

Table S1 Logistic regression for receiving care in a collaborative (multi-institutional) model without inclusion of travel distance

Characteristics	OR (95% CI)	P value
Age	0.99 (0.99–1.01)	0.56
Female	0.98 (0.86–1.12)	0.83
Race		
White	Ref.	
Black	0.72 (0.57–0.93)	0.01
Asian	0.98 (0.66–1.49)	0.95
Other	1.23 (0.76–2.00)	0.38
Unknown	1.31 (0.69–2.44)	0.40
Hispanic	0.82 (0.57–1.17)	0.26
Insurance status		
Private	Ref.	
Medicaid	0.97 (0.77–1.21)	0.76
Medicare	1.11 (0.97–1.25)	0.11
Other government insurance	1.59 (1.02–2.49)	0.04
Not Insured	0.69 (0.48–1.00)	0.05
Unknown	0.66 (0.35–1.28)	0.22
Income quartiles [†]		
≥\$63,333	Ref.	
<\$40,227	0.89 (0.69–1.14)	0.37
\$40,227–\$50,353	1.04 (0.77–1.21)	0.65
\$50,354–\$63,332	1.02 (0.76–1.20)	0.83
Unknown income	1.26 (0.89–1.77)	0.18
Facility type		
Academic	Ref.	
Non-academic	1.10 (1.00–1.20)	0.01
Unknown	0.69 (0.47–1.02)	0.08
Esophagectomy at high-volume center [‡]	0.94 (0.73–1.21)	0.61
Facility location		
Northeast	Ref.	
Midwest	1.20 (0.75–1.91)	0.44
South	1.67 (1.08–2.59)	0.02
West	1.46 (0.84–2.54)	0.17
Area of residence [‡] , n (%)		
Metropolitan	Ref.	
Urban	1.29(1.04–1.61)	0.02
Rural	1.22 (0.84–1.77)	0.29
Year of diagnosis		
2012	Ref.	
2013	1.11 (0.93–1.34)	0.25
2014	1.26 (1.05–1.50)	0.01
2015	1.25 (1.02–1.54)	0.04
2016	1.27 (1.01–1.59)	0.04
2017	1.07 (0.87–1.31)	0.53
Charlson-Deyo comorbidity index		
0	Ref.	
1	1.07 (0.94–1.21)	0.29
≥2	1.21 (0.99–1.48)	0.06
Clinical stage		
Stage I	Ref.	
Stage II	0.91 (0.75–1.10)	0.34
Stage III	0.88 (0.71–1.08)	0.20
Squamous cell carcinoma	0.96 (0.83–1.11)	0.65

[†], average income in patient's residing zip code; [‡], metropolitan defined at population >20,000 within residing county, rural defined at population <2,500 within residing county; [‡], greater than or equal to 20 esophagectomies per year. Facility refers to the institution in which the esophagectomy was performed. OR, odds ratio; CI, confidence interval.

Table S2 Quality of trimodality therapy stratified by clinical stage

Clinical stages	Quality metric	Single institution treatment model, %	Collaborative treatment model, %	P value
Stage I	Dual agent chemotherapy	95.6	81.1	<0.001
	41.4–50.4 Gy radiotherapy	91.5	91.9	0.86
	R0 resection	98.0	95.0	0.05
	pCR	29.4	27.9	0.66
	90-day mortality	8.9	7.9	0.54
Stage II	Dual agent chemotherapy	96.3	84.7	<0.001
	41.4–50.4 Gy radiotherapy	93.1	90.7	0.03
	R0 resection	93.2	94.5	0.14
	pCR	23.4	25.7	0.14
	90-day mortality	6.4	7.0	0.50
Stage III	Dual agent chemotherapy	96.8	85.0	<0.001
	41.4–50.4 Gy radiotherapy	92.4	90.2	0.02
	R0 resection	93.5	94.3	0.25
	pCR	20.1	22.6	0.04
	90-day mortality	7.4	7.1	0.73

Gy, Gray; pCR, pathologic complete response.

Table S3 Time from diagnosis to treatment initiation in a single institution treatment model versus a collaborative (multi-institutional) model

Time to treatment	Esophagectomy and chemoradiotherapy at the same institution		P value
	Single-institution model	Collaborative model	
Chemotherapy, days, median [IQR]	35 [26–48]	36 [27–47]	0.03
Radiotherapy, days, median [IQR]	36 [27–49]	40 [29–54]	<0.001
Esophagectomy, days, median [IQR]	137 [118–162]	135 [118–159]	0.001

IQR, interquartile range.

Table S4 Cox regression for mortality in patients with clinical stage I disease

Variables	HR (95% CI)	P value
Collaborative (multi-institutional) treatment	1.19 (0.89–1.68)	0.19
Age	1.03 (1.01–1.05)	<0.001
Female	0.88 (0.62–1.23)	0.41
Travel distance in miles*		
≤12.5	Ref.	
12.6–42.6	0.89 (0.69–1.29)	0.48
≥42.7	0.80 (0.50–1.32)	0.45
Race		
White	Ref.	
Black	1.23 (0.60–2.44)	0.59
Asian	0.95 (0.31–2.70)	0.88
Other	0.70 (0.09–5.13)	0.72
Unknown	0.42 (0.08–1.80)	0.25
Hispanic	0.34 (0.18–1.09)	0.14
Insurance status		
Private	Ref.	
Medicaid	1.39 (0.74–2.78)	0.31
Medicare	1.33 (0.71–2.59)	0.71
Other government insurance	1.12 (0.52–2.26)	0.76
Uninsured	3.17 (1.52–6.61)	<0.001
Unknown	1.02 (0.39–3.29)	0.99
Income quartiles [†]		
≥\$63,333	Ref.	
<\$40,227	1.24 (0.81–1.91)	0.32
\$40,227–\$50,353	1.03 (0.71–1.50)	0.86
\$50,354–\$63,332	1.06 (0.76–1.47)	0.75
Unknown	1.29 (0.54–3.05)	0.57
Facility type		
Academic	Ref.	
Non-academic	1.43 (1.08–1.89)	0.01
Unknown	1.28 (0.28–5.95)	0.75
Esophagectomy at high-volume center [‡]	0.67 (0.48–0.95)	0.03
Facility location		
Midwest	Ref.	
Northeast	1.62 (1.13–2.31)	0.01
South	0.93 (0.64–1.26)	0.53
West	0.63 (0.44–1.06)	0.09
Population density [‡] , n (%)		
Metropolitan	Ref.	
Urban	1.31 (0.98–1.98)	0.09
Rural	2.10 (0.93–4.47)	0.11
Unknown	0.82 (0.37–1.88)	0.66
Year of diagnosis		
2012	Ref.	
2013	1.08 (0.75–1.55)	0.68
2014	1.03 (0.68–1.56)	0.88
2015	1.03 (0.68–1.58)	0.88
2016	0.85 (0.53–1.36)	0.50
2017	0.61 (0.36–1.04)	0.07
Charlson-Deyo comorbidity index		
0	Ref.	
1	1.33 (1.00–1.76)	0.05
≥2	0.95 (0.58–1.56)	0.85
Squamous cell carcinoma	1.46 (0.98–2.17)	0.06

*, from hospital at which esophagectomy is performed; [†], average income in patient's residing zip code; [‡], metropolitan defined at population >20,000 within residing county, rural defined at population <2,500 within residing county; [§], greater than or equal to 20 esophagectomies per year. Facility refers to the institution in which the esophagectomy was performed. HR, hazard ratio; CI, confidence interval.

Table S5 Cox regression for mortality in patients with clinical stage II

Variables	HR (95% CI)	p-value
Collaborative (multi-institutional) treatment	1.23 (1.09–1.34)	<0.01
Age	1.01 (1.01–1.02)	<0.001
Female	0.74 (0.62–0.85)	<0.001
Travel distance in miles*		
≤12.5	Ref.	
12.6–42.6	0.93 (0.81–1.08)	0.32
≥42.7	0.97 (0.82–1.18)	0.86
Race		
White	Ref.	
Black	0.93 (0.68–1.24)	0.57
Asian	0.79 (0.50–1.21)	0.31
Other	0.81 (0.41–1.63)	0.53
Unknown	1.20 (0.63–2.26)	0.60
Hispanic	0.71 (0.51–1.01)	0.05
Insurance status		
Private	Ref.	
Medicaid	1.23 (0.98–1.53)	0.08
Medicare	1.08 (0.93–1.23)	0.39
Other government insurance	0.82 (0.52–1.29)	0.378
Uninsured	1.63 (1.09–2.37)	0.03
Unknown	0.95 (0.52–1.68)	0.82
Income quartiles†		
≥\$63,333	Ref.	
<\$40,227	1.18 (0.98–1.39)	0.06
\$40,227–\$50,353	1.03 (0.88–1.21)	0.70
\$50,354–\$63,332	1.22 (1.05–1.40)	0.02
Unknown	0.91 (0.50–1.61)	0.70
Facility type		
Academic	Ref.	
Non-academic	1.05 (0.93–1.17)	0.49
Unknown	0.94 (0.50–1.61)	0.72
Esophagectomy at high-volume center‡	0.91 (0.79–0.98)	0.04
Facility location		
Midwest	Ref.	
Northeast	0.95 (0.81–1.11)	0.51
South	1.10 (0.96–1.27)	0.17
West	0.89 (0.74–1.06)	0.18
Population density‡, n (%)		
Metropolitan	Ref.	
Urban	1.11 (0.95–1.28)	0.23
Rural	1.15 (0.77–1.73)	0.50
Unknown	0.71 (0.53–0.96)	0.02
Year of diagnosis		
2012	Ref.	
2013	0.82 (0.69–0.97)	0.03
2014	0.77 (0.64–0.90)	<0.01
2015	0.90 (0.75–1.05)	0.18
2016	0.76 (0.65–0.95)	0.01
2017	0.68 (0.54–0.82)	<0.01
Charlson-Deyo comorbidity index		
0	Ref.	
1	1.36 (1.20–1.54)	<0.001
≥2	1.29 (1.08–1.53)	0.02
Squamous cell carcinoma	1.13 (0.97–1.34)	0.07

*, from hospital at which esophagectomy is performed; †, average income in patient's residing zip code; ‡, metropolitan defined at population >20,000 within residing county, rural defined at population <2,500 within residing county; §, greater than or equal to 20 esophagectomies per year. Facility refers to the institution in which the esophagectomy was performed. HR, hazard ratio; CI, confidence interval.

Table S6 Cox regression for mortality in patients with clinical stage III

Variables	HR (95% CI)	P value
Collaborative (multi-institutional) treatment	1.01 (0.93–1.10)	0.75
Age	1.01 (1.01–1.03)	0.01
Travel distance in miles*		
≤12.5	Ref.	
12.6–42.6	1.02 (0.91–1.13)	0.87
≥42.7	0.99 (0.84–1.16)	0.93
Female	0.86 (0.75–0.96)	0.01
Race		
White	Ref.	
Black	0.91 (0.71–1.19)	0.52
Asian	1.10 (0.82–1.58)	0.42
Other	1.16 (0.73–1.76)	0.55
Unknown	0.94 (0.50–1.70)	0.81
Hispanic	0.99 (0.74–1.31)	0.92
Insurance status		
Private	Ref.	
Medicaid	1.11 (0.92–1.34)	0.30
Medicare	0.95 (0.85–1.06)	0.39
Other government insurance	1.11 (0.79–1.52)	0.52
Uninsured	1.10 (0.80–1.47)	0.61
Unknown	1.05 (0.74–1.53)	0.72
Income quartiles†		
≥\$63,333	Ref.	
<\$40,227	1.17 (1.02–1.34)	0.03
\$40,227–\$50,353	1.06 (0.94–1.19)	0.35
\$50,354–\$63,332	1.08 (0.96–1.20)	0.19
Unknown	1.24 (0.82–1.87)	0.31
Facility type		
Academic	Ref.	
Non-academic	1.10 (1.01–1.20)	0.04
Unknown	0.89 (0.55–1.46)	0.65
Esophagectomy at high-volume center‡	0.94 (0.84–1.04)	0.29
Facility location		
Midwest	Ref.	
Northeast	0.92 (0.82–1.03)	0.13
South	0.93 (0.83–1.03)	0.17
West	0.79 (0.68–0.91)	<0.01
Population density‡, n (%)		
Metropolitan	Ref.	
Urban	1.05 (0.95–1.21)	0.27
Rural	1.11 (0.82–1.49)	0.59
Unknown	0.63 (0.51–0.79)	<0.01
Year of diagnosis		
2012	Ref.	
2013	1.09 (0.93–1.27)	0.30
2014	0.97 (0.82–1.11)	0.43
2015	0.93 (0.86–1.09)	0.63
2016	0.91 (0.79–1.06)	0.18
2017	0.80 (0.70–0.95)	0.01
Charlson-Deyo comorbidity index		
0	Ref.	
1	0.91 (0.85–1.03)	0.11
≥2	1.19 (1.02–1.40)	0.02
Squamous cell carcinoma	0.79 (0.66–0.91)	0.02

*, from hospital at which esophagectomy is performed; †, average income in patient's residing zip code; ‡, metropolitan defined at population >20,000 within residing county, rural defined at population <2,500 within residing county; §, greater than or equal to 20 esophagectomies per year. Facility refers to the institution in which the esophagectomy was performed. HR, hazard ratio; CI, confidence interval.