

Table 1. One-year case mortality rate for breast cancer in the NWFD by stage and period of diagnosis (%)

Stage	2008–2012	2013–2017	2018–2022
All stages	9.42	7.64	6.12
I	1.01	1.09	1.24
II	3.45	3.28	2.90
III	14.35	10.84	9.10
IV	48.48	42.23	33.71
Unknown	22.50	26.00	34.44

Table 2. Key epidemiological indicators of breast cancer by NWFD region and period (2008–2022)

Region	Indicator	All stages			I			II			III			IV			Unknown		
		2008–2012	2013–2017	2018–2022	2008–2012	2013–2017	2018–2022	2008–2012	2013–2017	2018–2022	2008–2012	2013–2017	2018–2022	2008–2012	2013–2017	2018–2022	2008–2012	2013–2017	2018–2022
NWFD	Cases, n	22520	27898	30167	4455	7442	9340	9973	11475	12624	6105	6612	5685	1580	2111	2423	407	258	95
	ASIR	48.39	57.11	59.44	9.97	15.3	18.4	21.53	23.9	25.29	12.94	13.44	11.11	3.27	4.06	4.54	0.76	0.5	0.26
	Deaths, n	9678	9565	8760	566	580	483	3083	2666	2229	4124	3936	3163	1588	2207	2822	318	176	63
	ASMR	18.16	16.68	14.22	1.14	1	0.77	5.82	4.64	3.6	7.72	6.93	5.07	3.01	3.9	4.72	0.5	0.23	0.08
	M:I Ratio	0.43	0.34	0.29	0.13	0.08	0.05	0.31	0.23	0.18	0.68	0.6	0.56	1.01	1.05	1.16	0.78	0.68	0.66
Saint Petersburg	Cases, n	12140	15492	17325	2417	4179	5465	5153	6123	7051	3685	3805	3277	624	1192	1451	261	193	81
	ASIR	51.02	59.75	61.96	10.66	16.17	19.78	21.65	24.11	25.68	15.27	14.58	11.49	2.63	4.41	4.84	0.96	0.72	0.44
	Deaths, n	5789	5719	5262	334	340	324	1740	1511	1306	2825	2432	1878	676	1291	1699	213	145	55
	ASMR	20.59	18.38	14.86	1.32	1.09	0.94	6.16	4.78	3.65	9.99	7.87	5.12	2.5	4.32	5.05	0.65	0.36	0.14
	M:I Ratio	0.48	0.37	0.3	0.14	0.08	0.06	0.34	0.25	0.19	0.77	0.64	0.57	1.08	1.08	1.17	0.82	0.75	0.68
Arkhangelsk Reg. & NAO	Cases, n	2146	2500	2657	301	540	739	1034	1109	1142	580	640	550	200	191	220	31	20	6
	ASIR	39.8	46.9	50.93	6.05	10.15	14.39	19.03	21.2	22.32	11.1	12.24	10.88	3.85	3.82	4.59	0.78	0.92	0.28
	Deaths, n	722	740	710	23	32	12	224	191	162	290	316	290	168	175	239	18	26	8
	ASMR	12.32	11.97	11.73	0.39	0.49	0.18	3.81	3.19	2.7	4.98	5.26	4.63	3.2	3.03	4.48	0.36	0.78	0.15
	M:I Ratio	0.34	0.3	0.27	0.08	0.06	0.02	0.22	0.17	0.14	0.5	0.49	0.53	0.84	0.92	1.09	0.58	1.3	1.33
Kaliningrad Reg.	Cases, n	2081	2555	2888	228	402	707	1050	1322	1395	492	620	579	247	197	203	64	14	4
	ASIR	50.1	58.6	61.43	6	9.64	15.19	26.14	31.09	30.19	11.93	13.8	12.52	5.88	4.89	4.89	3.24	1.08	0.36
	Deaths, n	923	850	769	32	44	31	326	271	201	309	342	320	209	192	218	46	1	0
	ASMR	19.8	16.89	13.96	0.74	0.84	0.5	7.33	5.52	3.54	6.74	6.91	6.13	4.61	4.07	3.99	1.47	0.14	0
	M:I Ratio	0.44	0.33	0.27	0.14	0.11	0.04	0.31	0.2	0.14	0.63	0.55	0.55	0.85	0.97	1.07	0.72	0.07	0
Murmansk Reg.	Cases, n	1831	1947	1960	562	674	755	824	742	787	283	370	268	156	157	148	6	4	2
	ASIR	55.65	59.87	61.88	17.9	21.29	23.43	25.26	23.46	25.68	9.24	11.36	9.18	5.21	5.42	5.13	1.03	0.49	0.16
	Deaths, n	533	565	508	50	33	30	211	174	152	142	186	158	128	166	167	2	5	0
	ASMR	15.29	15.82	14.47	1.58	0.99	0.77	6.08	4.93	4.69	4.05	5.22	4.48	4.13	5.49	5.21	0.35	0.53	0
	M:I Ratio	0.29	0.29	0.26	0.09	0.05	0.04	0.26	0.23	0.19	0.5	0.5	0.59	0.82	1.06	1.13	0.33	1.25	0
Pskov Reg.	Cases, n	1422	1634	1636	193	328	327	677	757	823	411	417	350	140	131	136	1	1	0
	ASIR	43.4	49.83	51.45	6.54	10.71	10.44	21.17	23.12	26.56	13.61	13.43	11.3	4.88	4.38	4.92	0.08	0.13	0
	Deaths, n	628	612	526	29	18	13	205	187	154	258	262	212	135	144	147	1	1	0
	ASMR	16.34	15.31	13.77	0.8	0.43	0.33	5.18	4.47	3.79	7.2	6.95	5.8	4.13	4.01	4.41	0.1	0.17	0
	M:I Ratio	0.44	0.37	0.32	0.15	0.05	0.04	0.3	0.25	0.19	0.63	0.63	0.61	0.96	1.1	1.08	1	1	0
Republic of Karelia	Cases, n	1336	1671	1742	329	514	600	558	691	707	336	360	319	104	105	116	9	1	0
	ASIR	46.2	56.2	61.8	12.1	18.37	21.78	19.91	23.93	25.32	11.42	12.2	12.12	4.3	3.69	4.66	0.98	0.08	0
	Deaths, n	518	536	460	49	40	48	168	171	120	193	196	132	104	125	160	4	3	0
	ASMR	15.44	15.14	13.64	1.65	1.16	1.3	4.72	4.92	3.26	5.93	5.68	4.26	3.7	4.25	5.24	0.24	0.24	0
	M:I Ratio	0.39	0.32	0.26	0.15	0.08	0.08	0.3	0.25	0.17	0.57	0.54	0.41	1	1.19	1.38	0.44	3	0
Republic of Komi	Cases, n	1564	2099	1959	425	805	747	677	731	719	318	400	342	109	138	149	35	25	2
	ASIR	43.63	58.4	55.76	11.98	22.91	20.91	19.37	20.74	21.53	9.24	11.31	10.18	3.47	4.21	4.76	1.82	2.32	0.24
	Deaths, n	547	537	489	47	71	33	186	146	95	182	191	163	108	123	189	23	6	8
	ASMR	14.37	13.87	12.17	1.32	1.84	0.85	5	3.77	2.36	5.03	5.05	4.24	3.03	3.6	4.98	1.11	0.23	0.99
	M:I Ratio	0.35	0.26	0.25	0.11	0.09	0.04	0.27	0.2	0.13	0.57	0.48	0.48	0.99	0.89	1.27	0.66	0.24	4

Abbreviations: ASIR, age-standardized incidence rate (per 100,000 female population, Segi 1960 world standard); ASMR, age-standardized mortality rate (per 100,000 female population, Segi 1960 world standard); M:I Ratio, mortality-to-incidence ratio.

Table 3. Five-year relative survival of breast cancer patients by NWFD region and period of diagnosis, % (95 % CI)

Region	Stage	2008–2012	2013–2017	2018–2022
NWFD	All stages	71.0 (70.3-71.7)	76.8 (76.2-77.5)	79.1 (78.4-79.8)
	I	98.1 (97.0-99.2)	99.0 (98.2-99.9)	98.2 (97.3-99.1)
	II	82.8 (81.8-83.9)	86.8 (85.9-87.8)	86.5 (85.5-87.5)
	III	50.4 (49.0-51.9)	58.3 (57.0-59.7)	60.0 (58.3-61.8)
	IV	17.0 (15.1-19.1)	16.6 (14.9-18.4)	22.9 (20.8-25.1)
Saint Petersburg	All stages	68.4 (67.3-69.4)	74.1 (73.2-75.1)	74.7 (73.6-75.7)
	I	96.2 (94.6-97.9)	97.5 (96.2-98.8)	94.9 (93.4-96.4)
	II	81.0 (79.5-82.6)	84.7 (83.3-86.0)	82.3 (80.7-83.9)
	III	47.2 (45.4-49.2)	56.9 (55.0-58.8)	57.2 (54.7-59.7)
	IV	20.6 (17.5-24.3)	19.6 (17.2-22.2)	23.6 (20.9-26.7)
Arkhangelsk Reg. & NAO	All stages	74.3 (72.1-76.6)	79.1 (77.1-81.1)	84.2 (82.3-86.2)
	I	102.1 (99.0-105.4)	99.2 (96.3-102.2)	103.0 (100.6-105.5)
	II	86.9 (84.1-89.8)	90.8 (88.3-93.4)	93.7 (91.0-96.4)
	III	59.6 (55.3-64.2)	63.0 (58.9-67.3)	64.7 (60.0-69.7)
	IV	15.9 (11.3-22.4)	14.2 (9.8-20.6)	23.2 (17.6-30.4)
Kaliningrad Reg.	All stages	69.0 (66.8-71.4)	78.0 (76.1-80.0)	83.4 (81.5-85.4)
	I	96.0 (91.4-100.9)	101.7 (99.0-104.5)	102.0 (99.6-104.5)
	II	84.1 (81.4-87.0)	89.4 (87.0-91.8)	92.2 (89.7-94.7)
	III	54.9 (50.1-60.0)	59.0 (54.8-63.6)	62.3 (57.5-67.5)
	IV	16.1 (11.8-21.9)	11.0 (7.2-16.7)	18.9 (13.4-26.8)
Murmansk Reg.	All stages	77.7 (75.4-80.0)	81.5 (79.2-83.7)	85.5 (83.3-87.9)
	I	98.7 (96.1-101.4)	103.5 (101.1-105.8)	101.5 (98.8-104.3)
	II	83.3 (80.1-86.6)	85.3 (81.9-88.8)	88.3 (84.9-91.8)
	III	51.8 (45.8-58.7)	61.7 (56.2-67.8)	65.0 (58.4-72.5)
	IV	16.9 (11.6-24.5)	14.1 (9.1-21.7)	24.8 (16.9-36.4)
Pskov Reg.	All stages	68.9 (66.1-71.9)	75.6 (73.1-78.3)	79.2 (76.5-82.0)
	I	99.2 (94.0-104.6)	100.1 (96.3-104.1)	102.5 (98.4-106.7)
	II	84.2 (80.5-88.2)	87.7 (84.4-91.2)	89.0 (85.5-92.7)
	III	48.0 (42.9-53.7)	54.2 (49.0-59.8)	55.8 (49.6-62.7)
	IV	13.8 (8.8-21.7)	12.5 (7.6-20.5)	24.4 (17.2-34.7)
Republic of Karelia	All stages	75.7 (72.9-78.5)	82.2 (79.8-84.6)	84.5 (81.9-87.1)
	I	101.1 (97.7-104.5)	101.2 (98.2-104.2)	101.8 (98.8-104.8)
	II	85.2 (81.2-89.3)	90.0 (86.7-93.5)	87.7 (83.8-91.8)
	III	54.7 (49.1-61.0)	60.5 (55.0-66.5)	69.7 (63.2-76.7)
	IV	11.9 (6.9-20.5)	12.1 (7.0-20.8)	18.9 (12.3-29.0)
Republic of Komi	All stages	76.0 (73.5-78.6)	81.9 (79.8-84.0)	80.2 (77.8-82.8)
	I	100.4 (97.4-103.5)	98.5 (96.2-101.0)	97.6 (94.6-100.7)
	II	82.2 (78.7-85.8)	89.2 (86.1-92.6)	87.1 (83.4-91.0)
	III	55.9 (50.1-62.4)	60.3 (55.1-66.0)	57.4 (51.2-64.3)
	IV	10.0 (5.6-17.7)	12.5 (7.8-20.1)	17.6 (11.5-26.9)