

1 **Disparities in cervical cancer survival in the United States by race and stage at**
2 **diagnosis: an analysis of 138,883 women diagnosed between 2001 and 2014**
3 **(CONCORD-3)**

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20 **Disclaimer:** The findings and conclusions in this report are those of the authors and
21 do not necessarily represent the official position of the Centers for Disease Control
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23 **Abstract**

24 **Objective**

25 During 2000-2014, age-standardized five-year net survival for cervical cancer was 63-64% in the
26 United States. Using data from CONCORD-3, we analyzed cervical cancer survival trends by race,
27 stage and period of diagnosis.

28 **Methods**

29 Data from 41 state-wide population-based cancer registries on 138,883 women diagnosed with
30 cervical cancer during 2001-2014 were available. Vital status was followed up until December 31,
31 2014. We estimated age-standardized five-year net survival, by race (Black or White), stage and
32 calendar period of diagnosis (2001-2003, 2004-2008, 2009-2014) in each state, and for all
33 participating states combined.

34 **Results**

35 White women were most commonly diagnosed with localized tumors (45-50%). However, for Black
36 women, localized tumors were the most common stage (43.0%) only during 2001-2003. A smaller
37 proportion of Black women received cancer-directed surgery than White women.

38 For all stages combined, five-year survival decreased between 2001-2003 and 2009-2014 for both
39 White (64.7% to 63.0%) and Black (56.7% to 55.8%) women. For localized and regional tumors,
40 survival increased over the same period for both White (by 2-3%) and Black women (by 5%). Survival
41 did not change for Black women diagnosed with distant tumors but increased by around 2% for White
42 women.

43 **Conclusions**

44 Despite similar screening coverage for both Black and White women and improvements in stage-
45 specific survival, Black women still have poorer survival than White women. This may be partially
46 explained by inequities in access to optimal treatment. The results from this study highlight the
47 continuing need to address the disparity in cervical cancer survival between White and Black women
48 in the United States.

49 **Keywords:** cervical cancer, survival, inequalities, cancer stage, race

50 **Introduction**

51 Cervical cancer incidence and mortality have declined steadily over the past few
52 decades due to the introduction of and improvements in routine screening programs
53 in the United States¹. During 1999-2015, age-standardized annual incidence rates of
54 invasive cervical cancer decreased on average by 1.6% per year, though the speed
55 of decline varied by age, race/ethnic group and geographical region. The largest
56 decline was for women aged 20-24 years, while incidence was stable for women
57 aged 35-39 years¹. In 2017, Black women had one of the highest annual incidence
58 rates of cervical cancer, with 8.3 new cases per 100,000 women, despite
59 experiencing the largest decline in incidence during 1999-2015. The annual
60 incidence rate for White women was 7.3 per 100,000 women^{1, 2}.

61 The CONCORD program established global surveillance of cancer survival trends in
62 2015³. The third cycle of the CONCORD program included data for more than 37.5
63 million cancer patients diagnosed during 2000-2014 in the populations covered by
64 322 population-based cancer registries from 71 countries worldwide. CONCORD-3
65 revealed wide international variations in age-standardized 5-year net survival from
66 cervical cancer, ranging from around 50% to 70% for women diagnosed during
67 2010-2014. In the United States, 5-year survival declined slightly over time from
68 64.3% (95% CI: 63.7%-64.8%) in 2000-2004 to 62.6% (95% CI: 62.0%-63.1%) in
69 2010-2014. Similar patterns in survival were seen in other high-income countries
70 with intensive screening programs. Achieving a high proportion of women screened
71 does not always result in improved survival at the population level. Slower-growing
72 tumors, which may have higher survival than fast-growing tumors, are more easily
73 detected during screening. Thus, through the treatment and surgical removal of
74 these curable, often pre-invasive tumors, countries with intensive screening

75 programs can report higher proportions of women with more aggressive disease that
76 is generally not detected through screening⁴. In addition to including women who
77 have tumors that are more difficult to detect during a preclinical phase due to a faster
78 growth rate, the cancer patient population in countries with established screening
79 programs can also include women who have never been screened due to various
80 factors and those who have been screened but did not receive the appropriate
81 follow-up after screening. Therefore, in countries with established screening
82 programs, it is not surprising to see a fall in the incidence of invasive cervical cancer,
83 increasing proportions of regional and distant-stage tumors that are more difficult to
84 treat, and decreasing survival for all stages combined.

85 The United States Preventive Services Task Force (USPSTF) recommends routine
86 cervical cancer screening for women aged 21-65 years. There has been a shift in
87 cervical cancer screening techniques from cytology-based screening alone to the
88 inclusion of HPV-based screening tests over recent years. The USPSTF
89 recommends either cervical cytology screening alone every 3 years, primary high-
90 risk HPV testing every 5 years, or co-testing with cervical cytology and primary high-
91 risk HPV testing every 5 years for women aged 30-65 years. For women aged 21-29
92 years, only cervical cytology screening every 3 years is recommended, due to the
93 high prevalence of HPV infection in this age group⁵.

94 In the United States, in 2015, 83% of women aged 21-65 years reported having had
95 a Pap test within the past 3 years or a Pap test with HPV testing within the past 5
96 years, which is below the Healthy People 2020 target of 93% and lower than in
97 2000^{6,7}. The proportion of women reporting that they were up to date with their
98 cervical cancer screening varied by age, race/ethnic group, education level, income
99 and insurance status⁷.

100 Using data from CONCORD-3, this study evaluates cervical cancer survival by race,
101 stage and state in the United States for women diagnosed during 2001-2014⁸.

102 **Methods**

103 Data from 41 state-wide population-based cancer registries that had participated in
104 CONCORD-3⁴ were included, covering 85% of the US population in 2014. We
105 collected data on 138,883 women (15-99 years) who were diagnosed with a tumor of
106 the cervix (*International Classification of Diseases for Oncology*, 3rd edition
107 topography codes C53.0-C53.1 and C53.8-C53.9)⁹ during 2001 - 2014 and were
108 followed up for their vital status until December 31, 2014. Only primary, invasive
109 tumors (ICD-O-3 behavior code 3) were included in survival analyses. If a woman
110 was diagnosed with two or more primary, invasive tumors of the cervix during the
111 same time period, only the first record was included. Benign and *in situ* tumors were
112 excluded.

113 We defined three calendar periods of diagnosis (2001-2003, 2004-2008 and 2009-
114 2014) to monitor trends in survival over time and to account for changes in data
115 collection methods for SEER Summary Stage 2000, which occurred from January 1,
116 2004¹⁰.

117 We estimated age-standardized five-year net survival by race (Black or White),
118 SEER Summary Stage 2000 and calendar period in each state, and for all
119 participating states combined, using the Pohar Perme estimator¹¹. Net survival is the
120 probability of a cancer patient to survive their cancer up to a given time since
121 diagnosis, e.g. one or five years, after controlling for competing risks of death
122 (background mortality), which are higher in older adults. To account for the
123 differences in background mortality between states, racial groups and over time, we

124 used life tables of all-cause mortality that were specific to each county, single year of
125 age, sex, calendar year, socio-economic status and race (all races combined, Black,
126 and White).

127 We categorized stage at diagnosis according to SEER Summary Stage 2000¹²
128 (localized, regional, distant and unknown). Stage data were available for all three
129 calendar periods for all states except Washington, which did not submit any data for
130 2009-2014.

131 We used the cohort approach to estimate net survival for women diagnosed during
132 2001-2003 and 2004-2008, because at least five years of follow-up data were
133 available for all women by the end of 2014. The cohort of patients is defined by the
134 year or calendar period of diagnosis (e.g., 2001-2003), and followed for the same
135 length of time (e.g., 5 years). The cohort approach is considered the gold standard
136 for survival estimation as all patients included in the analysis can be followed for the
137 full duration of the survival analysis^{13, 14}. For women diagnosed during 2009-2014,
138 we used the complete approach, because five years of follow-up data were not
139 available for all women. The complete approach can be used to estimate survival for
140 patients who have been diagnosed more recently but who have not had the
141 opportunity to be followed up for the full amount of time by the end of the study (in
142 this case, December 31, 2014). The follow-up time for women diagnosed during
143 2009-2014, therefore, varies between one and five years¹⁰.

144 We produced survival estimates for 5 age groups (15-44, 45-54, 55-64, 65-74 and
145 75-99 years) and obtained age-standardized estimates for all ages combined using
146 the International Cancer Survival Standard (ICSS) weights¹⁵.

147 Funnel plots of age-standardized net survival were produced for each calendar
148 period. The funnel plots show how much each race- and state-specific estimate
149 varies from the US pooled estimate (“target” estimate), given the precision of each
150 estimate. The pooled US estimate for all races combined, represented by the
151 horizontal line, is the “target” estimate for this analysis. It was not possible to
152 produce robust age-standardized estimates for all three calendar periods of
153 diagnosis for every state and race combination, thus data from 35 states were
154 included for White women and data from 15 states for Black women.

155 **Results**

156 For all races combined, there was a decrease in the proportion of women diagnosed
157 with localized tumors from 50.1% during 2001-2003 to 43.3% during 2009-2014
158 (Table 1). Consistently, the proportion of regional tumors increased from 32.4% in
159 2001-2003 to 36.5% in 2009-2014, and from 9.5% in 2001-2003 to 14.3% in 2009-
160 2014 for distant tumors. The proportion of unknown stage tumors decreased from
161 8.1% in 2001-2003 to 5.9% in 2009-2014.

162 The distribution of stage at diagnosis was more favorable for White women than
163 Black women in each calendar period of diagnosis. For White women, localized
164 tumors were the most common in each calendar period (51.4%, 47.2% and 44.7%
165 for 2001-2003, 2004-2008 and 2009-2014, respectively). For Black women, localized
166 tumors were the most common from 2001 to 2003 (43.0%), while regional tumors
167 were the most common during 2004-2008 (40.5%) and 2009-2014 (40.1%). The
168 proportions of distant and unknown stage were consistently higher in Black women
169 than in White women in all time periods (1.7%, 2.5% and 3.0% higher in 2001-2003,

170 2004-2008 and 2009-2014, respectively for distant tumors and 1.2%, 1.4% and 1.0%
171 for tumors of unknown stage).

172 Age-standardized five-year net survival for all stages and races combined fell slightly
173 from 64.0% (95% CI: 63.4-64.7) in 2001-2003 to 62.4% (61.8-63.1) in 2009-2014
174 (Table 2).

175 For all stages combined, survival decreased over time for both White and Black
176 women. For White women, survival decreased slightly from 64.7% (95% CI: 63.9-
177 65.4) in 2001-2003 to 63.0% (62.2-63.7) in 2009-2014. A similar decrease was seen
178 for Black women, with survival decreasing from 56.7% (55.1-58.3) in 2001-2003 to
179 55.8% (54.3-57.4) in 2009-2014 (Table 2).

180 Survival was consistently higher in White women than in Black women in each
181 calendar period of diagnosis. However, the disparity in survival between White and
182 Black women may be narrowing over time – in absolute terms, survival was 8.0%
183 higher for White women diagnosed during 2001-2003, but only 7.2% higher for White
184 women diagnosed during 2009-2014. Figure 1 provides a visual representation of
185 the geographic variation in age-standardized 5-year net survival by race for each
186 calendar period of diagnosis. The funnel plots show that for most states, survival is
187 lower for Black women than for White women, with the survival for Black women
188 falling below the pooled estimate for the United States for most states in each
189 calendar period of diagnosis. The funnel plots also demonstrate that the geographic
190 range in survival is wide for both Black and White women (Supplementary Table 1
191 and Supplementary Figure 1). The difference in survival between Black and White
192 women is wide, systematic and persistent over time.

193 For all races combined, stage-specific survival was highest for women diagnosed
194 during 2009 - 2014 for all stages, except tumors of unknown stage (Table 2). There
195 were consistent improvements in survival for localized and regional tumors for all
196 races combined, with survival increasing from 84.7% (95% CI: 83.7-85.7) in 2001-
197 2003 to 86.9% (85.6-88.2) in 2009-2014 for localized tumors and from 53.1% (52.0-
198 54.2) in 2001-2003 to 56.4% (55.3-57.5) in 2009-2014 for regional tumors. Survival
199 from distant-stage tumors decreased slightly from 17.1% (15.7-18.5) in 2001-2003 to
200 16.3% (15.3-17.3) in 2004-2008, but then increased to 18.7% (17.4-20.0) in 2009-
201 2014 (Figure 2).

202 For localized and regional tumors, race- and stage-specific survival increased over
203 time for both White and Black women (Figure 3). While for both stages White women
204 had consistently higher survival for each calendar period of diagnosis, the
205 improvements over time were greater for Black women. Five-year survival from
206 localized tumors increased in absolute terms by 5.0% over time for Black women
207 (78.6%, 95% CI: 76.0-81.1 in 2001-2003 to 83.6%, 80.8-86.5 in 2009-2014), but only
208 by 1.5% for White women (85.4%, 84.2-86.5 in 2001-2003 to 86.9%, 85.4-88.5 in
209 2009-2014). For regional tumors, survival increased 4.9% over time for Black women
210 and 3.1% for White women. For distant tumors, however, survival did not change
211 over time for Black women (13.8%, 10.8-16.8 in 2001-2003 and 13.7%, 11.2-16.2 in
212 2009-2014), but increased by 1.9% for White women. Survival for unknown stage
213 tumors decreased for White women by 5.1% but increased slightly for Black women
214 by 0.9%. The disparity in survival between White and Black women, thus, appears to
215 narrow over time for localized tumors (from 6.8% in 2001-2003 to 3.3% in 2009-
216 2014), regional tumors (from 6.8% in 2001-2003 to 5.0% in 2009-2014) and tumors

217 of unknown stage (from 8.6% in 2001-2003 to 2.6% in 2009-2014), but widens for
218 distant stage tumors (from 3.6% in 2001-2003 to 5.6% in 2009-2014).

219 The planned first course of treatments (cancer-directed surgery, radiotherapy and/or
220 systemic therapy) differed between White and Black women. For localized tumors,
221 for which surgery is a common treatment, 84.2% of White women received cancer-
222 directed surgery, while only 74.3% of Black women did so (Table 3). For regional
223 and distant tumors, higher proportions of White women received surgery (36.0% and
224 19.1%, respectively) than Black women (26.8% and 15.1%, respectively).

225 A slightly higher proportion of Black women diagnosed with a regional tumor
226 received radiotherapy (76.6% vs. 74.7% for White women), while a slightly higher
227 proportion of White women received systemic therapy (71.8% vs. 68.9% for Black
228 women). For distant tumors, for which systemic therapy is the standard treatment,
229 there were large differences between White and Black women. For White women
230 diagnosed with distant tumors, 64.6% received systemic therapy, compared with
231 only 57.7% of Black women.

232 **Discussion**

233 This study included high-quality data from 41 population-based state registries
234 covering 85% of the US population. Net survival estimates were produced using the
235 same robust methods for each state, and life tables of background mortality that
236 were specific to single year of age, race/ethnicity, county, county-level
237 socioeconomic status and the calendar year of death. The results from this study on
238 cervical cancer survival show a continuation of a slight decline in survival for both
239 Black and White women over time, but it also highlights the continuing need to
240 address the disparity in survival between Black and White women.

241 The distribution of stage at diagnosis changed over time, with more women
242 diagnosed with regional and distant tumors in 2009-2014 than had been diagnosed
243 at advanced stages in 2001-2003. There has been improvement in the reporting of
244 stage at diagnosis, in that the proportion of tumors of unknown stage decreased by
245 2.2%. During 2001-2003, most cancer registries in the United States coded SEER
246 Summary Stage 2000 directly from the medical record. However, starting from
247 January 1, 2004, all registries derived SEER Summary Stage 2000 using the
248 Collaborative Staging System^{12, 16}. However, Black women were diagnosed at more
249 advanced stages than White women, regardless of the calendar period of diagnosis.
250 For women diagnosed during 2001-2014, age-standardized 5-year net survival from
251 cervical cancer for all races combined remained relatively stable over time, showing
252 a slight decrease from 64% to 62%. There were persistent racial differences in
253 survival for all stages of diagnosis combined and at each specific stage. Survival for
254 Black women was around 7-8% lower than for White women for all stages combined,
255 with little improvement over time.

256 Stage at diagnosis is an important predictor of survival from cervical cancer, but the
257 unfavorable stage distribution for Black women does not fully account for the
258 differences in survival for all stages combined. The disparity in stage-specific survival
259 between Black and White women appears to have narrowed slightly for localized,
260 regional and tumors of unknown stage, but has widened for distant stage tumors.
261 Despite greater improvements in survival for Black women with localized and
262 regional tumors and tumors of unknown stage than for White women, Black women
263 still have lower stage-specific survival for each stage.

264 Lower cervical cancer survival for Black women than White women is thus a
265 combination of a higher proportion of tumors that are diagnosed at a more advanced
266 stage and persistently lower survival at each stage of disease.

267 Disparities in access to treatment for cervical cancer may explain differences in
268 survival between White and Black women. In the US Military Health Care System, a
269 health care system with equal access to care, there was no difference in treatment
270 received, or in survival, between Black and White women¹⁷. Given the difference in
271 the proportion of White and Black women receiving cancer-directed surgery for
272 localized or regional tumors, lower stage-specific survival for Black women in the US
273 population may be partially explained by lack of optimal treatment. Treatment data
274 may be under-ascertained in cancer registry data, particularly for radiotherapy and,
275 to a lesser extent, systemic therapy^{18, 19}, but the percentage of patients for whom
276 receipt of radiotherapy was unknown was less than 15% overall, and higher for
277 White women. For systemic therapy, the percentage of women with unknown receipt
278 of treatment was less than 10%, but slightly higher for Black women.

279 While the proportion of women aged 21-65 years screened for cervical cancer in the
280 United States is around 80%, this is still below the Healthy People 2020 target of
281 93% and there are disparities in screening for racial and ethnic minority groups^{6, 7}.
282 The proportions of Black and White women screened are similar, however, there are
283 disparities in follow-up treatment for Black women²⁰. Screening is recommended
284 every 3 or 5 years, depending on the woman's age and the screening test used, until
285 age 65 years. Although annual cervical cancer screening was withdrawn as a formal
286 recommendation in 2003 by the USPSTF, it remains a common practice in the
287 United States²¹. Preference for annual screening may deter some women from
288 seeking screening, especially if they are uninsured. Insurance status is an important

289 factor in receiving routine cervical cancer screening, regardless of race/ethnicity²².

290 While routine screening is not recommended for women aged 65 years or older who
291 have been screened previously and have had negative results, many older women
292 are not being screened adequately. Given that the incidence rate of cervical cancer
293 generally increases until 85 years, inadequate screening of older women – many of
294 whom may be at higher risk or have no screening history – may contribute to poor
295 cervical cancer survival for older women²³.

296 Data for women of other racial groups than White and Black were included in the
297 data submissions, and estimates for all races and stages combined, but we could not
298 produce robust survival estimates for non-Black or non-White races or ethnicities
299 individually due to small numbers for women from these groups. Thus, there may be
300 other racial disparities in cervical cancer survival that are unmeasured in this study.

301 Population-based cancer survival has been used routinely as a measure to assess
302 the health care system's deficits in managing the cancer burden equitably. Despite
303 similar screening coverage for both Black and White women and improvements in
304 stage-specific survival, Black women continue to have poorer survival than White
305 women. This may be partially explained by inequities in access to adequate
306 treatment. The results from this study highlight the continuing need to address the
307 disparity in cervical cancer survival between White and Black women in the United
308 States. Monitoring and updating the trends in cervical cancer survival by stage and
309 race can inform the development of public health initiatives to eliminate racial
310 disparities and improve cervical cancer survival for all women.

311 **Conflicts of interest:** The authors declare no conflicts of interest.

312 **Author contributions:** Melissa Matz: data preparation, formal analysis, reviewing
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414 AT Johnson (Vermont Cancer Registry); MB Keitheri Cheteri, P Migliore Santiago
415 (Washington State Cancer Registry); SE Blankenship, S Farley (West Virginia Cancer
416 Registry); R Borchers, R Malicki (Wisconsin Department of Health Services); J Espinoza, J
417 Grandpre (Wyoming Cancer Surveillance Program); HK Weir*, R Wilson (Centers for
418 Disease Control and Prevention); BK Edwards*, A Mariotto (National Cancer Institute)

419 **Table Legends**

420 **Table 1. Number (%) of women (15-99 years) diagnosed with cervical cancer**
421 **during 2001-2014, by SEER Summary Stage at diagnosis, race and calendar**
422 **period of diagnosis**

423 **Table 2. Age-standardized five-year net survival (NS,%) for women (15-99**
424 **years) diagnosed with cervical cancer during 2001-2014 by SEER Summary**
425 **Stage 2000, race and calendar period of diagnosis**

426 **Table 3. Number (%) of women (15-99 years) diagnosed with cervical cancer**
427 **during 2001-2014, by SEER Summary Stage at diagnosis, race and treatment**

428 **Figure Legends**

429 **Figure 1. Age-standardized five-year net survival (%) for women (aged 15-99**
430 **years) diagnosed with cervical cancer during 2001-2014.**

431 Footnote: The circles in the figure represent state-specific survival estimates. Open
432 circles represent the state-specific estimate for White women and closed circles
433 represent the state-specific estimate for Black women. The pooled (US) survival
434 estimates for each calendar period are shown by the horizontal (solid) line with
435 corresponding 95.0% and 99.8% control limits (dotted lines).

436 **Figure 2. Trends in age-standardized five-year net survival (%) for women**
437 **(aged 15-99 years) diagnosed during 2001-2014 with cervical cancer by SEER**
438 **Summary Stage at diagnosis (all racial groups combined).**

439 **Figure 3. Trends in age-standardized five-year net survival (%) for Black and**
440 **White women (aged 15-99 years) diagnosed during 2001-2014 with cervical**
441 **cancer, by SEER Summary Stage at diagnosis and race.**

442 **Supplementary Figure 1. Age-standardized five-year net survival (%) for**
443 **women (aged 15-99 years) diagnosed with cervical cancer during 2001-2014,**
444 **by SEER Summary Stage at diagnosis.**

445 Footnote: The circles in the figure represent state-specific survival estimates. Open
446 circles represent the state-specific estimate for White women and closed circles
447 represent the state-specific estimate for Black women. The pooled (US) survival
448 estimates for each calendar period are shown by the horizontal (solid) line with
449 corresponding 95.0% and 99.8% control limits (dotted lines).

Table 1. Number (%) of women (15-99 years) diagnosed with cervical cancer during 2001-2014, by SEER Summary Stage at diagnosis, race and calendar period of diagnosis

Summary Stage 2000	2001-2003						2004-2008						2009-2014					
	All women		White women		Black women		All women		White women		Black women		All women		White women		Black women	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Localized	16,605	50.1	13,326	51.4	2,269	43.0	24,623	45.9	19,711	47.2	3,217	38.4	22,527	43.3	17,695	44.7	3,260	36.4
Regional	10,731	32.4	8,166	31.5	1,946	36.9	19,534	36.4	14,892	35.6	3,395	40.5	18,974	36.5	14,200	35.8	3,596	40.1
Distant	3,154	9.5	2,403	9.3	582	11.0	6,291	11.7	4,813	11.5	1,174	14.0	7,441	14.3	5,542	14.0	1,523	17.0
Unknown	2,678	8.1	2,009	7.8	477	9.0	3,249	6.1	2,370	5.7	592	7.1	3,076	5.9	2,186	5.5	578	6.5
Total	33,168		25,904		5,274		53,697		41,786		8,378		52,018		39,623		8,957	

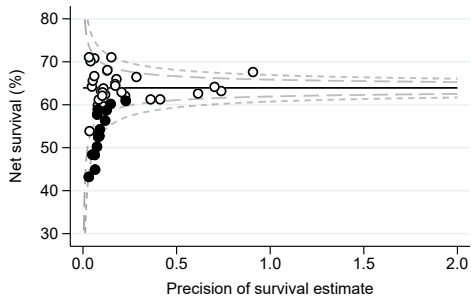
Table 2. Age-standardized five-year net survival (NS,%) for women (15-99 years) diagnosed with cervical cancer during 2001-2014 by SEER Summary Stage 2000, race and calendar period of diagnosis

Summary Stage 2000	2001-2003						2004-2008						2009-2014					
	All women		White women		Black women		All women		White women		Black women		All women		White women		Black women	
	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI
All	64.0	63.4 - 64.7	64.7	63.9 - 65.4	56.7	55.1 - 58.3	63.1	62.6 - 63.6	63.6	63.0 - 64.2	55.5	54.2 - 56.8	62.4	61.8 - 63.1	63.0	62.2 - 63.7	55.8	54.3 - 57.4
Localized	84.7	83.7 - 85.7	85.4	84.2 - 86.5	78.6	76.0 - 81.1	86.1	85.2 - 86.9	86.6	85.7 - 87.6	79.3	77.2 - 81.4	86.9	85.6 - 88.2	86.9	85.4 - 88.5	83.6	80.8 - 86.5
Regional	53.1	52.0 - 54.2	53.6	52.3 - 54.8	46.8	44.2 - 49.3	56.1	55.2 - 56.9	56.5	55.5 - 57.4	50.1	48.1 - 52.1	56.4	55.3 - 57.5	56.7	55.4 - 58.0	51.7	49.2 - 54.2
Distant	17.1	15.7 - 18.5	17.4	15.8 - 19.0	13.8	10.8 - 16.8	16.3	15.3 - 17.3	16.7	15.5 - 17.8	14.0	11.8 - 16.1	18.7	17.4 - 20.0	19.3	17.9 - 20.8	13.7	11.2 - 16.2
Unknown	58.4	56.3 - 60.6	58.7	56.3 - 61.1	50.1	45.0 - 55.2	55.2	53.3 - 57.1	54.3	52.1 - 56.5	48.1	43.6 - 52.6	55.0	52.7 - 57.3	53.6	50.9 - 56.4	51.0	46.1 - 55.9

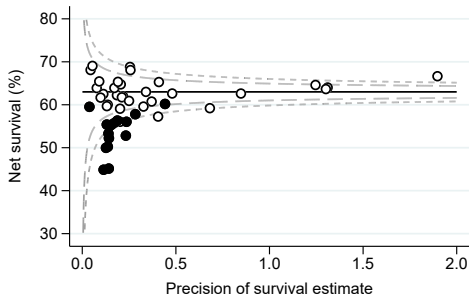
Table 3. Number (%) of women (15-99 years) diagnosed with cervical cancer during 2001-2014, by SEER Summary Stage at diagnosis, race and treatment

Treatment type	Localized						Regional						Distant						Unknown						
	All women		White women		Black women		All women		White women		Black women		All women		White women		Black women		All Races		White women		Black women		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Cancer-directed surgery																									
Yes	52,804	82.8	42,691	84.2	6,497	74.3	16,920	34.4	13,431	36.0	2,392	26.8	3,090	18.3	2,440	19.1	495	15.1	1,748	19.4	1,399	21.3	241	14.6	
No	9,549	15.0	6,986	13.8	2,006	22.9	31,261	63.5	23,086	62.0	6,290	70.4	13,411	79.4	10,043	78.7	2,695	82.2	5,235	58.1	3,760	57.3	1,051	63.8	
Unknown	1,402	2.2	1,055	2.1	243	2.8	1,058	2.1	741	2.0	255	2.9	385	2.3	275	2.2	89	2.7	2,020	22.4	1,406	21.4	355	21.6	
Radiotherapy																									
Yes	15,326	24.0	11,659	23.0	2,835	32.4	37,088	75.3	27,840	74.7	6,842	76.6	9,756	57.8	7,348	57.6	1,886	57.5	1,373	15.3	1,002	15.3	313	19.0	
No	39,547	62.0	31,749	62.6	4,808	55.0	5,881	11.9	4,424	11.9	1,078	12.1	4,982	29.5	3,710	29.1	1,019	31.1	4,667	51.8	3,380	51.5	846	51.4	
Unknown	8,882	13.9	7,324	14.4	1,103	12.6	6,270	12.7	4,994	13.4	1,017	11.4	2,148	12.7	1,700	13.3	374	11.4	2,963	32.9	2,183	33.3	488	29.6	
Systemic therapy																									
Yes	11,406	17.9	8,771	17.3	2,037	23.3	35,062	71.2	26,744	71.8	6,158	68.9	10,691	63.3	8,240	64.6	1,891	57.7	1,275	14.2	967	14.7	248	15.1	
No	46,654	73.2	37,504	73.9	5,850	66.9	11,251	22.8	8,423	22.6	2,123	23.8	5,110	30.3	3,740	29.3	1,144	34.9	4,848	53.8	3,560	54.2	868	52.7	
Unknown	5,695	8.9	4,457	8.8	859	9.8	2,926	5.9	2,091	5.6	656	7.3	1,085	6.4	778	6.1	244	7.4	2,880	32.0	2,038	31.0	531	32.2	

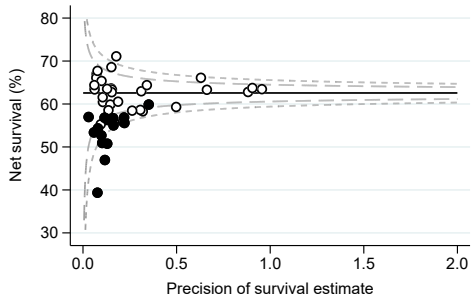
2001-2003



2004-2008



2009-2014



- White women
- Black women
- - - 95.0% limits
- - - - 99.8% limits

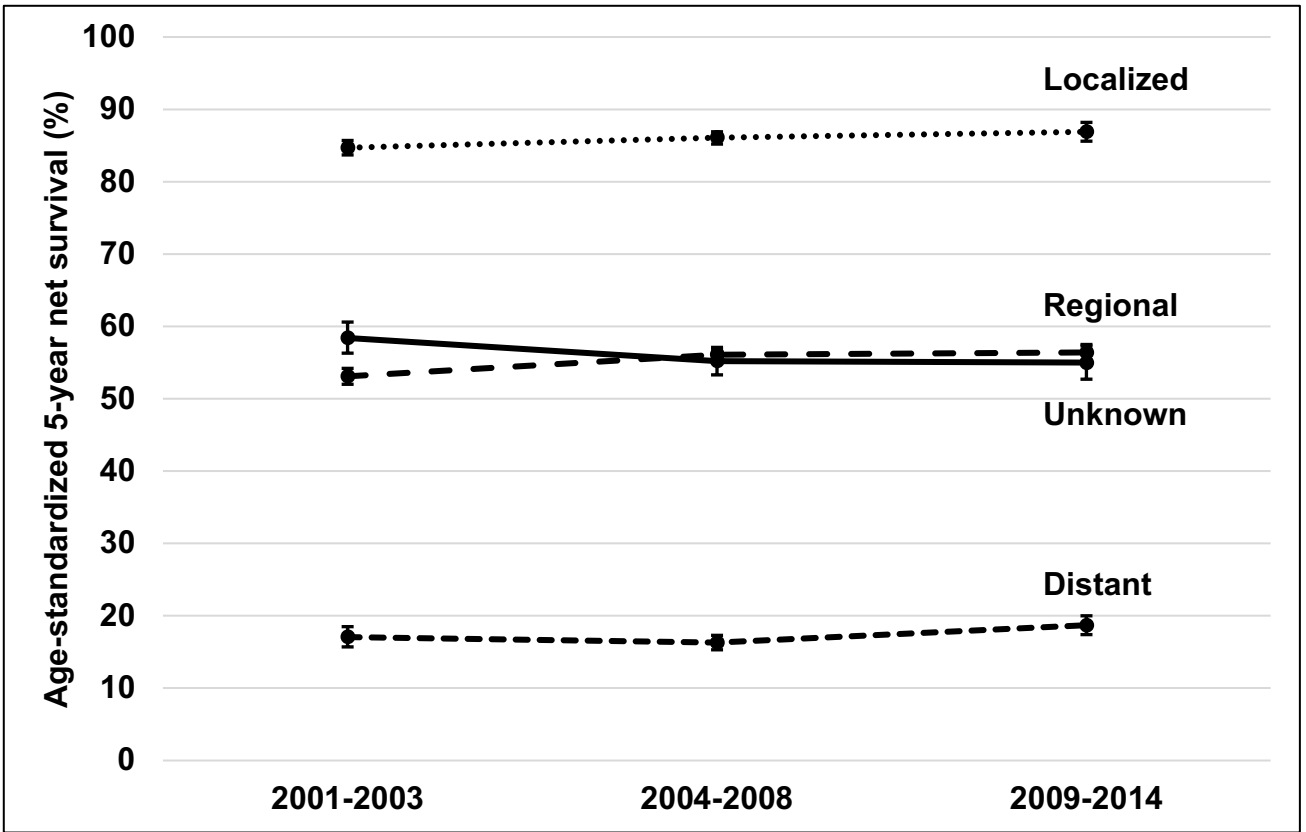


Figure 2.

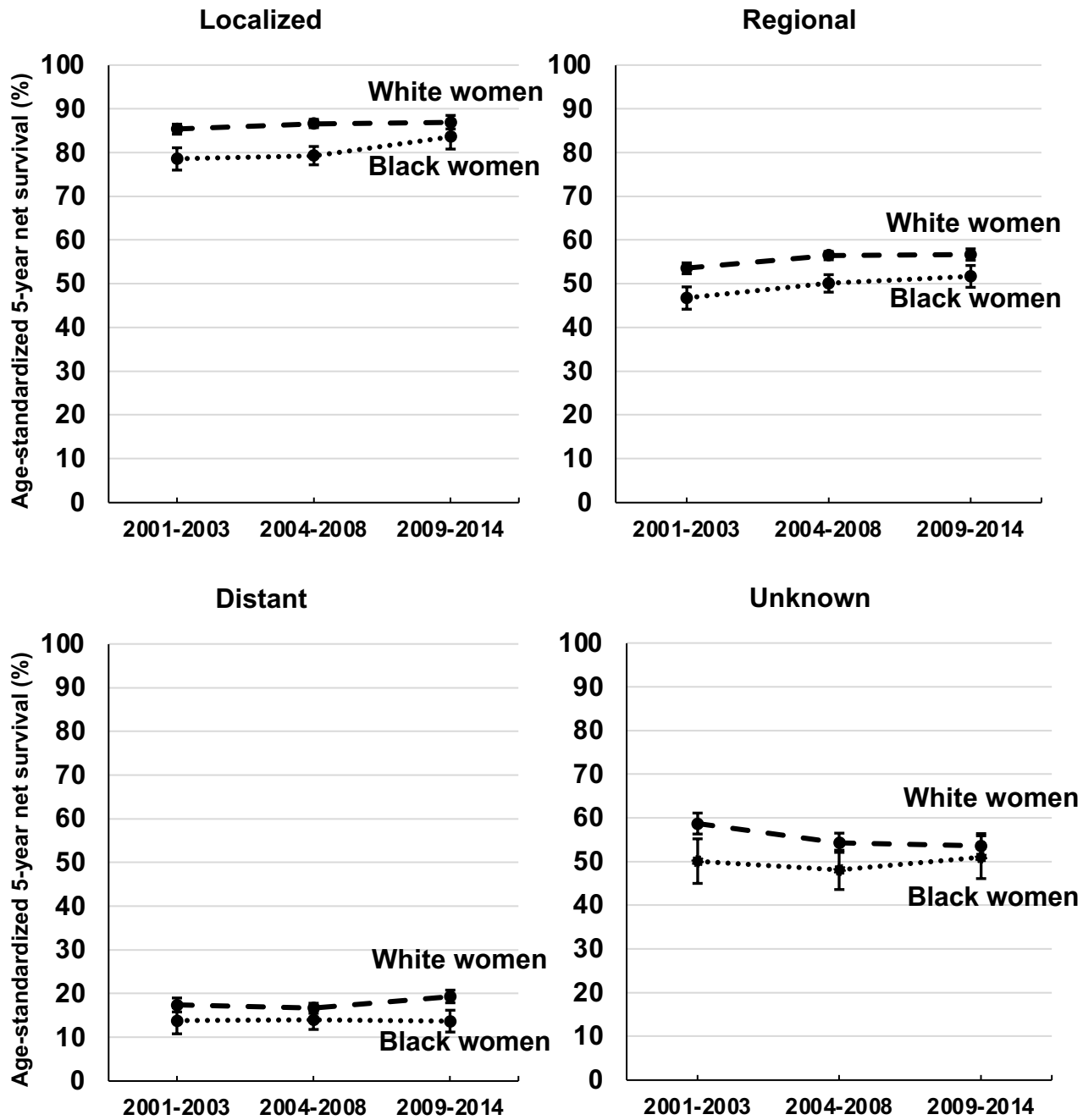


Figure 3.

Supplementary Table 1. Age-standardized five-year net survival for women (15-99 years) diagnosed with cervical cancer in 2001-2014 by SEER Summary Stage at diagnosis, race, calendar period of diagnosis, and state

State	Summary Stage 2000	2001-2003						2004-2008						2009-2014					
		All women		White women		Black women		All women		White women		Black women		All women		White women		Black women	
		NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI
United States	All	64.0	63.4 - 64.7	64.7	63.9 - 65.4	56.7	55.1 - 58.3	63.1	62.6 - 63.6	63.6	63.0 - 64.2	55.5	54.2 - 56.8	62.4	61.8 - 63.1	63.0	62.2 - 63.7	55.8	54.3 - 57.4
	Localized	84.7	83.7 - 85.7	85.4	84.2 - 86.5	78.6	76.0 - 81.1	86.1	85.2 - 86.9	86.6	85.7 - 87.6	79.3	77.2 - 81.4	86.9	85.6 - 88.2	86.9	85.4 - 88.5	83.6	80.8 - 86.5
	Regional	53.1	52.0 - 54.2	53.6	52.3 - 54.8	46.8	44.2 - 49.3	56.1	55.2 - 56.9	56.5	55.5 - 57.4	50.1	48.1 - 52.1	56.4	55.3 - 57.5	56.7	55.4 - 58.0	51.7	49.2 - 54.2
	Distant	17.1	15.7 - 18.5	17.4	15.8 - 19.0	13.8	10.8 - 16.8	16.3	15.3 - 17.3	16.7	15.5 - 17.8	14.0	11.8 - 16.1	18.7	17.4 - 20.0	19.3	17.9 - 20.8	13.7	11.2 - 16.2
	Unknown	58.4	56.3 - 60.6	58.7	56.3 - 61.1	50.1	45.0 - 55.2	55.2	53.3 - 57.1	54.3	52.1 - 56.5	48.1	43.6 - 52.6	55.0	52.7 - 57.3	53.6	50.9 - 56.4	51.0	46.1 - 55.9
Alabama	All	59.0	54.8 - 63.3	62.4	56.7 - 68.1	53.1	46.3 - 59.8	56.4	52.7 - 60.0	58.6	53.9 - 63.4	49.8	43.8 - 55.9	54.5	50.4 - 58.6	56.5	51.4 - 61.6	47.7	40.8 - 54.6
	Localized	77.9	71.9 - 83.9	78.0	70.2 - 85.7	73.2	64.1 - 82.3	79.3	72.8 - 85.8	85.7	77.3 - 94.1	69.7	59.4 - 79.9	71.2	64.7 - 77.6	73.5	66.2 - 80.7	68.7	58.8 - 78.5
	Regional	45.3	38.4 - 52.1	47.6	38.7 - 56.5	42.6	32.3 - 53.0	49.3	44.1 - 54.5	49.1	42.6 - 55.5	44.8	36.3 - 53.4	50.8	43.9 - 57.7	50.7	43.0 - 58.5	48.2	37.2 - 59.2
	Distant	18.5	10.0 - 27.1	18.9	5.8 - 32.0	17.3	3.9 - 30.6	10.7	4.6 - 16.8	9.3	1.8 - 16.8	11.6	1.4 - 21.7	16.5	9.7 - 23.3	22.0	12.7 - 31.4	9.9	0.5 - 19.3
	Unknown	43.3	23.2 - 63.5	57.7	29.6 - 85.7	23.1	0.0 - 47.3	39.4	25.5 - 53.2	37.8	21.5 - 54.1	20.3	0.0 - 42.2	44.0	35.8 - 52.3	49.8	40.2 - 59.4	28.1	7.9 - 48.2
Alaska	All	70.3	58.4 - 82.2	71.7	58.3 - 85.2			74.7	66.4 - 83.0	71.4	61.3 - 81.6			72.9	63.8 - 82.1	73.9	62.5 - 85.3		
	Localized	86.1	73.8 - 98.4	88.5	75.1 - 100.0			94.7	88.5 - 100.0	94.0	86.4 - 100.0			95.5	88.0 - 100.0	92.5	81.4 - 100.0		
	Regional	46.3	24.8 - 67.8	47.3	23.0 - 71.6			63.0	47.0 - 78.9	56.5	36.9 - 76.2			70.3	53.0 - 87.5	64.3	42.1 - 86.5		
	Distant							15.7	0.0 - 33.7	18.3	0.0 - 38.2			16.9	0.0 - 34.3	33.9	4.4 - 63.3		
	Unknown												73.5	48.0 - 98.9					
Arkansas	All	62.4	56.6 - 68.2	63.3	56.9 - 69.6	57.2	43.7 - 70.6	60.5	56.0 - 64.9	61.5	56.5 - 66.4	46.4	37.4 - 55.3	60.6	54.7 - 66.5	62.7	56.2 - 69.3	48.8	36.9 - 60.6
	Localized	79.2	72.0 - 86.3	77.9	70.0 - 85.9	82.7	68.2 - 97.2	80.9	74.4 - 87.5	83.9	76.1 - 91.7	69.3	56.2 - 82.5	88.8	80.9 - 96.7	95.9	90.4 - 100.0	54.9	27.6 - 82.1
	Regional	50.0	41.3 - 58.7	54.2	44.8 - 63.7	34.2	14.3 - 54.0	59.1	52.2 - 66.1	59.8	52.4 - 67.2	50.4	35.1 - 65.7	56.2	47.7 - 64.6	53.8	44.4 - 63.1	59.9	42.4 - 77.3
	Distant	17.8	6.3 - 29.2	14.9	3.6 - 26.3			13.7	7.4 - 20.0	12.7	6.6 - 18.8	14.3	0.0 - 30.0	18.1	10.1 - 26.2	18.2	6.3 - 30.1	20.8	3.7 - 38.0
	Unknown	60.9	38.8 - 83.1	59.8	35.5 - 84.1			24.2	4.6 - 43.8	25.8	2.7 - 48.8			40.2	11.6 - 68.8	36.7	5.7 - 67.8		
California	All	67.2	65.4 - 69.0	67.6	65.6 - 69.7	54.3	47.7 - 60.8	67.2	65.9 - 68.6	66.8	65.3 - 68.4	56.4	51.1 - 61.7	65.8	63.8 - 67.7	65.3	63.1 - 67.5	54.8	47.2 - 62.3
	Localized	91.2	88.7 - 93.8	92.3	89.5 - 95.2	87.0	79.9 - 94.0	90.2	88.2 - 92.3	90.4	88.0 - 92.8	83.3	75.8 - 90.8	91.2	87.7 - 94.6	89.6	85.5 - 93.6	88.2	79.0 - 97.4
	Regional	58.1	55.2 - 60.9	59.0	55.7 - 62.3	41.3	31.3 - 51.2	60.3	58.1 - 62.4	60.2	57.8 - 62.6	45.3	37.1 - 53.5	59.3	56.2 - 62.3	58.8	55.3 - 62.4	46.6	37.3 - 56.0
	Distant	21.3	17.8 - 24.8	21.4	17.4 - 25.3	16.1	4.8 - 27.4	20.1	17.4 - 22.8	20.2	17.2 - 23.2	17.8	10.8 - 24.9	19.9	16.3 - 23.5	20.3	16.1 - 24.5	24.7	13.0 - 36.5
	Unknown	47.7	39.4 - 56.0	46.4	36.8 - 56.0	23.5	1.9 - 45.1	54.2	47.8 - 60.6	49.2	41.5 - 56.9	39.8	18.9 - 60.6	55.5	46.7 - 64.3	52.1	42.3 - 61.9	60.3	28.8 - 91.7
Colorado	All	68.7	63.5 - 73.9	67.9	62.5 - 73.4	58.3	34.1 - 82.5	63.3	58.9 - 67.6	61.8	57.2 - 66.3	79.3	65.1 - 93.6	64.9	59.9 - 69.9	65.0	59.7 - 70.4	58.8	38.0 - 79.5
	Localized	93.0	88.2 - 97.8	92.5	87.2 - 97.7			90.9	84.0 - 97.8	89.1	84.1 - 94.0	91.4	78.5 - 100.0	89.3	83.6 - 95.0	92.0	86.3 - 97.6	66.0	34.8 - 97.3
	Regional	57.9	49.5 - 66.3	57.8	49.0 - 66.6			52.6	45.7 - 59.5	52.8	45.5 - 60.1	56.2	27.2 - 85.2	65.4	57.0 - 73.8	65.2	56.4 - 73.9	87.9	62.6 - 100.0
	Distant	16.0	5.5 - 26.5	14.9	4.3 - 25.5			23.2	15.5 - 30.9	21.4	13.6 - 29.2			22.0	14.7 - 29.3	21.5	14.1 - 28.8		
	Unknown	78.4	63.3 - 93.6	72.8	54.6 - 91.0			56.1	39.9 - 72.3	44.0	24.0 - 63.9			64.1	42.4 - 85.8	59.2	33.2 - 85.2		
Connecticut	All	62.5	57.1 - 68.0	63.8	57.9 - 69.7	50.7	35.2 - 66.1	65.1	60.9 - 69.4	62.9	58.3 - 67.5	77.5	67.9 - 87.1	62.7	56.6 - 68.9	61.9	55.4 - 68.4	63.5	52.5 - 74.6
	Localized	86.5	79.0 - 94.1	85.7	78.0 - 93.5	100.0	100.0 - 100.0	82.4	75.9 - 88.9	82.0	74.8 - 89.3	90.1	78.8 - 100.0	94.9	89.2 - 100.0	93.4	87.0 - 99.8	97.0	82.6 - 100.0
	Regional	51.9	43.2 - 60.5	52.7	42.9 - 62.4	42.0	22.9 - 61.1	59.4	52.1 - 66.8	57.8	50.1 - 65.5	81.9	61.8 - 100.0	51.4	42.0 - 60.9	51.2	41.5 - 61.0	52.5	28.4 - 76.7
	Distant	2.3	0.0 - 5.9	2.6	0.0 - 6.7			8.1	3.5 - 12.8	8.8	3.7 - 13.9			19.1	11.6 - 26.6	22.4	13.9 - 30.9		
	Unknown	86.4	42.1 - 100.0	95.3	47.7 - 100.0			52.6	33.0 - 72.2	51.0	30.3 - 71.7			50.7	26.4 - 75.1	50.3	20.3 - 80.3		
Delaware	All	59.5	49.9 - 69.1	53.9	43.4 - 64.4	75.3	58.2 - 92.5	66.9	58.6 - 75.1	71.6	62.0 - 81.3	60.3	46.9 - 73.6	59.0	50.6 - 67.4	53.5	45.2 - 61.8	69.8	51.8 - 87.8
	Localized	84.0	73.5 - 94.5	78.4	64.9 - 91.9	95.8	84.9 - 100.0	83.5	75.1 - 91.9	90.0	80.7 - 99.4	67.5	50.1 - 85.0	91.3	83.3 - 99.3	85.6	76.9 - 94.4	100.0	100.0 - 100.0
	Regional	38.3	21.7 - 54.9	39.4	20.9 - 57.8			71.4	59.3 - 83.4	70.8	56.8 - 84.8	71.7	48.8 - 94.7	53.5	40.5 - 66.5	60.3	45.0 - 75.6	51.4	15.0 - 87.8
	Distant							16.1	2.7 - 29.5	19.8	1.6 - 38.0			10.5	0.0 - 22.8	8.3	0.0 - 18.7	34.0	3.3 - 64.7
	Unknown																		
Florida	All	63.1	61.0 - 65.2	63.2	60.9 - 65.5	60.2	55.1 - 65.3	63.3	61.6 - 65.0	63.9	62.1 - 65.8	58.0	53.9 - 62.1	62.6	60.6 - 64.7	63.6	61.2 - 65.9	56.3	51.9 - 60.7
	Localized	84.2	81.3 - 87.2	83.8	80.6 - 87.0	83.1	75.4 - 90.7	85.7	83.1 - 88.4	86.3	83.5 - 89.1	78.8	71.0 - 86.6	88.2	84.8 - 91.5	89.0	85.3 - 92.6	83.3	75.1 - 91.5
	Regional	52.8	49.4 - 56.3	51.5	47.6 - 55.4	53.5	45.9 - 61.0	56.5	53.8 - 59.3	55.6	52.6 - 58.7	58.0	51.5 - 64.4	57.6	54.2 - 60.9	57.1	53.2 - 61.0	56.4	49.7 - 63.0
	Distant	20.1	15.2 - 25.0	18.3	13.3 - 23.4	25.7	16.4 - 35.0	17.6	14.1 - 21.2	18.4	14.2 - 22.5	15.9	9.5 - 22.4	19.9	16.1 - 23.6	20.0	15.7 - 24.3	18.9	12.7 - 25.2
	Unknown	56.2	50.6 - 61.8	59.2	53.2 - 65.3	47.9	33.1 - 62.6	57.5	52.1 - 62.9	57.2	51.1 - 63.3	57.4	46.2 - 68.6	52.0	46.0 - 57.9	53.9	47.1 - 60.8	46.9	38.0 - 55.8

Supplementary Table 1. Age-standardized five-year net survival for women (15-99 years) diagnosed with cervical cancer in 2001-2014 by SEER Summary Stage at diagnosis, race, calendar period of diagnosis, and state

State	Summary Stage 2000	2001-2003						2004-2008						2009-2014					
		All women		White women		Black women		All women		White women		Black women		All women		White women		Black women	
		NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI
Georgia	All	61.7	58.4 - 64.9	62.1	57.9 - 66.2	58.7	53.2 - 64.2	57.6	54.9 - 60.3	58.1	54.6 - 61.5	54.5	50.0 - 58.9	57.9	54.6 - 61.1	55.3	51.6 - 59.0	56.4	51.7 - 61.1
	Localized	83.6	78.4 - 88.7	84.4	77.8 - 91.0	80.5	71.9 - 89.0	77.2	72.6 - 81.7	78.4	72.2 - 84.6	73.3	66.4 - 80.3	81.6	75.3 - 88.0	75.4	69.8 - 81.0	90.6	82.3 - 98.9
	Regional	51.9	46.8 - 57.0	52.2	45.3 - 59.1	49.6	41.8 - 57.3	52.0	47.8 - 56.1	50.1	44.8 - 55.4	52.7	45.8 - 59.6	51.6	46.8 - 56.4	53.2	46.6 - 59.8	50.8	43.7 - 57.9
	Distant	10.4	4.7 - 16.0	9.1	2.4 - 15.8	11.9	1.4 - 22.4	12.4	8.1 - 16.8	16.5	10.0 - 23.0	7.3	2.7 - 12.0	16.5	11.4 - 21.5	21.8	14.4 - 29.4	12.7	7.1 - 18.3
	Unknown	43.2	29.5 - 56.9	44.2	28.1 - 60.2	36.3	11.9 - 60.7	52.3	42.7 - 62.0	49.5	33.2 - 65.9	52.7	30.3 - 75.2	60.8	52.4 - 69.3	55.9	43.0 - 68.8	64.5	49.2 - 79.9
Hawaii	All	60.5	51.0 - 69.9	66.6	50.4 - 82.7			66.6	59.3 - 73.8	68.4	56.0 - 80.8			63.2	55.6 - 70.8	64.3	50.5 - 78.0		
	Localized	84.0	75.5 - 92.5	86.6	71.0 - 100.0			96.7	92.1 - 100.0	98.8	92.7 - 100.0			84.7	75.6 - 93.8	88.4	71.5 - 100.0		
	Regional	54.5	37.9 - 71.0					54.1	44.8 - 63.5	35.5	15.0 - 56.1			59.2	46.7 - 71.7	53.6	30.0 - 77.3		
	Distant	15.1	0.7 - 29.5					18.8	3.4 - 34.2					22.4	9.3 - 35.5	32.4	9.0 - 55.8		
	Unknown													62.1	20.5 - 100.0				
Idaho	All	64.9	56.0 - 73.8	64.2	55.3 - 73.2			67.3	59.3 - 75.2	67.3	59.2 - 75.3			57.9	51.5 - 64.3	57.0	50.4 - 63.6		
	Localized	94.0	88.0 - 100.0	93.8	87.6 - 100.0			93.8	87.9 - 99.7	93.7	87.7 - 99.6			83.6	62.1 - 100.0	83.3	61.8 - 100.0		
	Regional	55.4	39.3 - 71.6	53.5	37.2 - 69.8			66.1	55.4 - 76.7	66.5	55.8 - 77.1			56.3	46.0 - 66.7	55.1	44.4 - 65.8		
	Distant	8.4	0.0 - 20.7	8.4	0.0 - 20.7			20.5	5.6 - 35.3	17.7	3.5 - 31.9			5.8	0.0 - 13.4	4.9	0.0 - 11.6		
	Unknown																		
Indiana	All	62.5	58.5 - 66.6	62.9	58.6 - 67.2	58.5	46.4 - 70.6	59.9	56.7 - 63.2	61.0	57.5 - 64.5	46.4	37.4 - 55.5	60.1	56.1 - 64.1	59.6	55.4 - 63.8	60.6	50.0 - 71.2
	Localized	86.4	79.8 - 93.0	88.6	81.8 - 95.5	72.7	56.8 - 88.6	84.8	79.5 - 90.0	86.6	81.3 - 91.9	73.3	59.4 - 87.2	86.4	79.5 - 93.4	86.4	79.6 - 93.1	90.8	78.5 - 100.0
	Regional	48.8	42.9 - 54.6	48.0	41.8 - 54.1	54.7	34.1 - 75.4	56.1	50.8 - 61.4	56.3	50.7 - 61.9	49.4	34.0 - 64.8	53.7	48.0 - 59.4	53.9	47.8 - 59.9	45.4	24.9 - 65.9
	Distant	22.4	12.9 - 31.8	24.5	14.6 - 34.3			9.2	5.0 - 13.4	9.2	4.8 - 13.6	5.2	0.0 - 12.8	21.8	14.9 - 28.6	21.3	14.0 - 28.6	22.3	4.8 - 39.8
	Unknown	65.8	52.0 - 79.5	61.3	45.1 - 77.5			36.2	22.3 - 50.2	28.0	12.5 - 43.5			57.7	39.6 - 75.8	39.5	17.7 - 61.4		
Iowa	All	60.8	55.2 - 66.3	59.7	54.1 - 65.4			63.6	58.6 - 68.7	63.8	58.6 - 68.9	58.0	34.8 - 81.1	65.2	60.0 - 70.4	65.3	60.0 - 70.7	75.0	49.5 - 100.0
	Localized	81.1	73.1 - 89.1	79.1	70.9 - 87.3			86.9	79.7 - 94.0	88.6	81.4 - 95.8	83.2	58.7 - 100.0	88.4	82.4 - 94.4	88.0	81.8 - 94.1	100.0	100.0 - 100.0
	Regional	57.7	48.9 - 66.5	56.5	47.4 - 65.6			57.9	50.3 - 65.5	58.5	50.7 - 66.3			62.1	52.9 - 71.2	61.6	52.2 - 71.0		
	Distant	13.2	3.8 - 22.7	13.8	4.0 - 23.6			20.4	10.4 - 30.5	20.8	10.6 - 31.0			22.1	13.4 - 30.7	24.3	15.3 - 33.4		
	Unknown	28.0	8.2 - 47.8	28.0	8.2 - 47.8			25.8	4.3 - 47.3	27.3	4.7 - 50.0			31.5	3.3 - 59.8	31.5	3.3 - 59.8		
Kentucky	All	64.1	59.6 - 68.6	66.0	61.3 - 70.6	43.2	32.1 - 54.3	60.3	56.7 - 63.9	60.4	56.7 - 64.2	62.9	52.2 - 73.7	57.4	52.7 - 62.2	57.1	52.1 - 62.2	63.0	47.8 - 78.1
	Localized	81.6	74.5 - 88.7	84.4	77.4 - 91.4	61.6	41.4 - 81.7	83.5	77.3 - 89.7	82.3	75.8 - 88.8	93.6	81.1 - 100.0	74.6	66.7 - 82.5	74.4	66.6 - 82.3	92.2	76.0 - 100.0
	Regional	55.1	47.8 - 62.4	56.1	48.3 - 64.0	45.8	24.7 - 66.9	52.5	47.1 - 57.8	52.9	47.2 - 58.5	56.4	40.5 - 72.2	53.4	45.9 - 60.9	53.9	46.0 - 61.9	51.0	22.9 - 79.1
	Distant	22.7	12.4 - 32.9	24.7	13.3 - 36.1	10.9	0.0 - 26.5	10.8	5.2 - 16.5	12.8	6.1 - 19.6	0.0	0.0 - 0.1	15.3	9.7 - 20.8	15.4	9.7 - 21.1	13.8	0.0 - 31.7
	Unknown	63.0	46.4 - 79.5	66.7	50.5 - 82.8			48.2	31.5 - 64.8	42.6	24.3 - 60.8			44.2	27.8 - 60.5	47.3	30.2 - 64.5		
Louisiana	All	57.5	52.8 - 62.3	61.0	54.5 - 67.6	52.5	45.6 - 59.4	54.9	51.2 - 58.5	56.2	51.5 - 60.9	51.4	45.9 - 56.9	58.8	54.0 - 63.7	62.4	56.2 - 68.7	53.9	46.8 - 61.1
	Localized	81.1	73.6 - 88.5	90.0	85.3 - 94.7	77.6	68.5 - 86.8	77.4	70.8 - 84.0	77.9	69.6 - 86.2	73.9	64.1 - 83.7	84.8	77.9 - 91.7	84.2	75.8 - 92.6	86.3	78.2 - 94.5
	Regional	44.4	37.7 - 51.2	41.1	33.1 - 49.1	47.2	37.6 - 56.7	47.5	41.8 - 53.1	46.4	39.3 - 53.5	47.2	38.8 - 55.5	48.9	41.4 - 56.4	52.1	42.2 - 62.0	45.2	33.9 - 56.4
	Distant	9.7	3.9 - 15.5	16.9	3.1 - 30.7	7.6	0.0 - 15.2	18.0	11.7 - 24.2	22.8	11.7 - 33.9	13.5	6.8 - 20.2	20.2	12.6 - 27.8	23.7	13.2 - 34.2	13.1	3.8 - 22.5
	Unknown	51.1	31.2 - 71.0	52.7	26.0 - 79.5	53.1	24.0 - 82.1	41.6	27.5 - 55.7	43.1	24.0 - 62.3	37.5	17.4 - 57.6	33.2	14.3 - 52.2	38.1	14.2 - 62.0	24.2	0.0 - 51.0
Maine	All	69.9	62.0 - 77.8	70.8	62.9 - 78.7			61.9	55.5 - 68.3	60.5	54.1 - 66.9			70.7	63.9 - 77.5	69.4	62.8 - 76.0		
	Localized	91.5	84.3 - 98.6	92.1	85.1 - 99.1			92.7	87.7 - 97.8	92.1	86.7 - 97.5			88.9	82.5 - 95.2	88.9	82.5 - 95.2		
	Regional	45.2	34.0 - 56.5	45.2	34.0 - 56.5			52.3	41.1 - 63.5	50.1	38.6 - 61.6			66.4	54.2 - 78.6	64.4	52.2 - 76.7		
	Distant							13.2	1.9 - 24.5	13.2	1.9 - 24.5			30.3	14.6 - 45.9	31.2	15.2 - 47.2		
	Unknown	87.7	59.6 - 100.0	87.7	59.6 - 100.0			55.0	26.1 - 84.0										
Maryland	All	66.8	62.6 - 70.9	67.3	62.1 - 72.6	62.6	55.5 - 69.7	61.8	58.3 - 65.3	62.7	58.3 - 67.0	54.4	48.3 - 60.6	65.2	61.0 - 69.3	64.3	58.5 - 70.2	61.0	54.4 - 67.6
	Localized	84.6	78.3 - 90.9	85.2	76.8 - 93.6	75.0	66.1 - 83.9	90.4	84.8 - 96.0	89.6	82.5 - 96.8	89.8	81.2 - 98.4	93.2	86.4 - 100.0	93.2	84.9 - 100.0	90.8	82.2 - 99.4
	Regional	48.6	40.9 - 56.3	46.4	36.9 - 56.0	47.0	34.8 - 59.3	51.2	45.5 - 56.8	52.9	45.6 - 60.3	43.2	34.7 - 51.7	57.0	50.2 - 63.8	52.0	42.9 - 61.0	62.0	52.6 - 71.5
	Distant	19.3	8.3 - 30.2	15.2	0.8 - 29.6	21.0	5.5 - 36.6	17.0	11.0 - 23.1	17.9	10.2 - 25.6	14.5	4.9 - 24.1	18.6	11.3 - 26.0	19.9	10.9 - 28.9	9.2	0.0 - 19.3
	Unknown	67.1	59.3 - 74.8	68.9	60.1 - 77.6	67.1	51.4 - 82.8	60.0	51.6 - 68.3	58.9	49.3 - 68.4	50.6	32.5 - 68.8	62.5	53.4 - 71.5	53.5	35.1 - 71.8	44.7	23.5 - 65.9

Supplementary Table 1. Age-standardized five-year net survival for women (15-99 years) diagnosed with cervical cancer in 2001-2014 by SEER Summary Stage at diagnosis, race, calendar period of diagnosis, and state

Summary Stage 2000	2001-2003									2004-2008						2009-2014																									
	All women			White women			Black women			All women			White women			Black women			All women			White women			Black women																
	NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI												
Massachusetts	All	71.3	67.2 - 75.5	68.0	63.6 - 72.5	82.8	69.8 - 95.8	68.5	65.2 - 71.7	66.5	63.0 - 70.0	76.8	67.7 - 85.9	71.9	64.8 - 78.9	67.1	59.4 - 74.7	84.1	66.5 - 100.0	91.4	86.6 - 96.2	89.2	83.6 - 94.7	95.8	86.9 - 100.0	93.0	88.7 - 97.4	91.6	86.8 - 96.5	95.0	86.2 - 100.0	86.4	79.9 - 92.8	89.0	81.2 - 96.8	95.3	80.2 - 100.0				
	Localized	59.1	52.2 - 66.1	57.7	50.3 - 65.1	62.9	34.8 - 91.0	60.6	55.1 - 66.2	58.9	52.9 - 64.9	63.8	46.5 - 81.0	72.3	61.0 - 83.5	69.8	55.5 - 84.1			21.9	10.2 - 33.6	15.8	5.3 - 26.4			21.4	13.9 - 28.9	17.9	10.3 - 25.4	61.6	33.8 - 89.4	8.8	0.0 - 19.0	9.5	0.0 - 20.7						
	Regional	31.2	13.4 - 49.0	23.2	5.7 - 40.6			39.0	24.0 - 54.1	29.5	13.7 - 45.3																														
	Distant																																								
	Unknown																																								
Michigan	All	65.9	62.7 - 69.2	66.5	62.8 - 70.1	58.9	52.0 - 65.9	61.4	58.8 - 64.1	62.2	59.2 - 65.2	55.6	49.8 - 61.4	63.1	59.7 - 66.4	65.6	61.9 - 69.3	52.8	45.4 - 60.2	84.6	79.6 - 89.6	85.5	79.9 - 91.1	78.7	70.2 - 87.1	85.1	80.9 - 89.3	85.3	80.7 - 90.0	84.0	74.8 - 93.1	84.3	78.4 - 90.1	86.3	80.6 - 92.1	79.5	68.7 - 90.2				
	Localized	58.3	52.5 - 64.1	59.4	52.7 - 66.0	50.5	40.1 - 61.0	54.5	49.9 - 59.1	54.5	49.3 - 59.7	53.0	43.5 - 62.5	59.6	53.9 - 65.4	61.9	55.5 - 68.3	49.2	39.2 - 59.1	22.8	15.4 - 30.2	23.2	14.8 - 31.6	24.1	7.9 - 40.2	13.1	8.3 - 17.8	11.6	6.5 - 16.8	13.9	6.3 - 21.5	26.0	18.9 - 33.0	29.3	21.2 - 37.5	8.7	0.0 - 18.7				
	Regional	62.1	54.5 - 69.7	59.8	51.2 - 68.3	55.5	35.5 - 75.5	47.2	41.0 - 53.3	47.9	40.7 - 55.1	32.1	16.6 - 47.7	47.8	39.5 - 56.0	50.9	42.1 - 59.7	31.4	8.5 - 54.3																						
	Distant																																								
	Unknown																																								
Minnesota	All	68.6	63.6 - 73.7	68.1	62.6 - 73.5	73.8	55.9 - 91.8	68.2	64.2 - 72.2	68.3	64.0 - 72.6	55.0	39.3 - 70.6	72.3	67.4 - 77.2	71.9	66.4 - 77.3	60.5	41.6 - 79.4	91.6	86.3 - 96.9	92.5	87.3 - 97.6	78.5	55.5 - 100.0	89.5	83.8 - 95.2	88.1	82.0 - 94.2	80.1	62.0 - 98.2	93.5	85.8 - 100.0	95.1	90.0 - 100.0	93.7	78.5 - 100.0				
	Localized	56.8	48.4 - 65.3	54.8	45.7 - 63.9	80.3	56.8 - 100.0	62.3	55.8 - 68.8	62.7	55.6 - 69.7	41.5	17.4 - 65.6	61.9	54.5 - 69.3	62.7	54.6 - 70.9	38.9	9.7 - 68.0	24.1	12.0 - 36.1	24.2	11.5 - 36.9			21.3	12.3 - 30.3	21.6	12.3 - 30.8			29.0	18.7 - 39.3	26.7	13.7 - 39.8						
	Regional																																								
	Distant																																								
	Unknown																																								
Mississippi	All	55.5	49.5 - 61.5	65.6	57.0 - 74.2	44.9	37.2 - 52.6	53.4	49.1 - 57.6	60.1	54.3 - 65.9	44.6	39.0 - 50.2	55.3	50.5 - 60.1	59.0	51.9 - 66.1	51.2	45.1 - 57.3	75.0	66.4 - 83.5	88.7	80.8 - 96.6	73.5	60.6 - 86.5	73.2	66.3 - 80.2	80.2	73.2 - 87.1	67.9	58.9 - 76.9	81.3	73.5 - 89.1	79.2	68.5 - 90.0	83.5	74.9 - 92.1				
	Localized	45.2	34.7 - 55.7	56.1	39.9 - 72.3	35.0	20.7 - 49.3	48.4	41.8 - 55.0	58.5	49.0 - 67.9	38.0	29.8 - 46.2	46.1	39.1 - 53.0	53.9	43.0 - 64.9	45.7	36.8 - 54.6	5.6	0.0 - 12.3	6.3	0.0 - 15.9	5.0	0.0 - 12.7	13.5	7.7 - 19.4	8.3	3.0 - 13.6	16.2	6.2 - 26.1	18.3	11.1 - 25.6	23.2	8.5 - 37.9	8.3	0.0 - 16.7				
	Regional	58.6	38.3 - 79.0	56.0	22.5 - 89.5	59.5	36.2 - 82.7	46.6	28.5 - 64.6	41.0	19.9 - 62.1	47.5	21.1 - 73.9	29.8	4.3 - 55.3	40.0	5.9 - 74.1	36.4	12.1 - 60.8																						
	Distant																																								
	Unknown																																								
Montana	All	68.2	58.8 - 77.5	70.1	60.4 - 79.9			66.1	57.0 - 75.2	67.8	60.3 - 75.4			66.4	58.1 - 74.7	66.2	57.4 - 75.0			87.8	77.1 - 98.6	88.3	76.9 - 99.7			92.5	84.9 - 100.0	91.4	82.9 - 99.9			94.5	85.8 - 100.0	93.2	82.9 - 100.0						
	Localized	68.8	54.0 - 83.5	70.5	55.2 - 85.9			55.4	43.3 - 67.5	53.0	37.0 - 69.1			61.7	49.7 - 73.8	67.3	51.4 - 83.2																								
	Regional							21.3	3.9 - 38.7	23.8	4.7 - 42.9			17.5	1.8 - 33.1	18.1	2.0 - 34.2																								
	Distant																																								
	Unknown																																								
Nebraska	All	65.8	58.0 - 73.6	66.7	58.7 - 74.7			62.9	56.4 - 69.3	63.2	56.7 - 69.8			57.7	49.5 - 66.0	54.4	46.4 - 62.4	71.1	45.5 - 96.7	97.7	93.1 - 100.0	97.4	92.8 - 100.0			84.4	78.9 - 89.9	92.9	87.3 - 98.5			95.1	89.5 - 100.0	93.4	87.4 - 99.4						
	Localized	61.0	50.3 - 71.8	61.6	50.1 - 73.1			62.5	54.0 - 70.9	64.5	55.8 - 73.2			45.1	34.5 - 55.6	42.1	31.1 - 53.2	74.8	44.3 - 100.0																						
	Regional	15.2	0.6 - 29.8	16.9	0.9 - 32.9			27.0	13.0 - 40.9	26.0	11.7 - 40.3			18.9	7.0 - 30.7	19.6	7.4 - 31.9																								
	Distant							33.6	10.2 - 56.9	27.7	2.5 - 52.8			32.9	0.0 - 67.4	35.0	0.0 - 71.5																								
	Unknown																																								
New Hampshire	All	71.1	60.2 - 82.0	71.1	60.1 - 82.0			64.6	57.5 - 71.7	64.6	57.5 - 71.7			71.1	63.2 - 78.9	70.9	62.9 - 78.9			91.0	82.6 - 99.3	90.8	82.4 - 99.3			96.1	91.2 - 100.0	96.1	91.0 - 100.0			98.0	91.3 - 100.0	97.8	90.6 - 100.0						
	Localized	63.9	50.1 - 77.7	63.9	50.1 - 77.7			52.0	43.5 - 60.6	52.0	43.5 - 60.6			67.0	53.2 - 80.9	67.0	53.2 - 80.8																								
	Regional	14.4	0.0 - 30.5	14.4	0.0 - 30.5			9.2	0.0 - 20.1	5.4	0.0 - 13.6			22.6	5.2 - 40.0	22.6	5.2 - 40.0																								
	Distant	46.2	11.1 - 81.3	46.2	11.1 - 81.3			93.0	75.9 - 100.0					69.4	43.2 - 95.6	74.2	47.3 - 100.0																								
	Unknown																																								
New Jersey	All	61.7 §	58.6 - 64.8	62.9 §	59.4 - 66.4	52.9 §	45.8 - 60.0	63.2 §	60.8 - 65.6	64.6 §	61.8 - 67.3	55.6 §	50.0 - 61.1	60.6 §	57.7 - 63.6	64.6 §	61.3 - 67.8	42.5 §	36.0 - 49.1	85.7 §	80.7 - 90.7	86.6 §	80.9 - 92.3	77.7 §	67.8 - 87.5	86.9 §	83.1 - 90.7	87.2 §	83.0 - 91.5	83.5 §	76.4 - 90.5	86.9 §	82.5 - 91.3	89.1 §	84.6 - 93.6	78.9 §	69.8 - 88.0				
	Localized	52.4 §	47.5 - 57.3	54.3 §	48.8 - 59.8	44.1 §	34.3 - 53.9	54.2 §	50.4 - 57.9	55.3 §	51.1 - 59.6	48.6 §	40.0 - 57.2	53.0 §	48.0 - 58.0	5																									

Supplementary Table 1. Age-standardized five-year net survival for women (15-99 years) diagnosed with cervical cancer in 2001-2014 by SEER Summary Stage at diagnosis, race, calendar period of diagnosis, and state

State	Summary Stage 2000	2001-2003									2004-2008									2009-2014											
		All women			White women			Black women			All women			White women			Black women			All women			White women			Black women					
		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI		NS (%)	95% CI	
New York	All	64.1	62.0 - 66.2		62.6	60.1 - 65.1		60.9	56.8 - 65.0		66.0	64.4 - 67.6		65.3	63.3 - 67.2		61.1	57.9 - 64.2		63.4	61.4 - 65.5		63.2	60.6 - 65.8		58.5	54.4 - 62.7		62.7	60.6 - 65.8	
	Localized	82.9	79.6 - 86.1		82.5	78.5 - 86.5		79.4	73.2 - 85.6		86.9	84.6 - 89.2		85.1	82.2 - 88.1		86.2	81.6 - 90.7		89.0	85.8 - 92.1		88.8	84.1 - 93.4		86.8	81.6 - 92.0		92.0	81.6 - 92.0	
	Regional	55.1	51.5 - 58.7		53.0	48.7 - 57.4		52.9	46.1 - 59.7		56.5	53.9 - 59.1		56.1	52.9 - 59.3		52.8	47.8 - 57.8		54.1	50.4 - 57.8		52.7	48.1 - 57.3		53.1	46.3 - 59.9		59.9	46.3 - 59.9	
	Distant	15.1	10.5 - 19.8		15.3	9.6 - 21.0		16.3	7.9 - 24.7		18.6	14.8 - 22.5		22.8	17.6 - 28.0		11.3	6.4 - 16.2		19.3	15.2 - 23.4		20.1	15.1 - 25.1		13.3	7.8 - 18.9		18.9	7.8 - 18.9	
	Unknown	64.1	58.9 - 69.3		57.8	51.6 - 64.1		60.5	49.8 - 71.2		66.9	61.7 - 72.2		65.5	59.2 - 71.9		56.2	44.7 - 67.8		67.1	59.8 - 74.4		64.4	54.8 - 74.1		53.4	37.2 - 69.5		69.5	37.2 - 69.5	
North Carolina	All	62.3	58.6 - 66.0		64.8	60.1 - 69.6		52.7	46.1 - 59.3		63.7	61.0 - 66.5		66.0	62.6 - 69.4		56.0	51.1 - 60.9		61.9	58.6 - 65.3		62.2	58.1 - 66.3		57.1	51.2 - 63.0		63.0	51.2 - 63.0	
	Localized	79.7	74.6 - 84.8		79.4	72.9 - 85.8		75.3	66.8 - 83.8		83.2	79.3 - 87.2		84.9	80.3 - 89.4		75.3	67.8 - 82.9		92.3	86.9 - 97.6		91.8	85.0 - 98.6		89.8	83.3 - 96.3		96.3	83.3 - 96.3	
	Regional	50.3	44.2 - 56.3		53.1	45.8 - 60.5		40.3	30.3 - 50.2		57.0	52.6 - 61.4		59.1	53.5 - 64.6		49.9	42.0 - 57.8		52.9	47.2 - 58.5		50.9	44.1 - 57.8		52.5	44.0 - 61.0		61.0	44.0 - 61.0	
	Distant	7.5	3.2 - 11.8		16.0	6.2 - 25.8		0.0	0.0 - 0.0		15.5	10.3 - 20.6		14.4	8.3 - 20.5		20.3	11.4 - 29.2		16.7	12.0 - 21.5		17.6	12.0 - 23.2		16.6	8.1 - 25.1		25.1	8.1 - 25.1	
	Unknown	53.7	36.3 - 71.0		67.1	46.2 - 88.1		25.1	2.7 - 47.6		35.8	23.3 - 48.2		39.8	23.9 - 55.8		23.3	4.3 - 42.4		51.7	40.9 - 62.5		44.7	26.6 - 62.7		36.7	14.4 - 59.0		59.0	14.4 - 59.0	
Ohio	All	60.0	57.1 - 63.0		61.2	58.0 - 64.5		48.3	40.5 - 56.2		59.4	57.0 - 61.7		60.2	57.6 - 62.8		53.2	47.3 - 59.2		57.6	54.3 - 60.9		57.6	54.0 - 61.3		49.7	42.0 - 57.4		57.4	42.0 - 57.4	
	Localized	81.2	76.3 - 86.1		82.9	77.7 - 88.1		73.5	62.5 - 84.4		85.4	81.6 - 89.3		85.7	81.5 - 90.0		82.5	75.6 - 89.3		82.6	76.1 - 89.1		82.7	76.5 - 89.0		88.4	79.3 - 97.6		97.6	79.3 - 97.6	
	Regional	47.3	42.1 - 52.5		48.9	43.2 - 54.5		40.6	27.0 - 54.3		51.3	47.8 - 54.8		53.4	49.5 - 57.2		38.1	29.7 - 46.4		52.9	47.1 - 57.9		52.9	46.8 - 59.0		47.5	36.7 - 58.3		58.3	36.7 - 58.3	
	Distant	10.7	5.6 - 15.8		8.6	3.7 - 13.5		24.8	5.2 - 44.5		11.1	7.3 - 14.9		10.9	6.9 - 14.9		11.6	1.6 - 21.6		14.6	10.2 - 19.1		14.1	9.3 - 19.0		12.6	1.2 - 24.0		24.0	1.2 - 24.0	
	Unknown	48.9	41.0 - 56.9		47.4	38.8 - 56.0		35.9	14.5 - 57.4		35.2	27.3 - 43.0		32.4	23.5 - 41.3		27.2	7.9 - 46.6		42.5	33.4 - 51.6		35.3	25.8 - 44.7		44.7	25.8 - 44.7		44.7	25.8 - 44.7	
Oklahoma	All	59.3	53.9 - 64.7		59.6	53.7 - 65.5		52.6	37.7 - 67.5		61.4	57.4 - 65.5		61.1	56.7 - 65.5		48.8	32.1 - 65.5		60.1	54.1 - 66.2		61.4	54.5 - 68.2		50.5	30.8 - 70.2		70.2	30.8 - 70.2	
	Localized	75.3	67.9 - 82.7		73.1	64.9 - 81.2		74.3	54.9 - 93.7		88.6	81.3 - 95.9		87.6	79.3 - 95.8		79.6	50.1 - 100.0		80.9	70.7 - 91.1		85.6	77.8 - 93.5		83.5	73.5 - 94.1		94.1	73.5 - 94.1	
	Regional	59.1	49.6 - 68.7		61.6	51.0 - 72.2		43.4	20.3 - 66.6		56.9	50.8 - 62.9		56.7	50.3 - 63.2		34.9	13.6 - 56.2		53.8	45.8 - 61.9		58.2	48.7 - 67.8		67.8	48.7 - 67.8		67.8	48.7 - 67.8	
	Distant	10.7	3.0 - 18.3		11.8	2.6 - 21.0					17.4	11.1 - 23.7		17.5	10.8 - 24.1					19.8	9.5 - 30.0		24.2	10.8 - 37.6		37.6	10.8 - 37.6		37.6	10.8 - 37.6	
	Unknown	31.8	14.6 - 48.9		31.1	12.3 - 49.9					58.8	49.5 - 68.1		66.3	53.0 - 79.6					76.0	61.2 - 90.7		70.3	50.6 - 90.0		90.0	50.6 - 90.0		90.0	50.6 - 90.0	
Oregon	All	60.2	54.0 - 66.3		61.2	54.4 - 68.0		37.4	9.8 - 65.0		65.6	61.1 - 70.1		64.8	60.1 - 69.5		68.8	43.3 - 94.3		64.4	59.0 - 69.7		64.0	58.5 - 69.5		69.5	58.5 - 69.5		69.5	58.5 - 69.5	
	Localized	89.4	84.6 - 94.2		89.4	84.3 - 94.4					87.5	81.2 - 93.8		87.6	81.1 - 94.1					84.6	74.5 - 94.6		84.0	73.9 - 94.2		94.2	73.9 - 94.2		94.2	73.9 - 94.2	
	Regional	48.7	39.8 - 57.5		57.2	47.8 - 66.6					59.3	52.6 - 66.0		57.3	50.4 - 64.3					61.9	54.8 - 69.0		61.4	53.9 - 69.0		69.0	53.9 - 69.0		69.0	53.9 - 69.0	
	Distant	19.0	5.5 - 32.5		18.1	4.1 - 32.2					18.5	9.9 - 27.2		20.1	10.8 - 29.4					22.1	10.7 - 33.5		22.1	10.7 - 33.9		33.9	10.7 - 33.9		33.9	10.7 - 33.9	
	Unknown	50.4	21.1 - 79.7							30.6	11.0 - 50.1		28.3	8.4 - 48.3					24.7	5.7 - 43.7		29.1	7.5 - 50.7		50.7	7.5 - 50.7		50.7	7.5 - 50.7		
Pennsylvania	All	60.3	57.5 - 63.1		61.3	58.2 - 64.3		50.2	43.1 - 57.4		62.3	60.2 - 64.5		62.5	60.2 - 64.8		54.7	49.0 - 60.4		62.5	59.8 - 65.2		63.2	60.2 - 66.2		55.0	48.2 - 61.7		61.7	48.2 - 61.7	
	Localized	82.3	77.9 - 86.7		84.3	79.6 - 89.1		71.7	62.9 - 80.5		87.0	83.3 - 90.7		88.4	84.5 - 92.3		78.3	70.3 - 86.3		89.3	84.7 - 93.8		90.6	85.8 - 95.5		83.8	73.5 - 94.1		94.1	73.5 - 94.1	
	Regional	47.4	42.8 - 51.9		48.3	43.3 - 53.3		39.8	30.0 - 49.5		56.0	52.6 - 59.4		55.4	51.7 - 59.0		52.6	43.8 - 61.3		57.9	53.3 - 62.5		58.9	53.7 - 64.1		47.0	37.0 - 57.0		57.0	37.0 - 57.0	
	Distant	9.8	5.1 - 14.6		9.9	4.7 - 15.1		4.3	0.0 - 10.9		13.6	9.7 - 17.5		14.1	9.8 - 18.5		9.7	3.3 - 16.0		14.3	9.9 - 18.7		14.6	10.0 - 19.2		12.2	2.8 - 21.6		21.6	2.8 - 21.6	
	Unknown	52.8	41.9 - 63.8		47.5	33.5 - 61.5					54.6	45.5 - 63.7		45.3	33.3 - 57.3		49.3	25.4 - 73.2		57.9	49.5 - 66.4		48.8	34.9 - 62.7		47.7	23.4 - 72.0		72.0	23.4 - 72.0	
Rhode Island	All	77.6	69.3 - 85.9		77.2	68.5 - 86.0					68.0	60.9 - 75.0		65.3	57.7 - 72.9		84.8	68.5 - 100.0		76.1	66.7 - 85.4		73.4	63.5 - 83.3		83.3	63.5 - 83.3		83.3	63.5 - 83.3	
	Localized	95.5	88.8 - 100.0		95.1	88.1 - 100.0					92.9	86.0 - 99.9		99.6	95.4 - 100.0		100.0	69.2 - 100.0		87.6	77.9 - 97.2		87.5	77.8 - 97.1		97.1	77.8 - 97.1		97.1	77.8 - 97.1	
	Regional	47.0	27.0 - 66.9		45.9	24.4 - 67.5					61.9	51.1 - 72.8		49.7	36.3 - 63.0					64.9	48.9 - 80.8		62.1	45.8 - 78.5		78.5	45.8 - 78.5		78.5	45.8 - 78.5	
	Distant										18.9	2.1 - 35.7		19.9	2.2 - 37.5					12.2	0.0 - 27.7		11.9	0.0 - 26.9		26.9	0.0 - 26.9		26.9	0.0 - 26.9	
	Unknown									25.3	2.6 - 48.1		30.4	4.2 - 56.6																	
South Carolina	All	61.9	57.2 - 66.6		62.9	56.8 - 69.0		57.7	50.6 - 64.8		61.0	57.1 - 65.0		65.2	60.0 - 70.3		52.3	46.0 - 58.5		58.3	54.1 - 62.6		61.2	56.0 - 66.3		50.5	43.3 - 57.8		57.8	43.3 - 57.8	
	Localized	79.8	72.6 - 87.0		77.6	71.1 - 84.1		81.1	70.9 - 91.2		77.0	71.4 - 82.5		79.3	72.0 - 86.6		72.5	63.7 - 81.3		83.6	77.4 - 89.8		86.5	79.0 - 93.9		76.7	67.6 - 85.7		85.7	67.6 - 85.7	
	Regional	41.4	33.9 - 48.9		43.0	32.7 - 53.3		36.9	26.0 - 47.9		55.6	49.2 - 62.0		63.0	55.0 - 70.9		41.8	32.4 - 51.1		52.9	45.8 - 60.0		55.2	47.0 - 63.5		42.7	31.9 - 53.5				

Supplementary Table 1. Age-standardized five-year net survival for women (15-99 years) diagnosed with cervical cancer in 2001-2014 by SEER Summary Stage at diagnosis, race, calendar period of diagnosis, and state

State	Summary Stage 2000	2001-2003						2004-2008						2009-2014					
		All women		White women		Black women		All women		White women		Black women		All women		White women		Black women	
		NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI	NS (%)	95% CI
Texas	All	63.6	61.5 - 65.8	64.2	61.8 - 66.5	56.3	50.6 - 62.0	62.1	60.4 - 63.8	63.1	61.2 - 64.9	51.2	46.8 - 55.6	63.8	61.2 - 66.3	64.7	61.8 - 67.7	57.0	52.1 - 61.9
	Localized	82.8	79.7 - 85.9	82.3	79.0 - 85.7	78.6	70.7 - 86.6	84.5	81.6 - 87.5	84.6	81.4 - 87.8	75.1	67.1 - 83.2	83.3	77.1 - 89.6	85.6	78.2 - 93.1	76.0	66.8 - 85.3
	Regional	51.6	47.8 - 55.3	51.9	47.8 - 56.1	42.5	33.4 - 51.6	54.1	51.4 - 56.8	54.8	51.9 - 57.8	47.4	40.6 - 54.2	60.0	56.4 - 63.7	60.6	56.5 - 64.7	54.9	46.4 - 63.5
	Distant	17.1	12.7 - 21.4	18.9	14.0 - 23.8	7.3	0.0 - 14.8	15.7	12.6 - 18.7	15.1	11.8 - 18.4	16.1	9.6 - 22.5	17.7	14.1 - 21.4	16.4	12.6 - 20.3	17.2	11.5 - 22.9
	Unknown	63.5	58.2 - 68.7	66.8	61.0 - 72.7	48.6	35.0 - 62.3	64.1	59.5 - 68.6	65.1	60.2 - 70.1	54.5	42.9 - 66.0	62.1	57.2 - 67.0	62.4	57.0 - 67.9	57.3	46.4 - 68.2
Utah	All	62.8	54.9 - 70.8	62.3	54.2 - 70.5			61.1	54.7 - 67.5	61.3	54.7 - 67.9			58.2	49.5 - 66.8	59.2	50.7 - 67.8		
	Localized	91.9	85.9 - 97.8	91.3	85.1 - 97.6			90.3	85.0 - 95.6	90.6	85.2 - 96.0			81.6	70.9 - 92.4	81.5	70.7 - 92.4		
	Regional	67.3	52.4 - 82.3	66.5	50.8 - 82.2			57.3	48.3 - 66.4	57.8	48.6 - 67.0			53.6	39.4 - 67.7	55.0	40.9 - 69.1		
	Distant	6.2	0.0 - 15.5	6.6	0.0 - 16.4			0.0	0.0 - 0.0	0.0	0.0 - 0.0			25.3	7.5 - 43.0	20.1	3.0 - 37.1		
	Unknown																		
Vermont	All	70.7	59.7 - 81.7	69.9	58.6 - 81.1			62.2	51.9 - 72.5	62.2	51.9 - 72.5			67.0	57.3 - 76.7	66.9	57.2 - 76.6		
	Localized	89.4	79.8 - 99.1	89.2	79.4 - 99.0			85.0	73.9 - 96.0	85.0	73.9 - 96.0			92.3	82.6 - 100.0	92.2	82.2 - 100.0		
	Regional	64.0	41.0 - 86.9	64.0	41.0 - 86.9			49.8	33.1 - 66.5	49.8	33.1 - 66.5			30.6	1.8 - 59.3	30.6	1.8 - 59.3		
	Distant																		
	Unknown													0.9	0.0 - 3.1	0.9	0.0 - 3.1		
Washington	All	67.4	62.9 - 71.9	66.9	62.0 - 71.7	74.1	54.6 - 93.5	64.4	60.8 - 68.0	63.2	59.5 - 67.0	74.0	57.1 - 90.9						
	Localized	84.8	77.8 - 91.7	84.9	77.7 - 92.1	76.4	52.4 - 100.0	90.8	85.0 - 96.6	89.5	83.1 - 96.0	89.5	72.6 - 100.0						
	Regional	58.6	52.0 - 65.2	56.5	49.5 - 63.4			62.7	57.3 - 68.1	61.6	55.9 - 67.3								
	Distant	31.6	21.0 - 42.2	31.7	18.5 - 44.9			18.5	12.2 - 24.7	18.7	12.3 - 25.1								
	Unknown	58.3	36.6 - 80.0	59.2	36.5 - 82.0			74.5	60.1 - 88.9	67.6	50.3 - 84.8								
West Virginia	All	60.7	54.7 - 66.6	62.1	56.0 - 68.2	20.6	0.0 - 42.7	56.9	51.9 - 61.9	56.6	51.5 - 61.7	54.7	30.3 - 79.0	57.9	51.8 - 64.0	58.1	51.9 - 64.3		
	Localized	82.8	74.3 - 91.4	82.7	74.0 - 91.3			78.8	71.2 - 86.3	79.5	71.8 - 87.2			78.6	71.2 - 86.0	78.5	71.1 - 85.9		
	Regional	39.0	28.2 - 49.8	40.8	29.4 - 52.2			51.2	43.1 - 59.3	49.9	41.5 - 58.4			54.2	44.5 - 63.9	54.0	44.0 - 63.9		
	Distant	13.7	2.0 - 25.5	15.3	2.4 - 28.1			10.2	2.8 - 17.6	10.6	3.0 - 18.2			15.4	7.8 - 23.0	14.8	7.1 - 22.6		
	Unknown	58.5	42.5 - 74.5	59.9	43.7 - 76.0			57.2	38.9 - 75.4	55.8	37.2 - 74.3			42.6	20.0 - 65.2	44.4	21.1 - 67.7		
Wisconsin	All	68.4	63.6 - 73.2	71.1	66.0 - 76.1	59.9	45.3 - 74.6	66.1	62.3 - 70.0	67.0	62.8 - 71.1	61.6	50.0 - 73.1	67.8	62.7 - 72.8	69.5	64.1 - 74.9	66.4	55.4 - 77.3
	Localized	81.6	75.0 - 88.1	84.1	77.9 - 90.3	79.2	61.0 - 97.4	85.5	79.3 - 91.8	85.8	79.1 - 92.5	86.1	72.7 - 99.4	92.2	85.7 - 98.6	91.3	84.5 - 98.2	92.7	82.9 - 100.0
	Regional	55.7	47.1 - 64.3	58.5	49.3 - 67.8	51.0	28.3 - 73.6	61.0	54.9 - 67.2	62.6	55.8 - 69.3	51.0	32.9 - 69.2	60.2	52.1 - 68.3	61.3	52.8 - 69.9	66.9	46.1 - 87.7
	Distant	15.5	3.6 - 27.5	16.8	2.6 - 31.0			17.6	10.8 - 24.4	18.3	10.8 - 25.9			29.7	20.5 - 39.0	33.3	22.8 - 43.9	14.2	0.0 - 29.1
	Unknown	84.8	71.6 - 98.1	83.9	70.0 - 97.8			41.3	18.8 - 63.8	29.9	7.9 - 52.0			44.0	17.4 - 70.6				
Wyoming	All	74.4	62.4 - 86.5	73.3	61.2 - 85.4			64.4	54.9 - 73.8	65.6	56.1 - 75.1			54.3	44.1 - 64.5	53.4	42.7 - 64.0		
	Localized	94.6	85.6 - 100.0	94.6	85.6 - 100.0			82.8	72.9 - 92.8	84.3	74.6 - 93.9			79.8	60.7 - 99.0	79.2	58.4 - 100.0		
	Regional	60.8	38.8 - 82.8	56.9	34.8 - 79.1			45.0	27.0 - 63.0	45.0	27.0 - 63.0			70.5	52.4 - 88.7	69.1	50.3 - 88.0		
	Distant							27.6	3.3 - 51.8	30.2	4.1 - 56.4			0.0	0.0 - 0.0	0.0	0.0 - 0.0		
	Unknown																		

a [§] Survival estimate considered less reliable, because 15% or more of patients were (a) lost to follow-up or censored alive within five years of diagnosis (or if diagnosed in 2010 or later, before December 31, 2014), or (b) registered only from a death certificate or at autopsy, or (c) registered with incomplete dates, i.e., unknown year of birth, unknown month and/or year of diagnosis or unknown year of last vital status

b Italics denote survival estimates that are not age-standardized

c Survival estimates of 100% that are shown without a confidence interval are those for which the first event (either death or censoring) in that group of patients occurred more than five years after diagnosis

Supplementary Figure 1. Age-standardized five-year net survival (%) for women (aged 15-99 years) diagnosed with cervical cancer during 2001-2014, by SEER Summary Stage at diagnosis.

Footnote: The circles in the figure represent state-specific survival estimates. Open circles represent the state-specific estimate for White women and closed circles represent the state-specific estimate for Black women. The pooled (US) survival estimates for each calendar period are shown by the horizontal (solid) line with corresponding 95.0% and 99.8% control limits (dotted lines)

Supplementary Figure 1.

