Is Distance to Provider a Barrier to Care for Medicaid Patients with Breast, Colorectal, and Lung Cancer?

John F. Scoggins[a], Catherine R. Fedorenko[a], Sara M. A. Donahue[b], Dedra Buchwald[b], David K. Blough[b], Scott D. Ramsey[a]

[a]Fred Hutchinson Cancer Research Center, Seattle, WA   [b]University of Washington, Seattle, WA

FRED HUTCHINSON CANCER RESEARCH CENTER — A LIFE OF SCIENCE

SCHOOL OF PUBLIC HEALTH — UNIVERSITY of WASHINGTON

Background

- Distance to provider (DTP) might be an important barrier to timely diagnosis and treatment for cancer patients who qualify for Medicaid coverage.

- Driving time as opposed to driving distance might be a better measure of travel burden .

Study Objectives

To test the hypothesis that the distance from a Medicaid cancer patient's residence to the location of his/her primary care provider is associated with stage at diagnosis and time to treatment.

Research Design

- We linked Washington State Cancer Registry data with Medicaid enrollment files for 3,917 breast, colorectal (CRC) and lung cancer Medicaid patients from 1997 to 2003.

- Driving distances and times from patient residence to primary care provider were calculated using MapQuest.com.

- Model 1: Logistic regression tests hypothesis that travel burden is associated with stage at diagnosis

- Model 2: Logistic regression tests hypothesis that travel burden is associated with probability of being treated within 1 year of diagnosis

- Model 3: Linear regression test hypothesis that travel burden is associated with time to treatment after diagnosis

Results

Table 1. Adjusted Odds Ratios from Logistic Models: Dep. Var. = 1 if Distant Stage

Travel Burden	Breast			CRC			Lung		
	OR	p-val	AIC	OR	p-val	AIC	OR	p-val	AIC
Miles (100's)	**1.488**	**0.037**	1946.6	1.117	0.732	753.2	1.088	0.699	1259.7
Hours	**1.270**	**0.016**	1945.1	1.076	0.667	753.1	1.038	0.749	1259.8
n		1,407			723			1,787	
Mean Dep. Var.		0.098			0.293			0.609	

Table 2. Adj. Odds Ratios from Logistic Models: Dep. Var. = 1 if Treatment Started < 12 months After Dx

Travel Burden	Breast			CRC			Lung		
	OR	p-val	AIC	OR	p-val	AIC	OR	p-val	AIC
Miles (100's)	0.828	0.690	411.06	--	--	--	0.964	0.880	969.75
Hours	0.894	0.649	411.01	--	--	--	0.990	0.941	969.81
n		1,241			511			695	
Mean Dep. Var.		0.957			0.986			0.443	

Note: Excludes distant stage

Table 3. Linear Regression Model Coefficients: Dep. Var. = Number of Days Treatment Started After Dx

Travel Burden	Breast			CRC			Lung		
	Coeff.	p-val	AIC	Coeff.	p-val	AIC	Coeff.	p-val	AIC
Miles (100's)	3.02	0.39	11685.3	**14.57**	**< 0.01**	4810.9	4.84	0.54	3080.5
Hours	1.37	0.44	11685.5	**5.86**	**0.02**	4815.1	0.82	0.84	3080.8
n		1,186			493			296	
Mean Dep. Var.		21.7			14.5			33.0	

Note: Excludes distant stage

Conclusions

- Greater distance to primary care provider is associated with diagnosis at later stage for breast cancer patients on Medicaid in Washington State.

- Greater distance to primary care provider is associated with later treatment after diagnosis for CRC patients on Medicaid in Washington State.

- Driving time is not a better measure of travel burden than driving distance.

Policy Implications

- Greater efforts are needed to provide cancer screening and timely care to Medicaid patients who live in remote areas of the state.

Funding Source