

11. ONLINE RESOURCE

Online Resource Fig 1. Converting the Physical Component Summary 12 (PCS-12) and the Mental Component Summary 12 (MCS-12) scores into a quality-of-life (QoL) utility

Online Resource Figs 2a and b. A graphical illustration of the survival functions to estimate (a) Δ LE and (b) Δ QALE per woman for each race/ethnicity-cervical cancer stage group

Online Resource Table 3a. Cervical cancer stage distribution for participants aged 18-64 years from NBCCEDP MDE, 2010-2013

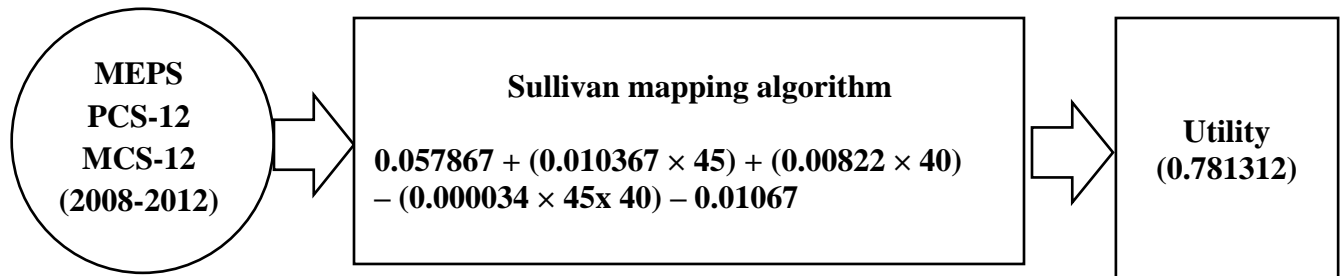
Online Resource Table 3b. Cervical cancer stage distribution for non-participants aged 18-64 years from SEER-18, 2007-2013

Online Resource Table 4. Raw data from SEER-18 registry data (2000-2013), MEPS (2008-2012), and U.S. life tables (2000-2013) for women aged 18-64 years used to estimate LYs saved and QALE gained per person

12. ONLINE RESOURCE MATERIAL

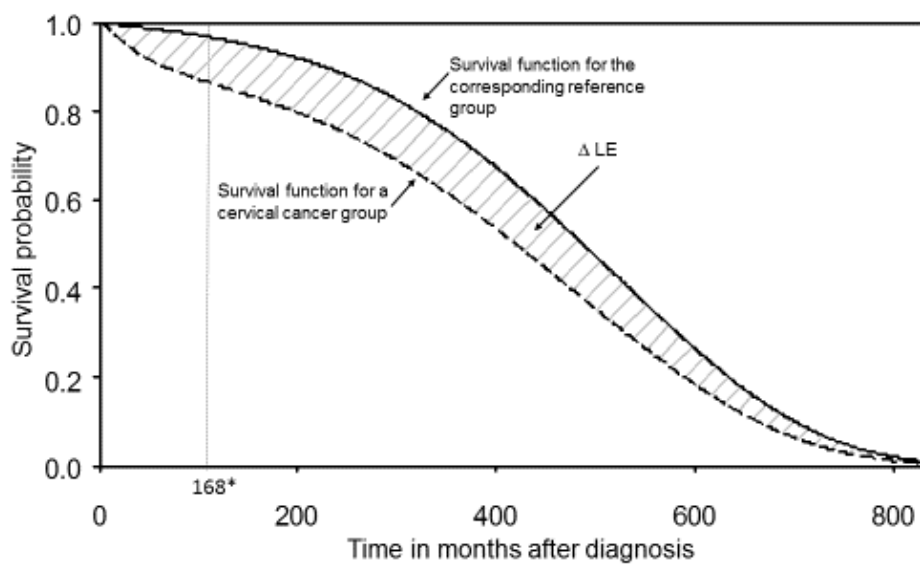
Online Resource Fig. 1. Converting the Physical Component Summary 12 (PCS-12) and the Mental Component Summary 12 (MCS-12) scores into a quality-of-life (QoL) utility

Utility = $0.057867 + (0.010367 \times \text{PCS-12}) + (0.00822 \times \text{MCS-12}) - (0.000034 \times \text{PCS-12} \times \text{MCS-12}) - 0.01067$ [16]. For example, if PCS-12 = 45 and MCS-12 = 40, then utility = 0.781312.

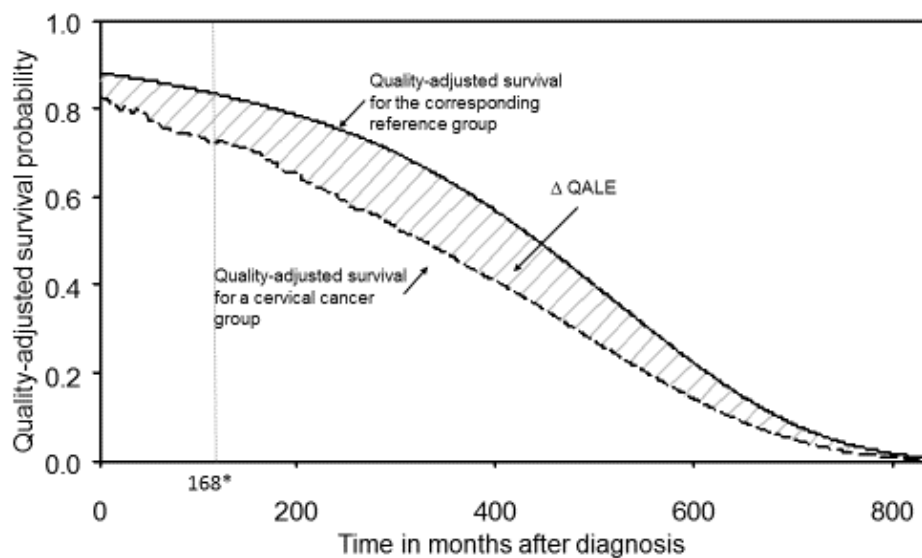


Online Resource Figs 2a and b. A graphical illustration of the survival functions to estimate (a) ΔLE and (b) $\Delta QALE$ per woman for each race/ethnicity-cervical cancer stage group

a. Survival functions to estimate ΔLE per woman



b. Survival functions to estimate $\Delta QALE$ per woman



Online Resource Table 3a. Cervical cancer stage distribution for participants^a aged 18-64 years from NBCCEDP MDE, 2010-2013

	Cervical Cancer Stage Distribution from NBCCEDP MDE, n (%)							
	Number	No cancer	Pre-cancer	Local	Regional	Distant	Unknown	
Overall	916,694	870,663 (94.98)	44,965 (4.91)	245 (0.03)	258 (0.03)	82 (0.01)	481 (0.05)	
Race/Ethnicity								
NHW	408,465	386,911 (94.72)	20,941 (5.13)	149 (0.04)	159 (0.04)	53 (0.01)	252 (0.06)	
NHB	129,022	123,758 (95.92)	5,146 (3.99)	24 (0.02)	35 (0.03)	9 (0.01)	50 (0.04)	
Hispanic	260,751	244,812 (93.89)	15,684 (6.02)	54 (0.02)	41 (0.02)	14 (0.01)	146 (0.06)	
		Cervical Cancer Stage Distribution (%) ^b				Recomputed Cervical Cancer Stage Distribution (%) ^c		
		No Cancer/Pre-cancer	Local	Regional	Distant	Local	Regional	Distant
Overall		99.8968	0.0398	0.0413	0.0221	38.62	39.99	21.39
Race/Ethnicity								
NHW		99.8653	0.0519	0.0543	0.0284	38.55	40.36	21.09
NHB		99.9182	0.0283	0.0368	0.0167	34.60	45.02	20.38
Hispanic		99.9162	0.0347	0.0297	0.0194	41.42	35.47	23.11

National Breast and Cervical Cancer Early Detection Program minimum data elements, NBCCEDP MDE; NHW, Non-Hispanic White; NHB, Non-Hispanic Black

^aParticipants = NBCCEDP MDE program-eligible women who received NBCCEDP-funded Pap tests

^bExample for the overall group: $Local\ Stage_{Overall} = \frac{245 + \frac{481}{4}}{916,694} * 100 = 0.0398$; $Regional\ Stage_{Overall} = \frac{258 + \frac{481}{4}}{916,694} * 100 = 0.0413$;

$Distant\ Stage_{Overall} = \frac{82 + \frac{481}{4}}{916,694} * 100 = 0.0221$

^cExample for the overall group: $Local\ Stage_{Overall} = \frac{0.0398}{0.0398 + 0.0413 + 0.0221} * 100 = 38.56$;

$Regional\ Stage_{Overall} = \frac{0.0413}{0.0398 + 0.0413 + 0.0221} * 100 = 40.02$; $Distant\ Stage_{Overall} = \frac{0.0221}{0.0398 + 0.0413 + 0.0221} * 100 = 21.41$.

The results derived from these formulas will not exactly match all of the numbers reported in the table due to rounding cervical cancer stage distribution values.

Online Resource Table 3b. Cervical cancer stage distribution for non-participants^a aged 18-64 years from SEER-18, 2007-2013^b

	Cervical Cancer Stage Distribution from SEER-18, n (%)			
	Local	Regional	Distant	Unknown
Overall	613 (3.26)	705 (3.75)	259 (1.38)	77 (0.41)
Race/Ethnicity				
NHW	221 (20.16)	313 (28.56)	121 (11.04)	29 (2.65)
NHB	82 (7.48)	155 (14.14)	55 (5.02)	14 (1.28)
Hispanic	270 (16.32)	193 (11.67)	70 (4.23)	25 (1.51)

	Estimated Cervical Cancer Stage Distribution (%) ^c				Recomputed Cervical Cancer Stage Distribution (%) ^d		
	No Cancer/Pre-cancer	Local	Regional	Distant	Local	Regional	Distant
Overall	99.7985	0.0727	0.0784	0.0506	36.03	38.88	25.09
Race/Ethnicity							
NHW	99.7625	0.0797	0.0978	0.0600	33.55	41.18	25.27
NHB	99.8383	0.0498	0.0693	0.0426	30.80	42.86	26.34
Hispanic	99.7956	0.0820	0.0704	0.0520	40.12	34.46	25.42

National Breast and Cervical Cancer Early Detection Program minimum data elements, NBCCEDP MDE; Surveillance, Epidemiology, and End Results 18, SEER-18; NHW, Non-Hispanic White; NHB, Non-Hispanic Black

^aNon-participants = NBCCEDP MDE program-eligible women who did not receive NBCCEDP-funded Pap test.

^bTo proxy eligibility for non-participants for the NBCCEDP MDE program, cervical cancer stage distribution was obtained for non-insured women 18-64 years from SEER-18, 2007-2013. Percentages will not sum to 100% because only non-insured women were used to proxy eligibility for non-participants.

^cExample for the overall group: $Local\ Stage_{Overall} = (100 - 94.98 - 4.91) * \frac{[\frac{613}{18,813} + \frac{77}{18,813}(\frac{1}{3})]}{\frac{1,654}{18,813}} + \frac{[4.91 - (4.91 * 0.98)]}{3} = 0.0727$;

$Regional\ Stage_{Overall} = (100 - 94.98 - 4.91) * \frac{[\frac{705}{18,813} + \frac{77}{18,813}(\frac{1}{3})]}{\frac{1,654}{18,813}} + \frac{[4.91 - (4.91 * 0.98)]}{3} = 0.0784$; $Distant\ Stage_{Overall} =$

$(100 - 94.98 - 4.91) * \frac{[\frac{259}{18,813} + \frac{77}{18,813}(\frac{1}{3})]}{\frac{1,654}{18,813}} + \frac{[4.91 - (4.91 * 0.98)]}{3} = 0.0506$. Notes: (a) 18,813 is the total number of insured and uninsured women with cervical cancer in SEER-18, 2007-2013, (b) 1,654 is the total number of uninsured women with cervical cancer in SEER-

18, 2007-2013; and (c) section 2.4.3 outlines the assumptions made to estimate cervical cancer stage distribution: (1) the percentages of women with cervical cancer are the same for participants and non-participants; (2) 2% of participants with pre-cancer would have been diagnosed with a more advanced stage if they had not participated; and (3) the percentage of women with unknown stage was equally distributed across the other three cancer stages (local, regional, distant).

^dExample for the overall group: $Local\ Stage_{Overall} = \frac{0.0727}{0.0727+0.0784+0.0506} * 100 = 36.03$;

$Regional\ Stage_{Overall} = \frac{0.0784}{0.0727+0.0784+0.0506} * 100 = 38.87$; $Distant\ Stage_{Overall} = \frac{0.0506}{0.0727+0.0784+0.0506} * 100 = 25.09$.

The results derived from these formulas will not exactly match all of the numbers reported in the table due to rounding estimated cervical cancer stage distribution values.

Online Resource Table 4. Data from SEER-18 registry data (2000-2013), MEPS (2008-2012), and U.S. life tables (2000-2013) for women aged 18-64 years used to estimate LYs saved and QALE gained per person

SEER-18	Cervical cancer cases			Stage distribution (%)			Mean age at diagnosis \pm SD			
	Number (%)	Local	Regional	Distant	Local	Regional	Distant	Local	Regional	Distant
Overall	37,157 (100.00)	52.98	36.07	10.95	42 \pm 10	47 \pm 10	49 \pm 10			
Race/Ethnicity										
NHW	20,152 (54.23)	55.26	33.71	11.02	42 \pm 10	48 \pm 10	50 \pm 9			
NHB	4,976 (13.39)	44.73	42.54	12.72	43 \pm 10	47 \pm 10	49 \pm 10			
Hispanic	8,663 (23.31)	53.01	37.34	9.65	42 \pm 10	46 \pm 10	47 \pm 10			
MEPS	Cervical cancer cases		Non-cancer cases		Mean age (SE)					
	Sample size (%)	Population size (%)	Sample size (%)	Population size (%)	At survey	At diagnosis				
Overall	615 (100.00)	1,157,599 (100.00)	49,392 (100.00)	89,854,955 (100.00)	41 (0.1)	29 (0.5)				
Race/Ethnicity										
NHW	393 (63.90)	915,386 (79.08)	20,374 (41.25)	58,225,962 (64.80)	42 (0.2)	29 (0.6)				
NHB	79 (12.85)	76,174 (6.58)	10,607 (21.48)	11,681,359 (13.00)	40 (0.2)	30 (1.1)				
Hispanic	114 (18.54)	122,147 (10.55)	13,832 (28.00)	13,427,643 (14.94)	38 (0.2)	29 (1.3)				
U.S. Life Tables	Mean Age (SE) ^a									
	Local	Regional	Distant							
Overall	40 (0.04)	35 (0.04)	34 (0.04)							
Race/Ethnicity										
NHW	40 (0.04)	35 (0.04)	33 (0.03)							
NHB	36 (0.04)	33 (0.04)	31 (0.03)							
Hispanic	43 (0.04)	39 (0.04)	38 (0.04)							

Surveillance, Epidemiology, and End Results 18, SEER-18; Medical Expenditure Panel Survey (MEPS); Life Years, LYs; Quality-adjusted life expectancy (QALE); Standard Deviation, SD; Standard error, SE

^aMean ages by which the cervical cancer and non-cervical cancer cases were matched.