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ADHD Medication: Wide Variation Across Kentucky Raises Questions

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Community-level assessments show a wide range in the prevalence of ADHD.

Over 1.5 million prescriptions for psychostimulants (methylphenidate and amphetamines) and selective norepinephrine reuptake inhibitors (SNRI) were written for Kentucky children on Medicaid from 2000-2010, to treat, among other conditions, attention deficit hyperactivity disorder (ADHD).[1] These drugs are more commonly known as Adderall, Vyvanse, Concerta, Focalin, Ritalin, and Strattera.[2] An estimated 3-5% of U.S. school-age children have ADHD, but community-level assessments show wide variation—ranging from 1.7 to 26%.[3] The symptoms of ADHD include inattention and/or hyperactivity and impulsivity—behaviors that are not conducive to good school performance. These drugs help children focus and concentrate, but their rising use has raised important questions about whether the disease is being accurately diagnosed.[4] And while our focus here is on Medicaid pharmaceutical utilization, these issues are not unique to Medicaid.

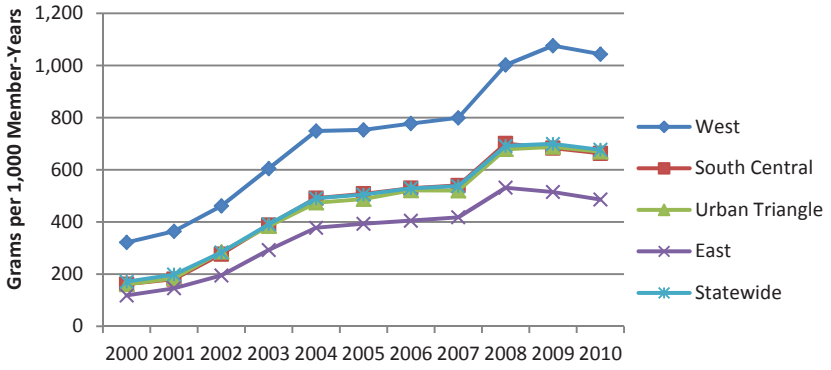
A collaborative effort between 3 University of Kentucky Colleges and the Foundation for a Healthy Kentucky to examine Medicaid pharmaceutical utilization.

In a collaborative effort between the College of Communication and Information, Center for Business and Economic Research, and Institute for Pharmaceutical Outcomes and Policy—and funded by the Foundation for a Healthy Kentucky—we examine the Medicaid pharmaceutical outpatient utilization by children (18 and younger) of ADHD medication from 2000 to 2010.[5]

Western Kentucky shows the highest use, while Eastern Kentucky has the lowest on a per 1,000 Medicaid member-year basis.

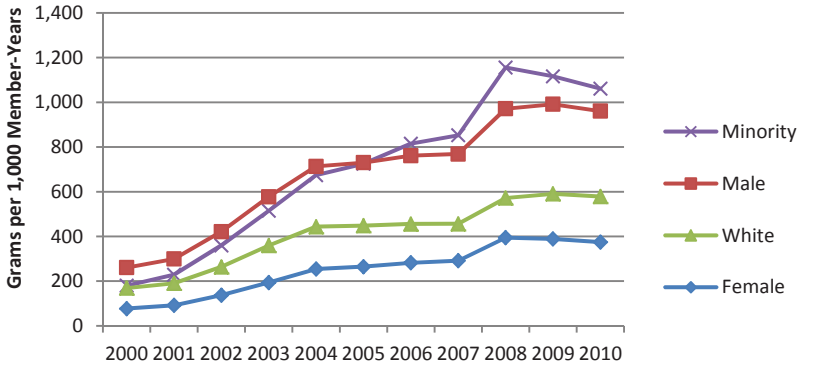
The highest utilization on a member-year[6] basis is in Western Kentucky, as shown in Figure 1.[7] Leslie County has the lowest usage at 112 grams per 1,000 member-years while Henderson County, at a rate over 11 times greater, has the highest at 1,268 grams (see Table 2). The largest increase in dispensed grams was among minorities, which increased

FIGURE 1
Medicaid Pharmaceutical Utilization, ADHD Drugs, 2000-2010, Children (18 and Younger), Statewide and by Region



Source: Author's analysis of Kentucky Medicaid data from the University of Kentucky, College of Pharmacy, Institute for Pharmaceutical Outcomes and Policy (IPOP)

FIGURE 2
Medicaid Pharmaceutical Utilization, ADHD Drugs, Children by Gender, Race, Ethnicity 2000-2010



Source: Author's analysis of Kentucky Medicaid data from the University of Kentucky, College of Pharmacy, Institute for Pharmaceutical Outcomes and Policy (IPOP)

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to over 1,061 grams in 2010, compared to about 578 grams for Whites (Figure 2).[8] By 2010 males had significantly higher utilization than females, evidenced by almost 961 grams compared to about 374. The wide variation in utilization across Kentucky raises important questions about whether some children are receiving too much medication or others too little. On the other hand, if most are receiving the right amount, then it is vital to understand the environmental or other factors leading to a utilization rate in Western Kentucky that is double that of Eastern Kentucky. All of these issues have important implications for public health, education outcomes, and ultimately future economic performance—both at the individual and community levels.

Leslie County has the lowest usage at 112 grams, while Henderson County has the highest at 1,268 grams.

TABLE 1
Medicaid Pharmaceutical Utilization, ADHD Medication, Children (18 and Younger), 2000-2010, by Kentucky County

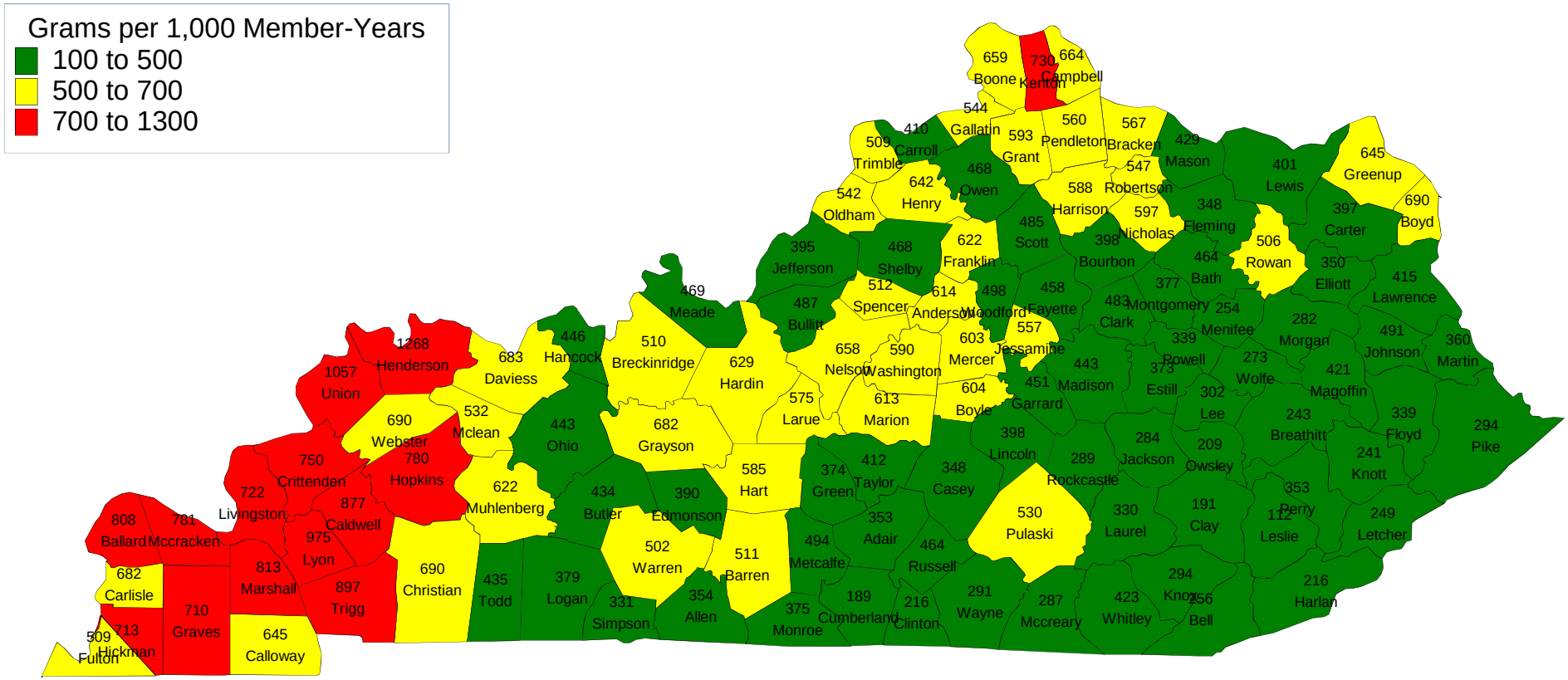
County	Grams per 1,000 M-Y	County	Grams per 1,000 M-Y	County	Grams per 1,000 M-Y	County	Grams per 1,000 M-Y
Adair	353	Edmonson	390	Knox	294	Nicholas	597
Allen	354	Elliott	350	Larue	575	Ohio	443
Anderson	614	Estill	373	Laurel	330	Oldham	542
Ballard	808	Fayette	458	Lawrence	415	Owen	468
Barren	511	Fleming	348	Lee	302	Owsley	209
Bath	464	Floyd	339	Leslie	112	Pendleton	560
Bell	256	Franklin	622	Letcher	249	Perry	353
Boone	659	Fulton	509	Lewis	401	Pike	294
Bourbon	398	Gallatin	544	Lincoln	398	Powell	339
Boyd	690	Garrard	451	Livingston	722	Pulaski	530
Boyle	604	Grant	593	Logan	379	Robertson	547
Bracken	567	Graves	710	Lyon	975	Rockcastle	289
Breathitt	243	Grayson	682	Madison	443	Rowan	506
Breckinridge	510	Green	374	Magoffin	421	Russell	464
Bullitt	487	Greenup	645	Marion	613	Scott	485
Butler	434	Hancock	446	Marshall	813	Shelby	468
Caldwell	877	Hardin	629	Martin	360	Simpson	331
Calloway	645	Harlan	216	Mason	429	Spencer	512
Campbell	664	Harrison	588	McCracken	781	Taylor	412
Carlisle	682	Hart	585	McCreary	287	Todd	435
Carroll	410	Henderson	1,268	McLean	532	Trigg	897
Carter	397	Henry	642	Meade	469	Trimble	509
Casey	348	Hickman	713	Menifee	254	Union	1,057
Christian	690	Hopkins	780	Mercer	603	Warren	502
Clark	483	Jackson	284	Metcalfe	494	Washington	590
Clay	191	Jefferson	395	Monroe	375	Wayne	291
Clinton	216	Jessamine	557	Montgomery	377	Webster	690
Crittenden	750	Johnson	491	Morgan	282	Whitley	423
Cumberland	189	Kenton	730	Muhlenberg	622	Wolfe	273
Daviess	683	Knott	241	Nelson	658	Woodford	498

Note: ADHD medication includes the therapeutic classes H2V, H7Y, & J5B.
Source: Author's analysis of Kentucky Medicaid data from The University of Kentucky, College of Pharmacy, Institute for Pharmaceutical Outcomes and Policy (iPOP)

Notes

[1]*Kentucky Medicaid Pharmaceutical Utilization Guide, 2000-2010*, available at <cber.uky.edu>. [2]ADHD medication includes the therapeutic classes of H2V, H7Y, and J5B. Medicaid is a state-federal partnership to provide health care coverage for people with lower incomes, older people, people with disabilities, and some families and children. The data presented here do not include pharmaceutical utilization that a Medicaid patient receives while admitted to a hospital. Also, these data do not include pharmaceuticals that are paid for by sources other than Medicaid, such as private insurance or out-of-pocket money. [3]Farasat Bokhari, et al., "An analysis of the significant variation in psycholstimulant use across the U.S.," *Pharmacoepidemiology and drug safety*, 2005 Apr;14(4):267-75. [4]Susan H. Busch, "Medication Treatment for ADHD: Controversy Abounds," *Health Affairs*, 28, no. 5 (2009): 1549-1550. [5]The University of Kentucky, Office of Research Integrity, Institutional Review Board, authorized this research with Exemption Certification for Protocol No. 11-0641-X2B (September 2011), as did the Kentucky Cabinet for Health and Family Services Institutional Review Board (CHFS IRB) (November 2011). [6]Medicaid Member-Year is derived by summing the number of individuals eligible for Medicaid in each county for each year, 2000-2010. A Medicaid recipient is counted for each year they are eligible. For example, a Medicaid recipient who was eligible in 2000, 2005, and 2010 has three member years. Our denominator is the sum of all member years for a county, 2000-2010. The numerator is the number of grams dispensed. [7]The West region is comprised of the counties in the three most western Area Development Districts (ADDs). The East region is comprised of the six most eastern ADDs. The Urban Triangle is comprised of the Bluegrass, KIPDA, and N. KY ADDs, and the South Central region is Barren River, Lincoln Trail, and Lake Cumberland ADDs. [8]Minorities include Blacks, Hispanics, Asians, and other.

FIGURE 3
Dispensed ADHD Drugs in Kentucky, Medicaid-Eligible Children, 2000-2010



Source: Author's analysis of Kentucky Medicaid data from The University of Kentucky, College of Pharmacy, Institute for Pharmaceutical Outcomes and Policy (IPOP).