

Table S1. The code for International Classification of Disease for Oncology third edition in the present study.

Cancer types	ICD-O-3
Non-small cell lung cancer	8046/3, 8070/3-8074/3, 8084/3,8140/3, 8250/3 ,8252/3, 8253/3, 8255/3, 8480/3, 8560/3
Infiltrating breast cancer	8500/3, 8520/3-8524/3
Colorectum cancer	8140/3, 8143/3, 8145/3, 8201/3, 8210/3, 8211/3, 8213/3, 8220/3, 8221/3, 8255/3, 8260/3-8263/3, 8310/3, 8323/3, 8380/3, 8480/3, 8481/3, 8490/3, 8500/3, 8510/3, 8550/3, 8560/3, 8572/3, 8574/3, 8576/3
Cervical cancer	8051/3, 8052/3, 8070/3-8074/3, 8076/3, 8082/3-8084/3, 8140/3, 8144/3, 8200/3, 8210/3,8255/3, 8260/3-8263/3, 8310/3, 8323/3, 8380/3, 8382/3, 8384/3, 8441/3, 8460/3, 8480/3-8482/3, 8490/3, 8560/3, 8570/3, 8574/3
Differentiated thyroid cancer	8050/3, 8060/3, 8330/3-8332/3, 8335/3, 8340/3-8344/3, 8504/3, 8507/3

Table S2. The cancer-specific characteristics of five different cancers.

Variables	Subgroup	No. (%) of patients or Median (range)				
		Lung (n=12,617)	Breast (n=166,051)	Thyroid (n=31,096)	Colorectal (n=23,550)	Cervical (n=8,347)
Histology	Adenocarcinoma	8722(69.1)	/	/	23550(100.0)	2,684(32.2)
	Squamous	3895(30.9)	/	/	/	5,360(64.2)
	Adenosquamous	/	/	/	/	302(3.6)
	IDC	/	141730(85.4)	/	/	/
	ILC	/	14673(8.8)	/	/	/
	IDLC	/	9649(5.8)	/	/	/
	PTC	/	/	19,544(62.9)	/	/
	FTC	/	/	10,241(32.9)	/	/
	PTCfv	/	/	1,311(4.2)	/	/
Primary site	Upper lobe	7490(59.4)	/	/	/	/
	Mid lobe	602(4.8)	/	/	/	/
	Lower lobe	4181(33.1)	/	/	/	/
	Nipple and central	/	7,060(4.2)	/	/	/
	Inner	/	32,335(19.5)	/	/	/
	Outer	/	72,091(43.4)	/	/	/
	Right	/	/	/	10632(45.1)	/
	Left	/	/	/	6646(28.2)	/
	Rectum	/	/	/	5988(25.5)	/
	Other ^a	344(2.7)	54,565(32.9)	31,096(100.0)	284(1.2)	8,346(100.0)
Molecular subtype	HR+/HER2+	/	17,699(10.7)	/	/	/
	HR+/HER2-	/	12,4107(74.7)	/	/	/
	HR-/HER2+	/	6,888(4.1)	/	/	/
	HR-/HER2-	/	17,357(10.5)	/	/	/

Note: Other^a: Not listed the detailed location of the primary tumor site;

Abbreviation: IDC: infiltrating ductal carcinoma; ILC: infiltrating lobular carcinoma; IDLC: infiltrating ductal mixed lobular carcinoma; PTC: papillary thyroid carcinoma; FTC: follicular thyroid carcinoma PTCfv: papillary thyroid carcinoma, follicular variate; HR: hormone receptor, HER-2: human epidermal growth factor receptor-2.

Table S3-1. Univariate and Multivariable Cox analyses of the association of treatment delays intervals with overall survival (treatment delays was calculated as continuous variable).

Cancer	Model 1		Model 2 ^a	
	HR ^b (95%CI)	<i>P</i>	HR (95%CI)	<i>P</i>
NSCLC				
Stage I	1.20(1.17-1.23)	< 0.001	1.04(1.01-1.06)	0.010
Stage II	1.10(1.06-1.14)	< 0.001	1.00(0.96-1.04)	0.983
IBC				
Stage I	1.02(0.99-1.05)	0.150	1.03(1.00-1.06)	0.029
Stage II	1.00(0.98-1.03)	0.771	1.01(0.99-1.03)	0.377
DTC				
Stage I	0.76(0.68-0.87)	< 0.001	0.94(0.83-1.06)	0.296
Stage II	0.71(0.52-0.98)	0.038	0.70(0.50-0.97)	0.035
Colorectal cancer				
Stage I	1.07(1.01-1.12)	0.013	0.97(0.92-1.03)	0.358
Stage II	0.95(0.91-0.99)	0.017	0.89(0.85-0.93)	< 0.001
Cervical cancer^c				
Stage I	1.16(1.09-1.24)	< 0.001	0.95(0.89-1.03)	0.217
Stage II	1.02(0.95-1.10)	0.529	0.99(0.91-1.07)	0.833

Note: Model 2^a was adjusted by the age, race, tumor location (exception of DTC, cervical cancer), differentiated grade; histology (exception of colorectal cancer), T stage, N stage (exception of NSCLC in stage I, DTC in stage II, colorectal cancer), surgery (exception of DTC), radiotherapy, chemotherapy (exception of DTC), marital status, income, and molecular subtype (only for breast cancer).

HR^b: compared with immediate treatment initiation; Cervical cancer^c: FIGO stage.

Abbreviation: HR: Hazard ratio, CI: confidence interval; NSCLC: non-small cell lung cancer, IBC: infiltrating breast cancer, DTC: differentiated thyroid carcinoma.

Bold values indicate statistical significance ($p < 0.05$)

Table S3-2. Univariate and Multivariable Cox analyses of the association of treatment delays intervals with cancer-specific survival (treatment delays was calculated as continuous variable).

Cancer	Model 1		Model 2 ^a	
	HR ^b (95%CI)	<i>P</i>	HR (95%CI)	<i>P</i>
NSCLC				
Stage I	1.20(1.16-1.24)	< 0.001	1.02(0.98-1.06)	0.286
Stage II	1.06(1.02-1.11)	0.002	0.97(0.93-1.01)	0.144
IBC				
Stage I	0.97(0.91-1.02)	0.217	0.97(0.92-1.03)	0.321
Stage II	0.97(0.94-1.00)	0.029	0.99(0.97-1.02)	0.747
DTC				
Stage I	1.12(0.69-1.82)	0.649	1.04(0.61-1.77)	0.877
Stage II	0.13(0.00-10.92)	0.367	0.11(0.00-5.93)	0.277
Colorectal cancer				
Stage I	1.25(1.14-1.36)	< 0.001	0.99(0.89-1.09)	0.795

Stage II	0.94(0.89-1.00)	0.044	0.83(0.78-0.88)	<0.001
Cervical cancer^c				
Stage I	1.23(1.14-1.33)	<0.001	1.03(0.94-1.13)	0.480
Stage II	1.04(0.95-1.14)	0.380	1.02(0.93-1.12)	0.716

Note: Model 2^a was adjusted by the age, race, tumor location (exception of DTC, cervical cancer), differentiated grade; histology (exception of colorectal cancer), T stage, N stage (exception of NSCLC in stage I, DTC in stage II, colorectal cancer), surgery (exception of DTC), radiotherapy, chemotherapy (exception of DTC), marital status, income, and molecular subtype (only for breast cancer).

HR^b: compared with immediate treatment initiation; Cervical cancer^c: FIGO stage.

Abbreviation: HR: Hazard ratio, CI: confidence interval; NSCLC: non-small cell lung cancer, IBC: infiltrating breast cancer, DTC: differentiated thyroid carcinoma.

Bold values indicate statistical significance ($p < 0.05$)

Table S4-1. Multivariable analyses of the association of treatment delays intervals with overall survival in NSCLC (stage I).

Variables	Subgroup*	Hazard ratio (95%CI)	P
Treatment delays intervals	Immediate	Reference	
	Intermediate	1.04(0.95-1.13)	0.349
	Long	1.11(1.01-1.23)	0.044
Race	White	Reference	
	Black	0.90(0.80-1.01)	0.088
	other ^a	0.69(0.59-0.80)	<0.001
Location	Upper lobe	Reference	
	Mid lobe	0.98(0.84-1.15)	0.809
	Lower lobe	1.08(1.01-1.16)	0.030
	Other ^b	1.10(0.89-1.34)	0.373
Grade	I	Reference	
	II	1.68(1.51-1.87)	<0.001
	III/IV	2.00(1.77-2.23)	<0.001
	Unknown	1.61(1.41-1.83)	<0.001
Histology	Adenocarcinoma	Reference	
	Squamous	1.32(1.23-1.41)	<0.001
T stage	T1	Reference	
	T2	1.32(1.23-1.41)	<0.001
Surgery	Not performed	Reference	
	Performed	0.48(0.40-0.59)	<0.001
Radiotherapy	Not performed	Reference	
	Performed	1.32(1.10-1.59)	0.003
Chemotherapy	Not performed	Reference	
	Performed	1.15(1.03-1.28)	0.014
Age	/	1.03(1.03-1.03)	<0.001
Marital status	Married	Reference	
	Single	1.23(1.11-1.37)	<0.001
	Other ^c	1.19(1.11-1.28)	<0.001
	Unknown	1.02(0.87-1.19)	0.829
Income	< 35K	Reference	
	35K-<55K	0.92(0.76-1.11)	0.385
	55k-<75k	0.85(0.70-1.03)	0.088
	>75k	0.73(0.60-0.89)	0.002

Note: *subgroup: immediate: < 1 month, intermediate delayed: ≥1 and ≤2 months, and long delayed: ≥ 3 months; other^a: defined as the Asian/Pacific Islander and American Indian/Alaska Native; Other^b: Not listed the detailed location of the primary tumor site; Other^c: Divorced, separated, widowed, Unmarried or Domestic Partner.

Abbreviation: CI: confidence interval; NSCLC: non-small cell lung cancer.

Bold values indicate statistical significance ($p < 0.05$)

Table S4-2. Multivariable analyses of the association of treatment delays intervals with overall survival

in NSCLC (stage II).

Variables	Subgroup*	Hazard ratio (95%CI)	P
Treatment delays intervals	Immediate	Reference	
	Intermediate	0.97(0.87-1.09)	0.699
	Long	1.00(0.86-1.16)	0.995
Race	White	Reference	
	Black	0.92(0.79-1.07)	0.289
	other ^a	0.88(0.73-1.05)	0.162
Location	Upper lobe	Reference	
	Mid lobe	1.13(0.91-1.40)	0.270
	Lower lobe	1.11(1.01-1.22)	0.032
	Other ^b	1.06(0.87-1.29)	0.558
Grade	I	Reference	
	II	1.23(1.03-1.48)	0.023
	III/IV	1.44(1.20-1.73)	<0.001
	Unknown	1.18(0.96-1.45)	0.109
Histology	Adenocarcinoma	Reference	
	Squamous	1.11(1.01-1.22)	0.027
T stage	T1	Reference	
	T2	0.95(0.82-1.10)	0.482
	T3	0.92(0.76-1.11)	0.363
N stage	N0	Reference	
	N1	1.06(0.92-1.21)	0.421
Surgery	Not performed	Reference	
	Performed	0.42(0.36-0.49)	<0.001
Radiotherapy	Not performed	Reference	
	Performed	1.14(0.99-1.31)	0.077
Chemotherapy	Not performed	Reference	
	Performed	0.86(0.78-0.94)	0.002
Age	/	1.02(1.01-1.03)	<0.001
Marital status	Married	Reference	
	Single	1.09(0.94-1.26)	0.262
	Other ^c	1.04(0.94-1.14)	0.464
	Unknown	0.99(0.79-1.23)	0.899
Income	< 35K	Reference	
	35K-<55K	0.70(0.56-0.89)	0.003
	55k-<75k	0.64(0.51-0.80)	<0.001
	>75k	0.62(0.49-0.79)	<0.001

Note: *subgroup: immediate: < 1 month, intermediate delayed: ≥1 and ≤2 months, and long delayed: ≥ 3 months; other^a: defined as the Asian/Pacific Islander and American Indian/Alaska Native; Other^b: Not listed the detailed location of the primary tumor site; Other^c: Divorced, separated, windowed, Unmarried or Domestic Partner.

Table S5-1. Multivariable analyses of the association of treatment delays intervals with overall survival in infiltrating breast cancer (stage I).

Variables	Subgroup*	Hazard ratio (95%CI)	P
Treatment delays intervals	Immediate	Reference	
	Intermediate	0.92(0.87-0.97)	0.003
	Long	1.23(1.11-1.37)	<0.001
Race	White	Reference	
	Black	1.22(1.13-1.32)	<0.001
	other ^a	0.72(0.65-0.80)	<0.001
Location	Nipple and central	Reference	
	Inner	0.97(0.86-1.10)	0.662
	Outer	0.96(0.86-1.08)	0.531
	Other ^b	0.98(0.87-1.11)	0.801
Grade	I	Reference	
	II	1.15(1.09-1.22)	<0.001
	III/IV	1.61(1.50-1.74)	<0.001
	Unknown	1.07(0.91-1.26)	0.391
Histology	IDC	Reference	
	ILC	0.93(0.85-1.02)	0.213
	IDLC	0.95(0.85-1.06)	0.327
N stage	N0	Reference	
	N1	1.44(1.31-1.60)	<0.001
Surgery	Not performed	Reference	
	Performed	0.23(0.18-0.31)	<0.001
Radiotherapy	Not performed	Reference	
	Performed	0.62(0.59-0.65)	<0.001
Chemotherapy	Not performed	Reference	
	Performed	1.06(0.99-1.14)	0.109
Age	/	1.08(1.07-1.08)	<0.001
Marital status	Married	Reference	
	Single	1.46(1.35-1.58)	<0.001
	Other ^c	1.54(1.46-1.62)	<0.001
	Unknown	1.27(1.14-1.43)	<0.001
Income	< 35K	Reference	
	35K-<55K	0.88(0.75-1.04)	0.142
	55k-<75k	0.70(0.60-0.83)	<0.001
	>75k	0.60(0.51-0.71)	<0.001
Subtype	HR+/HER2+	Reference	
	HR+/HER2-	1.08(0.98-1.20)	0.117
	HR-/HER2+	1.06(0.90-1.24)	0.468
	HR-/HER2-	1.50(1.34-1.67)	<0.001

Note: *subgroup: immediate: < 1 month, intermediate delayed: ≥1 and ≤2 months, and long delayed: ≥ 3 months; other^a: defined as the Asian/Pacific Islander and American Indian/Alaska Native; Other^b: Not listed the detailed location of the primary tumor site; Other^c: Divorced, separated, widowed,

Unmarried or Domestic Partner.

Abbreviation: CI: confidence interval; HR: hormone receptor, HER-2: human epidermal growth factor receptor-2.

Bold values indicate statistical significance ($p < 0.05$)

Table S5-2. Multivariable analyses of the association of treatment delays intervals with overall survival in infiltrating breast cancer (stage II).

Variables	Subgroup*	Hazard ratio (95%CI)	P
Treatment delays intervals	Immediate	Reference	
	Intermediate	0.93(0.88-0.97)	0.002
	Long	1.09(0.99-1.19)	0.059
Race	White	Reference	
	Black	1.22(1.15-)	<0.001
	other ^a	0.77(0.71-0.84)	<0.001
Location	Nipple and central	Reference	
	Inner	1.06(0.96-1.17)	0.236
	Outer	0.89(0.82-0.98)	0.018
	Other ^b	1.00(0.91-1.10)	0.978
Grade	I	Reference	
	II	1.43(1.32-1.55)	<0.001
	III/IV	2.16(1.98-2.35)	<0.001
	Unknown	1.87(1.62-2.15)	<0.001
Histology	IDC	Reference	
	ILC	0.83(0.77-0.89)	<0.001
	IDLC	0.83(0.76-0.92)	<0.001
T stage	T1	Reference	
	T2	1.76(1.65-1.89)	<0.001
	T3	2.76(2.47-3.09)	<0.001
N stage	N0	Reference	
	N1	1.70(1.62-1.78)	<0.001
Surgery	Not performed	Reference	
	Performed	0.47(0.42-0.52)	<0.001
Radiotherapy	Not performed	Reference	
	Performed	0.78(0.74-0.81)	<0.001
Chemotherapy	Not performed	Reference	
	Performed	0.72(0.69-0.76)	<0.001
Age	/	1.04(1.04-1.04)	<0.001
Marital status	Married	Reference	
	Single	1.34(1.27-1.43)	<0.001
	Other ^c	1.34(1.28-1.41)	<0.001
	Unknown	1.27(1.15-1.39)	<0.001
Income	< 35K	Reference	
	35K-<55K	0.79(0.69-0.90)	<0.001
	55k-<75k	0.65(0.57-0.74)	<0.001

	>75k	0.58(0.51-0.66)	<0.001
Subtype	HR+/HER2+	Reference	
	HR+/HER2-	1.20(1.11-1.29)	<0.001
	HR-/HER2+	1.16(1.04-1.29)	<0.001
	HR-/HER2-	2.20(2.02-2.38)	<0.001

Note: *subgroup: immediate: < 1 month, intermediate delayed: ≥ 1 and ≤ 2 months, and long delayed: ≥ 3 months; other^a: defined as the Asian/Pacific Islander and American Indian/Alaska Native; Other^b: Not listed the detailed location of the primary tumor site; Other^c: Divorced, separated, widowed, Unmarried or Domestic Partner.

Abbreviation: CI: confidence interval; HR: hormone receptor, HER-2: human epidermal growth factor receptor-2.

Bold values indicate statistical significance ($p < 0.05$)

Table S6-1. Multivariable analyses of the association of treatment delays intervals with overall survival in DTC (stage I).

Variables	Subgroup*	Hazard ratio (95%CI)	P
Treatment delays intervals	Immediate	Reference	
	Intermediate	0.70(0.53-0.93)	0.012
Race	Long	1.09(0.70-1.70)	0.711
	White	Reference	
	Black	1.71(1.30-2.25)	<0.001
Grade	other ^a	0.44(0.26-0.73)	0.001
	I	Reference	
	II	0.60(0.30-1.19)	0.145
	III/IV	5.00(2.14-11.66)	<0.001
Histology	Unknown	0.89(0.71-1.12)	0.326
	PTC	Reference	
	FTC	1.11(0.91-1.36)	0.288
	PTCfv	1.95(1.21-3.13)	0.006
T stage	T1a	Reference	
	T1b	1.04(0.83-1.32)	0.710
	T2	0.99(0.50-1.96)	0.977
	T3	1.54(0.82-2.89)	0.179
	T4	8.59(3.61-20.45)	<0.001
N stage	N0	Reference	
	N1a	1.44(0.76-2.74)	0.265
	N1b	1.03(0.39-2.71)	0.953
Radiotherapy	Not performed	Reference	
	Performed	0.69(0.53-0.89)	0.004
Age	/	1.09(1.08-1.10)	<0.001
Marital status	Married	Reference	
	Single	1.81(1.39-2.35)	<0.001
	Other ^c	1.59(1.26-2.00)	<0.001
	Unknown	1.02(0.65-1.59)	0.946
Income	< 35K	Reference	
	35K-<55K	1.02(0.54-1.94)	0.953
	55k-<75k	0.76(0.40-1.45)	0.412
	>75k	0.68(0.35-1.32)	0.256

Note: *subgroup: immediate: < 1 month, intermediate delayed: ≥1 and ≤2 months, and long delayed: ≥ 3 months; other^a: defined as the Asian/Pacific Islander and American Indian/Alaska Native; Other^b: Not listed the detailed location of the primary tumor site; Other^c: Divorced, separated, widowed, Unmarried or Domestic Partner.

Abbreviation: CI: confidence interval; DTC: differentiated thyroid carcinoma.

Bold values indicate statistical significance ($p < 0.05$)

Table S6-2. Multivariable analyses of the association of treatment delays intervals with overall survival in DTC (stage II).

Variables	Subgroup*	Hazard ratio (95%CI)	P
Treatment delays intervals	Immediate	Reference	
	Intermediate	0.73(0.41-1.31)	0.300
	Long	0.22(0.03-1.61)	0.138
Race	White	Reference	
	Black	1.28(0.62-2.67)	0.503
	other ^a	1.45(0.65-3.26)	0.366
Grade	I	Reference	
	II	1.38(0.46-4.21)	0.564
	III/IV	3.47(0.44-27.16)	0.236
	Unknown	0.86(0.49-1.51)	0.608
Histology	PTC	Reference	
	FTC	1.73(1.00-2.99)	0.050
	PTCfv	1.46(0.74-2.87)	0.278
Radiotherapy	Not performed	Reference	
	Performed	0.42(0.26-0.68)	<0.001
Age	/	1.10(1.07-1.13)	<0.001
Marital status	Married	Reference	
	Single	2.58(1.31-5.07)	0.006
	Other ^c	1.71(1.01-2.89)	0.047
	Unknown	0.40(0.05-3.00)	0.375
Income	< 35K	Reference	
	35K-<55K	0.63(0.24-1.67)	0.359
	55k-<75k	0.26(0.10-0.71)	0.008
	>75k	0.30(0.11-0.84)	0.022

Note: *subgroup: immediate: < 1 month, intermediate delayed: ≥ 1 and ≤ 2 months, and long delayed: ≥ 3 months; other^a: defined as the Asian/Pacific Islander and American Indian/Alaska Native; Other^b: Not listed the detailed location of the primary tumor site; Other^c: Divorced, separated, widowed, Unmarried or Domestic Partner.

Abbreviation: CI: confidence interval; DTC: differentiated thyroid carcinoma.

Bold values indicate statistical significance ($p < 0.05$)

Table S7-1. Multivariable analyses of the association of treatment delays intervals with overall survival in colorectal cancer (stage I).

Variables	Subgroup*	Hazard ratio (95%CI)	P
Treatment delays intervals	Immediate	Reference	
	Intermediate	0.83(0.75-0.92)	<0.001
	Long	1.21(0.97-1.52)	0.090
Race	White	Reference	
	Black	1.17(1.02-1.34)	0.027
	other ^a	0.78(0.65-0.94)	0.008
Location	Right	Reference	
	Left	1.03(0.92-1.15)	0.610
	Rectum	1.06(0.94-1.20)	0.324
	Other ^b	1.50(1.00-2.26)	0.049
Grade	I	Reference	
	II	1.02(0.89-1.16)	0.789
	III/IV	1.15(0.95-1.40)	0.161
	Unknown	0.93(0.75-1.15)	0.498
T stage	T1	Reference	
	T2	1.16(1.06-1.28)	0.001
Surgery	Not performed	Reference	
	Performed	0.29(0.22-0.39)	<0.001
Radiotherapy	Not performed	Reference	
	Performed	0.94(0.67-1.29)	0.711
Chemotherapy	Not performed	Reference	
	Performed	1.58(1.17-2.12)	0.003
Age	/	1.08(1.07-1.08)	<0.001
Marital status	Married	Reference	
	Single	1.62(1.40-1.87)	<0.001
	Other ^c	1.38(1.24-1.53)	<0.001
	Unknown	1.14(0.95-1.37)	0.168
Income	< 35K	Reference	
	35K-<55K	0.93(0.70-1.23)	0.613
	55k-<75k	0.76(0.68-1.00)	0.056
	>75k	0.64(0.48-0.85)	0.002

Note: *subgroup: immediate: < 1 month, intermediate delayed: ≥1 and ≤2 months, and long delayed: ≥ 3 months; other^a: defined as the Asian/Pacific Islander and American Indian/Alaska Native; Other^b: Not listed the detailed location of the primary tumor site; Other^c: Divorced, separated, widowed, Unmarried or Domestic Partner.

Abbreviation: CI: confidence interval.

Bold values indicate statistical significance ($p < 0.05$)

Table S7-2. Multivariable analyses of the association of treatment delays intervals with overall survival in colorectal cancer (stage II).

Variables	Subgroup*	Hazard ratio (95%CI)	P
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Treatment delays intervals	Immediate	Reference	
	Intermediate	0.70(0.65-0.75)	<0.001
	Long	0.87(0.72-1.04)	0.120
Race	White	Reference	
	Black	1.18(1.07-1.31)	0.002
	other ^a	0.82(0.72-0.93)	0.003
Location	Right	Reference	
	Left	1.17(1.08-1.27)	<0.001
	Rectum	1.36(1.21-1.53)	<0.001
	Other ^b	1.18(0.92-1.51)	<0.001
Grade	I	Reference	0.203
	II	1.08(0.94-1.23)	0.290
	III/IV	1.21(1.04-1.41)	0.012
	Unknown	1.19(0.95-1.48)	0.129
T stage	T3	Reference	
	T4	2.19(2.02-2.37)	<0.001
Surgery	Not performed	Reference	
	performed	0.29(0.24-0.34)	<0.001
Radiotherapy	Not performed	Reference	
	performed	1.08(0.94-1.26)	0.278
Chemotherapy	Not performed	Reference	
	performed	0.82(0.74-0.91)	<0.001
Age	/	1.05(1.05-1.06)	<0.001
Marital status	Married	Reference	
	Single	1.48(1.33-1.64)	<0.001
	Other ^c	1.33(1.23-1.44)	<0.001
	Unknown	1.19(1.02-1.38)	0.029
Income	< 35K	Reference	
	35K-<55K	0.83(0.68-1.01)	0.066
	55k-<75k	0.73(0.60-0.89)	0.002
	>75k	0.68(0.55-0.83)	<0.001

Note: *subgroup: immediate: < 1 month, intermediate delayed: ≥ 1 and ≤ 2 months, and long delayed: ≥ 3 months; other^a: defined as the Asian/Pacific Islander and American Indian/Alaska Native; Other^b: Not listed the detailed location of the primary tumor site; Other^c: Divorced, separated, windowed, Unmarried or Domestic Partner.

Abbreviation: CI: confidence interval.

Bold values indicate statistical significance ($p < 0.05$)

Table S8-1. Multivariable analyses of the association of treatment delays intervals with overall survival in cervical cancer (stage I).

Variables	Subgroup*	Hazard ratio (95%CI)	P
Treatment delays intervals	Immediate	Reference	
	Intermediate	1.08(0.90-1.30)	0.421
	Long	0.84(0.63-1.14)	0.282
Race	White	Reference	
	Black	1.62(1.30-2.02)	<0.001
	other ^a	0.91(0.68-1.22)	0.546
Grade	I	Reference	
	II	1.34(0.99-1.81)	0.061
	III/IV	2.29(1.69-3.10)	<0.001
	Unknown	1.36(0.98-1.88)	0.064
Histology	Squamous	Reference	
	Adenocarcinoma	1.05(0.86-1.28)	0.621
	Adenosquamous	1.25(0.85-1.83)	0.255
T stage	T1	Reference	
	T2	2.03(0.94-4.40)	0.071
Surgery	Not performed	Reference	
	Performed	0.47(0.37-0.59)	<0.001
Radiotherapy	Not performed	Reference	
	Performed	2.34(1.85-2.97)	<0.001
Chemotherapy	Not performed	Reference	
	Performed	0.96(0.77-1.21)	0.740
Age	/	1.03(1.02-1.04)	<0.001
Marital status	Married	Reference	
	Single	1.16(0.95-1.43)	0.147
	Other ^c	1.30(1.06-1.61)	0.013
	Unknown	1.16(0.82-1.64)	0.402
Income	< 35K	Reference	
	35K-<55K	1.08(0.62-1.87)	0.787
	55k-<75k	1.10(0.64-1.90)	0.726
	>75k	0.79(0.45-1.39)	0.413

Note: *subgroup: immediate: < 1 month, intermediate delayed: ≥ 1 and ≤ 2 months, and long delayed: ≥ 3 months; other^a: defined as the Asian/Pacific Islander and American Indian/Alaska Native; Other^b: Not listed the detailed location of the primary tumor site; Other^c: Divorced, separated, widowed, Unmarried or Domestic Partner.

Abbreviation: CI: confidence interval.

Bold values indicate statistical significance ($p < 0.05$)

Table S8-2. Multivariable analyses of the association of treatment delays intervals with overall survival in cervical cancer (stage II).

Variables	Subgroup*	Hazard ratio (95%CI)	P
Treatment delays intervals	Immediate	Reference	

	Intermediate	0.92(0.74-1.14)	0.436
	Long	1.01(0.75-1.37)	0.949
Race	White	Reference	
	Black	1.19(0.95-1.49)	0.139
	other ^a	0.99(0.76-1.28)	0.938
Grade	I	Reference	
	II	1.46(0.95-2.25)	0.087
	III/IV	1.54(0.99-2.38)	0.054
	Unknown	1.54(0.99-2.38)	0.057
Histology	Squamous	Reference	
	Adenocarcinoma	1.23(0.99-1.53)	0.058
	Adenosquamous	1.18(0.80-1.74)	0.408
Surgery	Not performed	Reference	
	performed	0.77(0.62-0.95)	0.017
Radiotherapy	Not performed	Reference	
	performed	0.61(0.42-0.89)	0.011
Chemotherapy	Not performed	Reference	
	performed	0.99(0.76-1.32)	0.964
Age	/	1.01(1.00-1.02)	<0.001
Marital status	Married	Reference	
	Single	1.23(0.99-1.51)	0.058
	Other ^c	1.22(0.98-1.52)	0.074
	Unknown	1.23(0.82-1.85)	0.315
Income	< 35K	Reference	
	35K-<55K	0.86(0.52-1.42)	0.560
	55k-<75k	0.82(0.50-1.35)	0.447
	>75k	0.73(0.43-1.22)	0.227

Note: *subgroup: immediate: < 1 month, intermediate delayed: ≥ 1 and ≤ 2 months, and long delayed: ≥ 3 months; other^a: defined as the Asian/Pacific Islander and American Indian/Alaska Native; Other^b: Not listed the detailed location of the primary tumor site; Other^c: Divorced, separated, widowed, Unmarried or Domestic Partner.

Abbreviation: CI: confidence interval.

Bold values indicate statistical significance ($p < 0.05$)