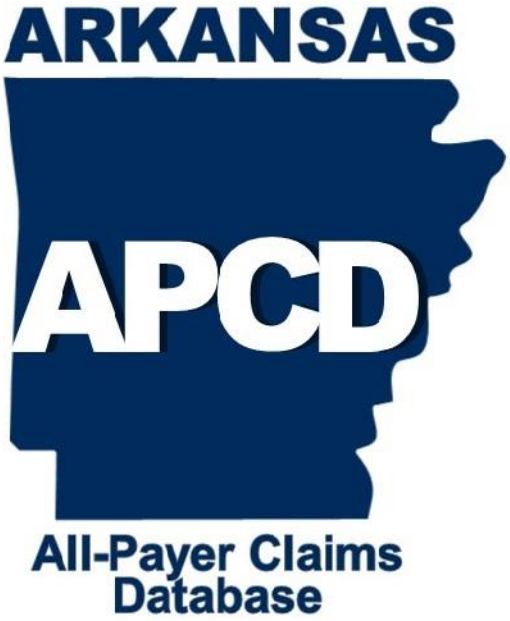

ARKANSAS MEDICARE HbA1c UTILIZATION REPORT

November 20, 2015

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Version 1.0.2015

ACHI is a nonpartisan, independent, health policy center that serves as a catalyst to improve the health of Arkansans.

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Revision History

VERSION	CHANGE MGMT. #	DATE	OWNER	DESCRIPTION
1.0.2015		11/20/2015	T. Mac Bird, Ph.D., University of Arkansas for Medical Sciences (UAMS)	HbA1c analytic report using the Arkansas All-Payer Claims Database (APCD) Medicare data

This dynamic document will be reviewed and updated on a periodic basis. Each change will be recorded in the Revision History section.

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INTRODUCTION

This "Arkansas Medicare HbA1c Utilization Report" provides a broad look at the healthcare burden and quality of care for type II diabetics among the Medicare population in Arkansas. This study uses Arkansas All-Payer Claims Database (APCD) Medicare datasets from calendar years (CYs) 2012 and 2013.

This report examines CY 2013 county rates of type II diabetes among Arkansas Medicare beneficiaries aged 65 years and over and rates of annual hemoglobin A1c (HbA1c) testing as a measure of diabetes control. The association between the prevalence of type II diabetes and HbA1c testing across counties is also examined.

In 2013, there were 394,927 eligible Medicare beneficiaries aged 65 years and over, of whom 93,313 met this study's definition for type II diabetes (see Methodology), yielding a statewide prevalence rate of 23.6 percent. Of the 93,313 type II diabetics, 71,461 received at least one HbA1c test in 2013, yielding a statewide testing rate of 76.6 percent.

METHODOLOGY

Study Population

All Medicare Part B beneficiaries 65 years of age or over who lived in Arkansas with 24 months of eligibility during CYs 2012 and 2013 were included in the study. Beneficiaries were identified as having type II diabetes if they had at least two claims with different dates of service during the two-year span with an ICD-9-CM[1] diagnosis code for type II diabetes (i.e., 250.x0 and 250.x2).

Rate Calculations

Type II diabetes prevalence rates and HbA1c annual testing rates were derived from the APCD Medicare dataset. All Medicare beneficiaries included in the study were assigned to their county of residence and comprise the county level denominator for the type II diabetes rate calculation. All Medicare beneficiaries in the study that met the definition for type II diabetes make up the numerator for the type II diabetes rate calculation. The Medicare beneficiaries that met the definition for type II diabetes also make up the denominator for the HbA1c test rate calculation. Type II diabetics with at least one Part B claim for an HbA1c test in 2013 make up the numerator for the HbA1c test rate calculation.

Analysis

Both unadjusted and adjusted regression analyses were employed to examine the association between county level type II diabetes rates and HbA1c testing rates. The adjusted analyses took into account county level: (1) percent minority population, (2) percent male/female, and (3) mean age.

[1] ICD-9-CM is the International Classification of Diseases, Ninth Revision, Clinical Modification." For more information, visit the Centers for Disease Control and Prevention website at http://www.cdc.gov/nchs/icd/icd9cm.htm for more information.

STUDY RESULTS

Table 1 displays the number of Arkansas Medicare Part B beneficiaries aged 65 years or older in CY 2013, the number of these beneficiaries diagnosed with type II diabetes, and the number of type II diabetics with at least one HbA1c test during 2013. Of the 394,927 beneficiaries, 93,313 (23.6 percent) met the definition for type II diabetes. Of these type II diabetics, 71,461 (76.6 percent) received at least one HbA1c test in CY 2013.

Table 1. HbA1c Testing among Arkansas Medicare Part B Beneficiaries with Type II Diabetes in 2013

Measure	Total Beneficiaries
Medicare Part B, aged 65 years and over	394,927
Type II Diabetes Diagnoses	93,313
Type II Diabetes and ≥1 HbA1c test	71,461

Table 2 displays the number of Arkansas Medicare Part B beneficiaries aged 65 years or over in CY 2013, the number of these beneficiaries diagnosed with type II diabetes, and the number of type II diabetics having at least one HbA1c test during 2013 stratified by county. Rates of type II diabetes ranged from a high of 32.9 percent in Monroe County to a low of 17.2 percent in Madison County. Rates of HbA1c testing ranged from a high of 82.6 percent in Garland County to a low of 64.7 percent in Phillips County.

Table 2. Individuals Eligible for Medicare (MCR) Part B Services during All Months of CY 2013

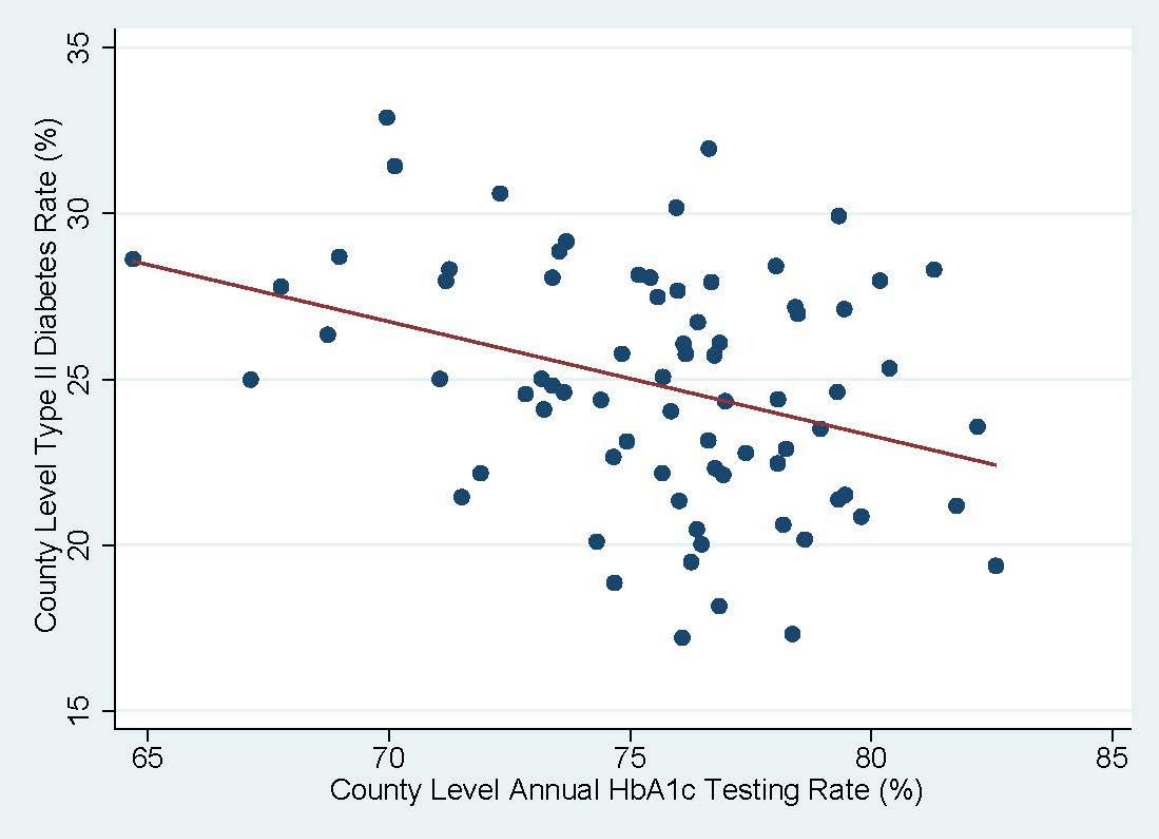
County	All Eligible MCR Beneficiaries ≥65 Years Old	All Eligible Medicare Beneficiaries ≥65 Years Old with Type II Diabetes	Diabetes Rate	All Eligible MCR Beneficiaries ≥65 Years Old with Type II Diabetes and ≥1 HbA1c Test in 2013	HbA1c Testing Rate
Arkansas	2,873	651	22.7%	486	74.7%
Ashley	3,386	937	27.7%	712	76.0%
Baxter	10,959	2,259	20.6%	1,766	78.2%
Benton	24,691	4,276	17.3%	3,351	78.4%
Boone	7,057	1,634	23.2%	1,252	76.6%
Bradley	1,695	480	28.3%	342	71.3%
Calhoun	666	178	26.7%	136	76.4%
Carroll	4,544	825	18.2%	634	76.8%
Chicot	1,902	574	30.2%	436	76.0%
Clark	3,233	650	20.1%	483	74.3%
Clay	2,883	743	25.8%	556	74.8%
Cleburne	5,412	1,371	25.3%	1,102	80.4%
Cleveland	1,247	353	28.3%	287	81.3%
Columbia	3,506	987	28.2%	742	75.2%
Conway	3,541	785	22.2%	594	75.7%
Craighead	11,661	2,845	24.4%	2,221	78.1%
Crawford	7,804	1,521	19.5%	1,160	76.3%
Crittenden	5,075	1,622	32.0%	1,243	76.6%
Cross	2,581	645	25.0%	433	67.1%
Dallas	1,251	313	25.0%	229	73.2%
Desha	1,842	579	31.4%	406	70.1%
Drew	2,304	665	28.9%	489	73.5%

Faulkner	11,265	3,055	27.1%	2,427	79.4%
Franklin	2,668	611	22.9%	478	78.2%
Fulton	2,373	584	24.6%	430	73.6%
Garland	23,028	4,462	19.4%	3,685	82.6%
Grant	2,291	618	27.0%	485	78.5%
Greene	5,545	1,333	24.0%	1,011	75.8%
Hempstead	2,682	700	26.1%	538	76.9%
Hot Spring	4,557	1,119	24.6%	815	72.8%
Howard	2,127	532	25.0%	378	71.1%
Independence	5,550	1,430	25.8%	1,089	76.2%
Izard	2,647	542	20.5%	414	76.4%
Jackson	2,658	775	29.2%	571	73.7%
Jefferson	9,719	2,715	27.9%	2,082	76.7%
Johnson	3,225	688	21.3%	523	76.0%
Lafayette	1,105	314	28.4%	245	78.0%
Lawrence	3,223	876	27.2%	687	78.4%
Lee	1,272	357	28.1%	262	73.4%
Lincoln	1,390	416	29.9%	330	79.3%
Little River	2,029	621	30.6%	449	72.3%
Logan	3,677	779	21.2%	637	81.8%
Lonoke	7,449	1,942	26.1%	1,478	76.1%
Madison	2,819	485	17.2%	369	76.1%
Marion	3,291	659	20.0%	504	76.5%
Miller	5,554	1,554	28.0%	1,246	80.2%
Mississippi	5,098	1,463	28.7%	1,009	69.0%
Monroe	1,386	456	32.9%	319	70.0%
Montgomery	1,633	308	18.9%	230	74.7%
Nevada	1,418	323	22.8%	250	77.4%
Newton	1,400	292	20.9%	233	79.8%
Ouachita	4,042	995	24.6%	789	79.3%
Perry	1,716	383	22.3%	294	76.8%
Phillips	2,889	827	28.6%	535	64.7%
Pike	1,745	392	22.5%	306	78.1%
Poinsett	3,664	1,007	27.5%	761	75.6%
Polk	3,719	896	24.1%	656	73.2%
Pope	7,899	1,827	23.1%	1,369	74.9%
Prairie	1,439	357	24.8%	262	73.4%
Pulaski	48,136	11,717	24.3%	9,019	77.0%
Randolph	2,829	665	23.5%	525	78.9%
Saline	3,511	982	28.0%	699	71.2%
Scott	7,610	1,908	25.1%	1,444	75.7%
Searcy	1,782	395	22.2%	284	71.9%
Sebastian	1,720	370	21.5%	294	79.5%

Sevier	15,286	3,381	22.1%	2,601	76.9%
Sharp	1,913	537	28.1%	405	75.4%
St. Francis	4,117	880	21.4%	698	79.3%
Stone	2,471	530	21.4%	379	71.5%
Union	6,236	1,604	25.7%	1,231	76.7%
Van Buren	3,385	798	23.6%	656	82.2%
Washington	20,293	4,093	20.2%	3,218	78.6%
White	11,038	2,691	24.4%	2,002	74.4%
Woodruff	1,226	323	26.3%	222	68.7%
Yell	3,069	853	27.8%	578	67.8%
Total	**394,927**	**93,313**	**23.6%**	**71,461**	**76.6%**

Figure 1 depicts the relationship between county level diagnosis rates for type II diabetes and annual county level HbA1c testing rates. There was a general trend toward counties with the highest diabetes rates also having the lowest HbA1c testing rates—Phillips County in eastern Arkansas being a prime example of this phenomenon. In the unadjusted regression analysis, there was a -0.34 percent decline in HbA1c testing rates for each 1 percent increase in the type II diabetes rate ($p<0.01$). When county level demographic characteristics were taken into account in the adjusted analysis, the type II diabetes rate was no longer a statistically significant predictor of HbA1c testing rates. However, the county level percent-minority population was a statistically significant predictor of HbA1c testing rates. There was a -0.10 percent decline in the HbA1c testing rate for each 1 percent increase in the minority population rate.

Figure 1. County Level Diagnosis Rates for Type II Diabetes and Annual County Level HbA1c Testing Rates



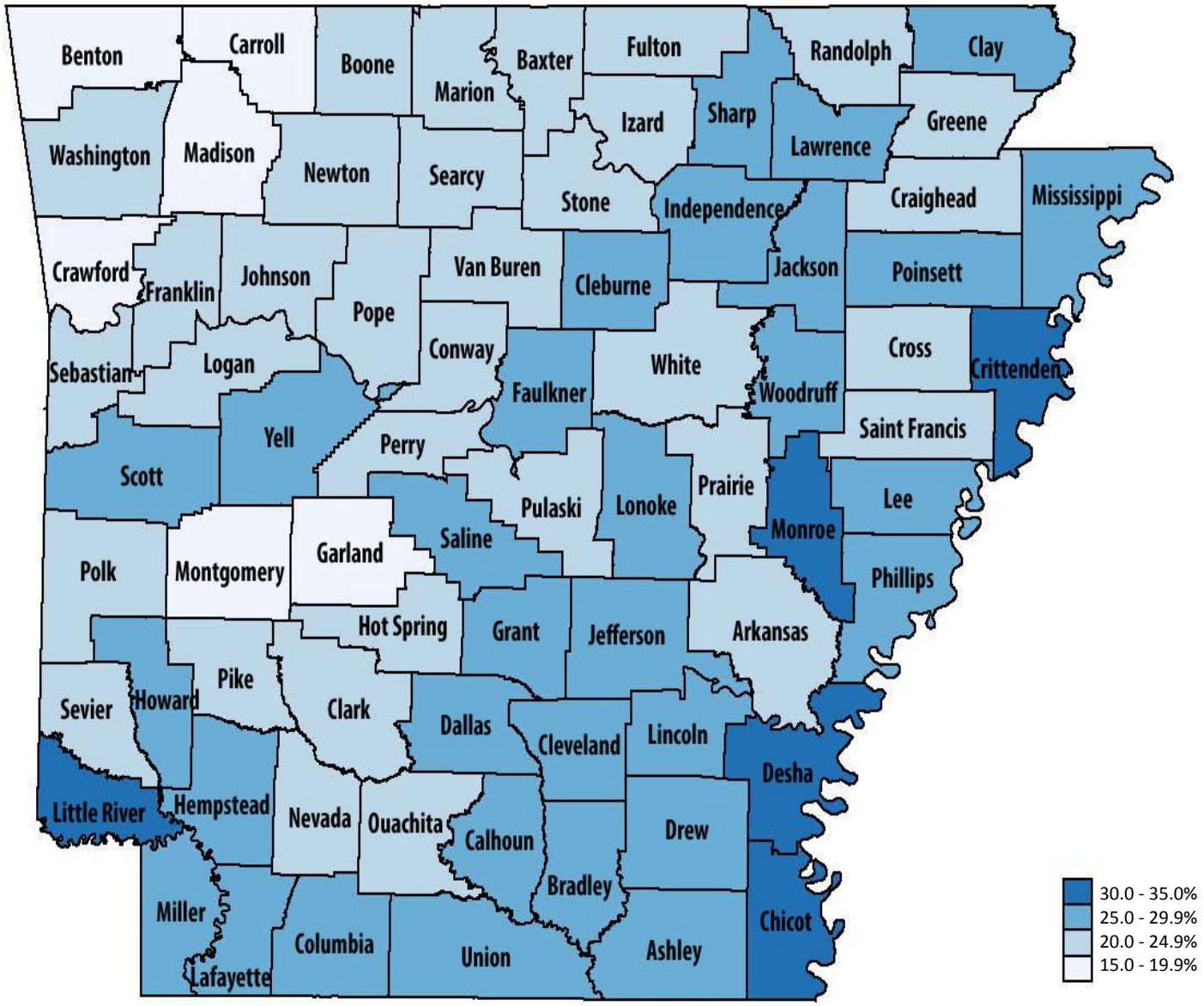
DISCUSSION

The reason for the apparent care gap, represented by high rates of type II diabetes and low rates of HbA1c testing in many of the southern and eastern counties in Arkansas, is not readily apparent. Further investigation into factors that could be contributing to and/or perpetuating these healthcare disparities should take into account demographic, economic, healthcare workforce, and environmental factors in order to identify those factors that are significantly associated with these disparities and that may be modifiable.

This study demonstrates the utility of using the Arkansas APCD to provide insight about Arkansas population health issues and patterns of healthcare utilization.

APPENDIX A –MEDICARE TYPE II DIABETES RATE BY COUNTY

Type II Diabetes Rate for Medicare Beneficiaries 2013



APPENDIX B – MEDICARE HBA1C TESTING RATE BY COUNTY

HbA1c Annual Test Rate for Medicare Type II Diabetics 2013