2.0	0.002		1.5	1.1-2.1	0.004	
	Parous 5 to <10	1.2	0.9-1.6	0.25		1.3	0.9-1.7	0.110	
	Parous ≥10	1.1	0.8-1.5	0.57		1.2	0.9-1.6	0.315	
Diagnosis Year	1996-1998	Reference			<.001	Reference			<.001
	1999-2004	0.8	0.6-1.1	0.15		0.8	0.6-1.1	0.109	
	2005-2017	0.5	0.4-0.7	<.001		0.4	0.3-0.6	<.001	
Diagnosis Age		1	0.96-1.0	0.06	0.06	1.0	0.97-1.0	0.644	0.64
AJCC Stage	I	Reference			<.001	Reference			<.001
	II	2.6	1.9-3.6	<.001		2.6	1.9-3.7	<.001	
	III	5.9	4.1-8.5	<.001		7.3	4.9-10.7	<.001	
	Unknown	4.5	3.3-6.2	<.001		5.1	3.7-7.1	<.001	
ER	Positive/Elevated	Reference			0.88	Reference			0.001
	Negative/Normal	1	0.8-1.2	0.8416		1.6	1.2-2.0	<.001	
	Unknown	0.9	0.5-1.5	0.6236		0.96	0.6-1.6	0.888	