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Demographic and Economic Characteristics Associated with Sole County Pharmacy Closures, 2006-2010

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Key Findings

Twenty-five counties lost their sole community pharmacy between May 2006 and December 2010. Among these:

- The average population density is 10.4 persons per square mile, compared to 87.4 for the United States.
- The average population decreased by 1.6% between 2000 and 2010. Excluding the largest county, the average decrease was 2.4%.
- The population age 65 years and older increased 5.4% between 2000 and 2010. Excluding the largest county, the 65-and-older population increased 2.1%.
- The average change in the percentage of persons in poverty increased by 0.6 points between 2000 and 2010, from 15.5% to 16.1%, compared to a 4.0 point increase (11.3% to 15.3%) for the United States.
- The average percentage of people younger than 65 years without health insurance was 24.6% in 2010, compared to 16.2% for the United States.
- Nineteen of the 25 counties were designated "whole county" Health Professional Shortage Areas (HPSAs), meaning there was a shortage of primary medical care physicians across the entire county.
- The average number of active doctors per 1,000 persons was 0.44, compared to 2.86 for the United States. Six of the 25 counties (24%) had no active MDs or DOs in 2010.

Introduction

One of the unintended consequences of Medicare Part D implementation has been declining revenue and margins for independently owned pharmacies, particularly pharmacies in rural communities.¹ Between May, 2006 and December, 2011 there were 296 rural communities that lost their only retail pharmacy, and nine communities that lost their only two pharmacies.² Closure of sole community pharmacies reduces residents' access to a variety of key health services, including drug dispensing, patient assessments, immunizations, and medication therapy management services that promote medication adherence. In rural areas already having primary medical care shortages (designated Health Professional Shortage Areas, or HPSAs), access



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problems are exacerbated by sole community pharmacy closures. This policy brief describes demographic and economic characteristics associated with counties experiencing closure of their sole pharmacy between 2006 and 2010.

Background

Beginning in January 2006, Medicare Part D provided millions of Medicare beneficiaries access to affordable drug coverage through privately administered Prescription Drug Plans (PDPs). Though access to PDPs resulted in increased prescription drug utilization, the program also unintentionally disadvantaged certain types of pharmacies through reduced reimbursement rates for drugs covered by the PDPs.^{1,3,4} Because rural and independently owned pharmacies rely disproportionately on prescription drug fulfillment revenue, these pharmacies were particularly hard hit by reduced prices that affected their ability to remain profitable. Consequently, after 2006 a significant number of these pharmacies went out of business, leaving many communities without an important source of access to health services.² This brief describes seven demographic and economic characteristics of counties that lost their only independent pharmacy between May 1, 2006, and December 1, 2010, and discusses implications of these findings for health care access and delivery in these types of areas.

Methods

Data from the National Council for Prescription Drug Programs were used to identify closures of independent retail pharmacies that were the sole pharmacy provider in a county between May 1, 2006, and December 1, 2010. County-level demographic and economic data were obtained for 2000 and 2010 (when available) from the United States Census Bureau, the United States Bureau of Labor Statistics, and the Health Resources and Services Administration. Demographic data obtained include changes in census population and population older than 65 years between 2000 and 2010, and population density per square mile in 2010. Economic data obtained include percentage of persons in poverty between 2000 and 2010, and percentage of persons younger than 65 years without health insurance in 2010. Also included are 2010 county-level HPSA designations and total active, non-federal physicians in 2010, both indicators of access to health services within a county. Rural Area statistics were calculated from the 2011 Area Resource File (ARF) for counties with Rural Urban Commuting Area (RUCA) codes of 7, 8, and 9 ("small town" designations).

Findings

The 25 counties and changes in their key demographic and economic indicators are listed in Table 1, ranked by population in 2010 from lowest to highest. Nineteen of the 25 counties (76%) had RUCA codes 7 and above, signifying a high concentration of "small town" characteristics in the sample. While the general population growth for the United States was nearly 10% between 2000 and 2010, average general population growth across the 25 counties and for the Rural Area comparator were negative (-1.6% and -1.9%, respectively). Growth in the 65 and older population for the counties was about a third of that of the United States over the same period (5.4% vs. 15.1%, respectively), and even lower after excluding the largest county in the sample (3.2%). Though the average growth in the percentage of persons in poverty was only 0.6 points across the 25 counties (relative to 4.0 points for the United States), in absolute terms the average percent of persons in poverty was higher in the 25 counties than the United States in both 2000 (15.5% vs. 11.3%) and 2010 (16.1% vs. 15.3%). The average percentage of persons under 65 without health insurance is over 50% higher in the 25 counties relative to the United States (24.6% vs. 16.2%, respectively), and more than 20% higher than the Rural Area comparator (20.3%). The average active number of physicians (MDs and DOs) per capita is a fraction of the average in the United States (0.44 vs. 2.86), though comparable to the average for Rural Areas (0.57).

Averages across counties, with and without the largest county, are included in Table 2 along with the overall statistics for comparable Rural Areas and for the United States. Statistical means excluding the largest county, Powhatan, Virginia, are provided because data from Powhatan skews the means due to its size.

Table 1. Demographic and Economic Indicators of Counties That Lost Their Sole Pharmacy Provider between May 2006 and December 2010

County ^(a)	Population, 2010	Population Density 2010 (people/sq. mile) ^(b)	Population Change, 2000-2010 ^(c,d)	65+ Change, 2000-2010 ^(c,d)	% Persons in Poverty Change, 2000-2010 ^(e)	% < 65 without Health Insurance, 2010 ^(f)	HPSA Designation, 2010 ^(g)	Active Physicians per 1,000 population, 2010 ^(g)
Sully, SD	1,373	1.4	-11.8%	-3.0%	0.8	15.1	Whole	0.00
Gosper, NE	2,044	4.5	-4.6%	-3.4%	1.5	21.4	None	0.49
Culberson, TX	2,398	0.6	-19.4%	6.0%	-1.6	36.0	Whole	0.83
Kiowa, KS	2,553	3.5	-22.1%	-31.0%	2.3	18.1	Whole	0.78
Jackson, SD	3,031	1.6	3.4%	19.7%	5.7	23.4	Whole	0.00
Sherman, TX	3,034	3.3	-4.8%	-6.7%	-1.2	35.7	Whole	0.00
Cochran, TX	3,127	4.0	-16.2%	-13.2%	-4.8	34.1	None	0.64
Lipscomb, TX	3,302	3.5	8.0%	-14.0%	-0.7	30.9	Whole	0.00
Upton, TX	3,355	2.7	-1.4%	2.3%	-1.8	31.5	Whole	0.30
Baker, GA	3,451	10.1	-15.3%	-4.8%	2.5	22.6	Whole	0.00
Schleicher, TX	3,461	2.6	17.9%	-8.7%	-1.7	33.0	Whole	0.58
Custer, ID	4,368	0.9	0.6%	29.8%	3.0	19.8	Whole	0.00
Hot Springs, WY	4,812	2.4	-1.4%	11.2%	-0.4	20.1	Whole	1.45
Hidalgo, NM	4,894	1.4	-17.5%	0.9%	0	24.8	Whole	0.20
Lincoln, ID	5,208	4.3	28.8%	8.5%	2.8	29.0	Whole	0.19
Scott, IL	5,355	21.3	-3.3%	5.6%	-0.6	12.9	Whole	0.37
Beaver, OK	5,636	3.1	-3.8%	-12.1%	1.6	24.7	None	0.53
Hamlin, SD	5,903	11.6	6.6%	-3.9%	0.4	15.5	Whole	0.17
Saguache, CO	6,108	1.9	3.2%	39.3%	3.4	34.0	Part	0.98
Dallam, TX	6,703	4.5	7.7%	-1.4%	-0.9	31.0	Whole	1.04
Cameron, LA	6,839	5.3	-31.5%	-16.7%	1.8	22.7	Whole	0.15
King and Queen, VA	6,945	22.0	4.8%	10.6%	0.9	18.8	Whole	0.58
Cleveland, AR	8,689	14.5	1.4%	21.9%	1.4	20.8	Whole	0.12
Fulton, AR	12,245	19.8	5.2%	16.5%	-0.7	24.3	Part	0.74
Powhatan, VA	28,046	107.8	25.3%	80.9%	1.7	13.8	Part	0.93

(a) Data are sorted by 2010 census population, from smallest to largest.

(b) Data source for land area is the United States Census Bureau. <http://quickfacts.census.gov/qfd/states/05/05025.html>.

(c) Data source for 2000 census and over 65 population is United States Census Bureau.

<http://www.census.gov/prod/www/decennial.html>.

(d) Data source for 2010 census and population older than 65 years is United States Census Bureau.

<http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>.

(e) Data source for percentage of persons in poverty is Small Area Income Poverty Estimates.

<http://www.census.gov/did/www/saie/data/interactive/#>.

(f) Data source for percentage of population younger than 65 years without health insurance is Small Area Health Insurance Estimates.

Website: <http://www.census.gov/did/www/sahie/data/interactive/>.

(g) Data source for HPSA designation and total active MDs and DOs is the Health Resources and Services Administration, 2011 Area Resource File.

Table 2. Averages of Demographic and Economic Indicators across Counties That Lost Their Sole Pharmacy Provider, for Rural Areas, and for the United States

	Population Density, 2010 (people/sq. mile) ^(a)	Population Change, 2000-2010 ^(b,c)	65+ Change, 2000-2010 ^(b,c)	% Persons in Poverty Change, 2000-2010 ^(d)	% Persons Under 65 without Health Insurance, 2010 ^(e)	Active Physicians per 1,000 population, 2010 ^(f)
Average	10.4	-1.6%	5.4%	+0.6	24.6	0.44
Average, without largest county (Powhatan, VA)	10.2	-2.4%	3.2%	+0.6	25.3	0.42
Rural Areas ^(g)	15.8	-1.9%	3.2%	+2.4	20.3	0.57
United States	87.4	9.7%	15.1%	+4.0	16.2	2.86

(a) Data source for land area is the United States Census Bureau. <http://quickfacts.census.gov/qfd/states/05/05025.html>.

(b) Data source for 2000 census and population older than 65 years is United States Census Bureau.

<http://www.census.gov/prod/www/decennial.html>.

(c) Data source for 2010 census and population older than 65 years is United States Census Bureau.

<http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>.

(d) Data source for percentage of persons in poverty is Small Area Income Poverty Estimates.

<http://www.census.gov/did/www/saie/data/interactive/#>.

(e) Data source for percentage of persons younger than 65 years without health insurance is Small Area Health Insurance Estimates.

<http://www.census.gov/did/www/sahie/data/interactive/>.

(f) Data source for total active MDs and DOs is the Health Resources and Services Administration (HRSA), 2011 Area Resource File.

(g) Rural Area averages calculated for counties having Rural Urban Commuting Area codes of 7, 8, and 9 ("small town"). "65+ Change" is between 2001 and 2009; "% Persons in Poverty Change" is between 2000 and 2009; average "% Persons under 65 without Health Insurance" is for 2009.

Discussion

Despite potential access to Medicare prescription drug fulfillment by mail service, or from other pharmacies in the region, residents of rural counties that lost their sole pharmacy provider after Medicare Part D implementation in 2006 are vulnerable to worsening health care access, as sole community pharmacies provide a variety of primary care-related services beyond drug dispensing. Demographic changes among these counties show, on average, a decrease in general population but an increase in population older than 65 years—trends that work against the viability of rural pharmacies that rely on cash-paying customers to offset reduced reimbursement from Medicare PDPs. Furthermore, the confluence of growth in the percentage of persons in poverty and high uninsurance rates aggravate the economic environment in the communities that sole pharmacy providers serve, as fewer persons are able to cover the direct cost of prescription medications that serve as the main source of financial margin for rural pharmacies. The majority of these counties already experience primary medical care access problems, as the whole-county HPSA designations and average number of physicians per capita in these counties show. Consequently, rural counties, especially those that have shortages of primary care providers, rely heavily on the array of health services that sole pharmacies provide, and pharmacy closure removes a critical source of health care. Policy makers might weigh the benefit of improved reimbursement policies to sole county pharmacies against the cost of little to no access to primary care health services, such as patient assessments, immunizations, and medication therapy management services, among rural residents.

Notes

¹Klepser DG, X. L. (2011). Trends in community pharmacy counts and closures before and after the implementation of Medicare Part D. *Journal of Rural Health*, 27(2), 168-175.

²Boyle K, Ullrich F, Mueller K. (2012). Independently Owned Pharmacy Closures in Rural America (Brief No. 2012-4). RUPRI Center for Rural Health Policy Analysis.

³Lichtenberg FR, S. S. (2007). The impact of Medicare Part D on prescription drug use by the elderly. *Health Affairs*, 26(6), 1735-1744.

⁴Yin W, B. A. (2008). The effect of the Medicare Part D prescription benefit on drug utilization and expenditures. *Annals of Internal Medicine*, 148(3), 169-177.