

## Supplementary Materials

Table S1. Stage-Specific Hazard Ratios for death in surgical patients.

Data subset	Effect of year of surgery	95CI	p
Full cohort (all stages)	HR multiplies by 0.975 (drops 2.5%) per year	0.971-0.981	<0.0001
Stage 1 only	HR multiplies by 0.96 (drops 4%) per year	0.951-0.969	<0.0001
Stage 2 only	HR multiplies by 0.97 (drops 3%) per year	0.967-0.977	<0.0001
Stage 3 only	HR multiplies by 0.95 (drops 5%) per year	0.938-0.964	<0.0001
Stage 4 only	HR multiplies by 0.97 (drops 3%) per year	0.955-0.980	<0.0001

Table S2. Mixed-effects Cox regression for patients undergoing surgery.

Factor	Hazard Ratio	Lower 95% CI	Upper 95% CI	P
<b>Year of Diagnosis</b>	0.975	0.971	0.981	<0.001
<b>Facility type</b>				
Community	REF	REF	REF	REF
Comp. comm.	1.002	0.938	1.07	0.9517
Academic	0.917	0.857	0.981	0.0121
Int. network	0.985	0.919	1.056	0.6714
<b>Facility Location</b>				
New England	REF	REF	REF	REF
Middle Atlantic	0.936	0.811	1.079	0.361
South Atlantic	1.123	1.042	1.209	0.0022
East N. Central	1.116	1.034	1.205	0.0049
East S. Central	1.166	1.06	1.283	0.0016
West N. Central	1.071	0.984	1.166	0.1133
West S. Central	1.064	0.96	1.18	0.2361
Mountain	1.026	0.93	1.131	0.6098
Pacific	1.059	0.977	1.146	0.1623
<b>Age</b>	1.009	1.008	1.01	<0.001
<b>Sex</b>				
Female	REF	REF	REF	REF
Male	0.939	0.92	0.958	<0.001
<b>Hispanic origin</b>				
Yes	REF	REF	REF	REF
No	0.905	0.858	0.955	0.0003
<b>Race</b>				

White	REF	REF	REF	REF
Black	0.999	0.964	1.036	0.9704
Other	0.923	0.87	0.979	0.0079
<b>Insurer</b>				
Medicare	REF	REF	REF	REF
Private	0.932	0.906	0.96	<0.001
Medicaid	1.117	1.061	1.177	<0.001
Other Government	1.014	0.929	1.107	0.7602
None	0.963	0.901	1.03	0.2706
<b>Income Quartile</b>				
<\$40,227	REF	REF	REF	REF
\$40,277-\$50,353	0.968	0.932	1.006	0.1014
\$50,354-\$63,332	0.942	0.902	0.984	0.0075
>\$63,333	0.885	0.839	0.934	0<0.001
<b>Education Quartile</b>				
>17.6%	REF	REF	REF	REF
10.9%-17.5%	1.036	0.995	1.079	0.0877
6.3%-10.8%	1.04	0.989	1.094	0.1223
<6.3%	1.011	0.955	1.07	0.7063
<b>Distance from hospital</b>	0.986	0.976	0.996	0.0054
<b>Metro area</b>				
Metro	REF	REF	REF	REF
Metro adjacent	1.062	1.019	1.107	0.0041
Non-metro adj.	1.024	0.966	1.087	0.4244
Rural	1.042	0.967	1.122	0.2839
<b>Treatment started, days from diagnosis</b>	1.017	1.009	1.025	<0.001
<b>Charlson/Deyo Score</b>				
0	REF	REF	REF	REF
1	1.103	1.077	1.129	<0.001
2	1.228	1.174	1.285	<0.001
3+	1.306	1.222	1.395	0<0.001
<b>Primary Site</b>				
Head of pancreas	REF	REF	REF	REF
Body of pancreas	0.989	0.948	1.033	0.6254
Tail of pancreas	0.95	0.917	0.984	0.0041
Pancreatic duct	0.899	0.804	1.005	0.062
Other	1.031	0.932	1.141	0.5563
Overlapping lesion of pancreas	1.122	1.062	1.185	<0.001
Pancreas, NOS	0.95	0.904	0.998	0.0429

<b>Stage</b>				
1	REF	REF	REF	REF
2	1.257	1.201	1.316	<0.001
3	1.576	1.452	1.71	<0.001
4	2.621	2.443	2.812	<0.001
<b>T stage</b>				
TX	REF	REF	REF	REF
T0	0.474	0.375	0.599	<0.001
T1	0.688	0.611	0.776	<0.001
T2	0.907	0.815	1.01	0.0747
T3	0.991	0.895	1.097	0.865
T4	1.23	1.088	1.392	0.001
<b>N Stage</b>				
NX	REF	REF	REF	REF
N0	0.808	0.729	0.895	<0.001
N1	0.846	0.765	0.935	0.001
<b>Nodes Examined</b>	0.856	0.842	0.871	<0.001
<b>Nodes Positive</b>	1.347	1.319	1.376	<0.001
<b>Received Chemotherapy</b>	0.64	0.618	0.662	<0.001

Abbreviations: Comp. comm.: comprehensive community cancer center, Int. network: integrated network cancer program, N.: North, S.: South.

Table S3. Stage-specific hazard ratios for death in non-surgical patients.

	Effect of year of diagnosis	95CI	p
Full cohort (all stages)	HR multiplies by 0.959 (drops 4%) per year	0.957-0.962	<0.0001
Stage 1 only	HR multiplies by 0.96 (drops 4%) per year	0.950-0.965	<0.0001
Stage 2 only	HR multiplies by 0.95 (drops 5%) per year	0.950-0.959	<0.0001
Stage 3 only	HR multiplies by 0.96 (drops 4%) per year	0.952-0.963	<0.0001
Stage 4 only	HR multiplies by 0.96 (drops 4%) per year	0.960-0.965	<0.0001

Table S4. Mixed-effects Cox regression for non-surgical patients.

Factor	Hazard Ratio	Lower 95% CI	Upper 95% CI	P
<b>Year of Diagnosis</b>	0.959	0.957	0.962	<0.001
<b>Facility type</b>				
Community	REF	REF	REF	REF
Comp. comm.	0.998	0.959	1.038	0.9089
Academic	0.875	0.832	0.921	<0.001

Int. network	0.953	0.912	0.997	0.0353
<b>Facility Location</b>				
New England	REF	REF	REF	REF
Middle Atlantic	0.903	0.8	1.019	0.0973
South Atlantic	1.074	1.001	1.151	0.0456
East N. Central	1.061	0.991	1.136	0.0898
East S. Central	1.135	1.055	1.221	0.0007
West N. Central	1.036	0.962	1.115	0.3485
West S. Central	0.97	0.888	1.059	0.4952
Mountain	1.023	0.938	1.117	0.6078
Pacific	1.032	0.961	1.108	0.3913
<b>Age</b>	1.01	1.009	1.011	<0.001
<b>Sex</b>				
Male	REF	REF	REF	REF
Female	0.958	0.946	0.971	<0.001
<b>Hispanic origin</b>				
No	REF	REF	REF	REF
Yes	0.867	0.832	0.903	<0.001
<b>Race</b>				
White	REF	REF	REF	REF
Black	0.96	0.938	0.983	0.0008
Other	0.891	0.851	0.932	<0.001
<b>Insurer</b>				
Medicare	REF	REF	REF	REF
Private	0.95	0.933	0.968	<0.001
Medicaid	1.09	1.053	1.128	<0.001
Other Government	0.931	0.873	0.992	0.0269
None	1.092	1.038	1.149	0.0007
<b>Income Quartile</b>				
<\$40,227	REF	REF	REF	REF
\$40,277-\$50,353	0.957	0.932	0.983	0.0013
\$50,354-\$63,332	0.944	0.916	0.972	0.0001
>\$63,333	0.909	0.872	0.948	<0.001
<b>Education Quartile</b>				
>17.6%	REF	REF	REF	REF
10.9%-17.5%	1.038	1.005	1.073	0.0233
6.3%-10.8%	1.027	0.984	1.072	0.2241
<6.3%	0.993	0.946	1.043	0.7887
<b>Distance from hospital</b>	0.973	0.963	0.982	<0.001
<b>Metro area</b>				

Metro	REF	REF	REF	REF
Metro adjacent	1.058	1.029	1.088	0.0001
Non-metro adj.	1.052	1.01	1.095	0.014
Rural	1.057	0.997	1.121	0.0626
<b>Treatment started, days from diagnosis</b>	0.91	0.902	0.918	<0.001
<b>Charlson/Deyo Score</b>				
0	REF	REF	REF	REF
1	1.102	1.077	1.128	<0.001
2	1.216	1.177	1.257	<0.001
3+	1.439	1.374	1.507	<0.001
<b>Primary Site</b>				
Head of pancreas	REF	REF	REF	REF
Body of pancreas	0.994	0.976	1.012	0.5069
Tail of pancreas	1.153	1.128	1.179	<0.001
Pancreatic duct	0.942	0.828	1.073	0.3699
Other	0.95	0.907	0.995	0.0285
Overlapping lesion of pancreas	1.044	1.017	1.071	0.0013
Pancreas, NOS	1.092	1.065	1.119	<0.001
<b>Stage</b>				
1	REF	REF	REF	REF
2	1.115	1.078	1.153	<0.001
3	1.013	0.982	1.045	0.4066
4	1.671	1.62	1.723	<0.001
<b>Received Chemotherapy</b>	0.497	0.434	0.569	<0.001

Abbreviations: Comp. comm.: comprehensive community cancer center, Int. network: integrated network cancer program, N.: North, S.: South.