ARTICLE

Prevalence of Antihypertensive, Antidiabetic, and Dyslipidemic Prescription Medication Use Among Children and Adolescents

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Objective: To document trends in the use of prescription medications indicated for types 1 and 2 diabetes mellitus, hypertension, and dyslipidemia among children and adolescents.

Design: Serial, cross-sectional study.

Setting: Age-eligible children and adolescents with prescription drug benefits managed by CVS Caremark, a pharmacy benefits manager.

Participants: Commercially insured US children and adolescents aged 6 to 18 years. Population size varied by month from approximately 5.3 million to 6 million individuals.

Main Outcome Measure: Monthly prevalence of prescription drug use, measured from September 1, 2004, through June 30, 2007.

Results: The 1-month prevalence of antihypertensive, dyslipidemic, or oral antidiabetic medication or insulin use increased 15.2% from 3.3 per 1000 youths in November 2004 to 3.8 per 1000 youths in June 2007. The 16- to 18-year-olds had the highest prevalence overall, but the greatest rate of increase was found among 6- to 11-year-olds: 18.7% for girls and 17.3% for boys. Among antihypertensive medications, β-blockers had the highest prevalence (1.5 per 1000 youths), followed by angiotensin-converting enzyme inhibitors, diuretics, calcium channel blockers, and angiotensin II receptor blockers. For 6- to 11-year-olds, angiotensin-converting enzyme inhibitor use increased 27.7% among girls and 25.2% among boys. Dyslipidemia therapy, which was dominated by statin use, declined 22.9%.

Conclusions: The increasing use of oral antidiabetic and antihypertensive pharmacotherapy among children and adolescents, especially in the younger age group, indicates either an increased awareness of treatment needs or increased incidence of cardiovascular risk factors typically associated with adult populations. The decrease in treatment of dyslipidemia may reflect the ongoing controversy regarding statin use.

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OVERWEIGHT AND OBESITY have reached epidemic proportions in the United States. An estimated 32.2% of the adult population are obese, and 66.3% are overweight or obese.[1] Excessive weight among American children and adolescents has also reached epidemic proportions.[2,3] Analysis of responses from the 2003-2004 National Health and Nutrition Examination Survey projects that 18.8% of children aged 6 to 11 years and 17.4% of adolescents aged 12 to 19 years are overweight or obese, an increase of 24.5% and 17.6%, respectively, in the 4 years since the 1999-2000 National Health and Nutrition Examination Survey.[1,4]

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The greater incidence of serious chronic health conditions, such as diabetes mellitus, hypertension, and asthma, among the overweight population, as well as the realization that children and adolescents are not immune to obesity, has led to calls for immediate action.[5-7] Overweight children and adolescents have substantially elevated rates of prehypertension and hypertension, impaired glucose tolerance and insulin resistance syndrome, type 2 diabetes mellitus, and vascular abnormalities.[3,8-13] Although clinical definitions, time frames, and age ranges vary across studies, recent epidemiologic investigations estimate the prevalence of pediatric hypertension to be between 2.2% and 13.8%, type 2 diabetes to be between 0.15% and 0.22%, impaired fasting glucose level to be 11%, high total cholesterol level (≥200 mg/dL [to convert to millimoles per liter, multiply by 0.259]) to be 4.0%, and metabolic syndrome to be between 4.2% and 12.7%.[8,14-22]

Therapeutic regimens for pediatric overweight, hypertension, type 2 diabetes, and

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Table 1. Drug Classifications Included in the Analysis

Drug Category	GPI 4	Class
Antidiabetics		
Insulin	2710	Insulin
Amylin analogues	2715	Antidiabetic amylin analogues
Oral antidiabetics	2717	Incretin mimetic agents
	2720	Sulfonylureas
	2723	Antidiabetic amino acid derivatives
	2725	Biguanides
	2728	Meglitinide analogues
	2730	Antidiabetics, other
	2750	α-Glucosidase inhibitors
	2755	Dipeptidyl peptidase-4 inhibitors
	2760	Insulin-sensitizing agents
	2799	Antidiabetic combinations
Antihypertensives		
β-Blockers	3310	β-Blockers, nonselective
	3320	β-Blockers, cardioselective
	3330	α-β–Blockers
Calcium channel blockers	3400	Calcium channel blockers
ACE Inhibitors	3610	ACE Inhibitors
ARBs	3615	ARBs
Diuretics	3710	Carbonic anhydrase inhibitors
	3720	Loop diuretics
	3740	Osmotic diuretics
	3750	Potassium-sparing diuretics
	3760	Thiazides and thiazidelike diuretics
	3790	Diuretics, miscellaneous
	3799	Diuretic combinations
Other antihypertensives	3617	Direct renin inhibitors
	3625	Selective aldosterone receptor antagonists
	3630	Agents for pheochromocytoma
	3640	Vasodilators
	3660	Antihypertensives, miscellaneous
	3699	Antihypertensive combinations
Dyslipidemics		
Statins	3940	HMG-CoA reductase inhibitors
Other dyslipidemics	3910	Bile acid sequestrants
	3920	Fibric acid derivatives
	3930	Intestinal cholesterol absorption inhibitors
	3945	Nicotinic acid derivatives
	3950	Antihyperlipidemics, miscellaneous
	3999	Antihyperlipidemic combinations

Abbreviations: ACE, angiotensin-converting enzyme; ARB, angiotensin II receptor blocker; GPI 4, first 4 digits of the Generic Product Identifier code; HMG-CoA, 3-hydroxy-3-methylglutaryl–coenzyme A.

dyslipidemia emphasize lifestyle changes, including increased exercise, reduced caloric intake, and improved nutrition. These recommendations align with the American Heart Association and American Academy of Pediatrics general dietary recommendations and primary prevention guidelines.[23-27] Unfortunately, lifestyle and behavioral modifications frequently fail to produce substantial or sustained weight loss,[28] and, thus, guidelines also recommend early initiation of pharmacotherapy.[25] Despite these recommendations, the prevalence of pediatric antihypertensive, dyslipidemic, and oral antidiabetic medication use is not well documented. The objective of this study is to describe the current prevalence of and recent trends in the distribution of antihypertensive, antidiabetic, and dyslipidemia prescription medication use among an insured population of US children and adolescents.

METHODS

The prevalence rates among commercially insured children and adolescents aged 6 to 18 years in the United States were measured monthly from September 1, 2004, through June 30, 2007. The eligible study population and associated prescription drug use were derived from benefits eligibility and administrative prescription claims data sets managed by CVS Caremark, a prescription benefits manager. Prescription benefits managers provide health plans, self-insured employers, and other entities, herein referred to as "payers," with services to support the management and administration of prescription health benefits. In this role, CVS Caremark adjudicates retail and mail service prescription claims submitted by insured individuals and their beneficiaries. The sampling frame includes 93 health plans, 785 employers, and 243 other organizations that provided CVS Caremark pharmacy insurance throughout the study period. All eligible pediatric plan participants were identified for each month in the study period.

Prevalence rates measure the proportion of the population filling prescriptions for selected medications. For a given month, the prevalence rate was the number of age-eligible individuals with a prescription for a selected medication divided by the total age-eligible population. The total age-eligible population was defined as all individuals within the selected age group, with age calculated on the last date of the month and eligibility for prescription benefits at any point during the month. Prescription use was defined as a minimum of 15 days of available therapy in the month (calculated by a consecutive count of days' supply of medication dispensed from the fill date of the most recent prescription). Days' supply of medication was censored as of a plan participant's 19th birthday or the date that prescription benefit eligibility was discontinued.

All treatment prevalence rates were calculated per 1000 participants per month and were calculated overall and by age group (6-11, 12-15, and 16-18 years) for selected therapeutic classes (**Table 1**). Therapeutic classes were defined according to the Generic Product Identifier, a proprietary, hierarchical therapeutic classification scheme used to denote pharmaceutically equivalent drug products (Medi-Span; Wolters Kluwer Health, Indianapolis, Indiana). Generic Product Identifiers are 14-digit codes that define drug group, class, subclass, name, name extension, dosage form, and strength; the first 4 digits define group (digits 1 and 2) and drug class (digits 3 and 4). Prevalence rates are displayed monthly, with each month representing the average of the previous 3 months' prevalence rates.

The protocol was reviewed and approved by the Essex Institutional Review Board (Lebanon, New Jersey).

RESULTS

The study population size varied by month, ranging from approximately 5.3 million to 6 million individuals. Age and sex distributions were similar to the projected US Census proportions, with girls representing about 51% of the study group and children aged 6 to 11 years representing 44% compared with adolescents aged 12 to 15 years (32%) and

Table 2. Select Demographic Characteristics Over Time[a]

	Study Population			2006 Census Projected US Population
	January 1, 2005	January 1, 2006	January 1, 2007	
Age, y				
6-11	2 527 118 (45.7)	2 523 459 (44.0)	2 687 616 (44.3)	23 705 472 (44.4)
12-15	1 845 110 (33.3)	1 832 197 (32.0)	1 906 006 (31.5)	16 880 168 (31.6)
16-18	1 163 476 (21.0)	1 374 098 (24.0)	1 466 629 (24.2)	12 840 774 (24.0)
Sex				
Male	2 829 102 (51.1)	2 926 757 (51.1)	3 091 368 (51.0)	27 356 924 (51.2)
Female	2 706 602 (48.9)	2 802 997 (48.9)	2 968 883 (49.0)	26 069 490 (48.8)
US Census region				
West	1 173 250 (21.2)	1 180 946 (20.6)	1 169 295 (19.3)	12 797 890 (24.0)
Midwest	1 170 516 (21.1)	1 239 754 (21.6)	1 153 178 (19.0)	11 874 409 (22.2)
South	1 632 650 (29.5)	1 702 793 (29.7)	2 064 191 (34.1)	19 347 243 (36.2)
Northeast	1 033 697 (18.7)	1 043 660 (18.2)	1 012 455 (16.7)	9 406 872 (17.6)
Other	190 241 (3.4)	200 018 (3.5)	285 305 (4.7)	NA
Unknown	335 350 (6.1)	362 583 (6.3)	375 827 (6.2)	NA

Abbreviation: NA, not applicable.
[a] Data are given as the number (percentage) of participants.

16 to 18 years (24%). The relative proportion of each age and sex group varied slightly across the study period. As a result of the distribution of eligible CVS Caremark payers, the study population's geographic distribution differed from US Census projections (**Table 2**).

Overall, the use of any antihypertensive, dyslipidemic, insulin, or oral antidiabetic medication increased from 3.3 per 1000 youths in November 2004 to 3.8 per 1000 youths in June 2007, an increase of 15.2%. With an overall treatment prevalence of 0.2 per 1000 youths, dyslipidemia medication use was uncommon, and the treatment prevalence decreased in all age and sex groups (from 14% to 20%) except for among 16- to 18-year-old girls, whose use of dyslipidemics increased by 14%. Statin therapy represented approximately 56.9% of all dyslipidemia medication use, and prevalence of statin use decreased by 22.9% during the study period (**Table 3** and **Figure 1**).

As of June 30, 2007, treatment prevalence for oral antidiabetics was 0.5 per 1000 youths. Oral antidiabetic use was highest among 16- to 18-year-old girls (0.14 per 1000), a rate 214% higher than among 16- to 18-year-old boys. As the first-line pharmacologic option for patients with type 2 diabetes, metformin (biguanides class) dominated the oral antidiabetic treatment category, representing approximately 73% of pharmacotherapy; prevalence of metformin use increased by 24.9% during the study period. In selected subgroups, the use of medications from several other pharmacologic classes more than doubled, including sulfonylurea use among 6- to 11-year-old girls, α-glucosidase inhibitor and insulin-sensitizing agent use among 6- to 11-year-old boys, and α-glucosidase inhibitor use among 16- to 18-year-old boys (Table 3 and Figure 1).

Insulin treatment prevalence was 1.5 per 1000 youths and was highest among 16- to 18-year-old boys (2.2 per 1000), followed by 16- to 18-year-old girls and 12- to 15-year-old boys (each at 1.8 per 1000). Each age and sex group realized substantial increases in insulin use, with increases among 6- to 11-year-old girls, 6- to 11-year-old boys, and 16- to 18-year-old boys exceeding 15%. Approximately 30.5% of insulin users concomitantly used oral antidiabetic medication. From November 2004 to June 2007, insulin use alone increased by 14.8%, and insulin use in conjunction with oral antidiabetic use increased by 23.3%.

The prevalence of any antihypertensive medication use was 1.5 per 1000 youths. The highest treatment prevalence rate was noted for β-blockers (0.6 per 1000 youths), followed by angiotensin-converting enzyme (ACE) inhibitors (0.5 per 1000 youths), diuretics (0.3 per 1000 youths), calcium channel blockers (0.2 per 1000 youths), angiotensin II receptor blockers (ARBs), and, finally, other antihypertensive medications (0.06 per 1000 youths). The use of cardioselective and nonselective β-blockers was comparable (0.29 vs 0.27 per 1000 youths). Concomitant antihypertensive therapy use occurred in 11.2% of treated children and adolescents.

In all antihypertensive classes, treatment prevalence increased with age, and several varied by sex. Among 6- to 11-year-olds, overall treatment prevalence was 0.7 per 1000 among girls and 0.9 per 1000 among boys, increasing to approximately 1.5 per 1000 among 12- to 15-year-olds and then to 2.9 and 2.5 per 1000 among 16- to 18-year-old girls and boys, respectively. Among 6- to 11-year-olds, ACE inhibitors and β-blockers were the most frequently used medications; however, during the study period, ACE inhibitor use increased 27.7% and 25.2% for girls and boys, respectively, while β-blocker use increased only 3.0% and 7.0% in the same period. In general, girls had higher rates of β-blocker and diuretic use, whereas boys had higher rates of ACE inhibitor, ARB, and other antihypertensive medication use (Table 3 and **Figure 2**).

COMMENT

The increasing recognition of a pediatric obesity epidemic has focused attention on type 2 diabetes mellitus, primary hypertension, and dyslipidemia among chil-

Table 3. Treatment Prevalence as of April to June 2007 by Age, Sex, and Drug Class[a]

Condition or Drug Class	Girls			Boys			Total
	6-11 y	12-15 y	16-18 y	6-11 y	12-15 y	16-18 y	
Diabetes, overall	1.222	2.349	3.069	1.100	2.028	2.488	1.878
Insulin	1.100	1.695	1.824	0.997	1.789	2.150	1.497
Amylin analogues	0.000	0.003	0.005	0.000	0.003	0.002	0.002
Oral antidiabetics, overall	0.180	0.742	1.346	0.148	0.334	0.432	0.456
Incretin mimetic agents	0.000	0.008	0.019	0.000	0.001	0.001	0.004
Sulfonylureas	0.013	0.018	0.053	0.018	0.018	0.043	0.024
Antidiabetic amino acid derivatives	0.000	0.000	0.002	0.000	0.000	0.000	0.000
Biguanides	0.097	0.649	1.164	0.059	0.236	0.317	0.352
Meglitinide analogues	0.001	0.001	0.001	0.000	0.000	0.001	0.001
Antidiabetics, other	0.063	0.057	0.056	0.053	0.076	0.052	0.060
α-Glucosidase inhibitors	0.000	0.001	0.002	0.001	0.000	0.005	0.001
Dipeptidyl peptidase-4 inhibitors	0.000	0.001	0.004	0.000	0.000	0.004	0.001
Insulin-sensitizing agents	0.008	0.020	0.074	0.019	0.010	0.031	0.024
Antidiabetic combinations	0.002	0.007	0.027	0.004	0.006	0.020	0.009
Hypertension, overall	0.739	1.465	2.875	0.903	1.490	2.511	1.486
β-Blockers	0.290	0.615	1.188	0.325	0.612	0.920	0.586
β-Blockers, nonselective	0.131	0.320	0.582	0.145	0.309	0.328	0.271
β-Blockers, cardioselective	0.145	0.280	0.560	0.164	0.281	0.548	0.292
α-β–Blockers	0.015	0.017	0.051	0.016	0.024	0.045	0.025
Calcium channel blockers	0.090	0.171	0.349	0.119	0.167	0.357	0.186
ACE inhibitors	0.301	0.398	0.495	0.360	0.524	0.919	0.465
ARBs	0.016	0.047	0.079	0.034	0.066	0.163	0.059
Diuretics	0.136	0.334	0.886	0.170	0.210	0.321	0.300
Other antihypertensives	0.018	0.039	0.068	0.026	0.072	0.198	0.060
Dyslipidemia, overall	0.049	0.141	0.337	0.079	0.207	0.358	0.168
Statins, HMG-CoA reductase inhibitors	0.025	0.083	0.211	0.050	0.133	0.204	0.102
Other dyslipidemics	0.026	0.060	0.135	0.033	0.087	0.171	0.074
Total	1.967	3.801	5.876	2.031	3.615	5.064	3.756

Abbreviations: ACE, angiotensin-converting enzyme; ARB, angiotensin II receptor blocker; HMG-CoA, 3-hydroxy-3-methylglutaryl–coenzyme A.
[a] Data are given as the rate per 1000 participants.

dren and adolescents. Consensus treatment guidelines for these conditions recommend pharmaceuticals if lifestyle and behavioral modifications fail to achieve therapeutic goals, except among certain high-risk subgroups that warrant pharmacotherapy upon diagnosis. Yet, there is little information about the use of recommended pharmacotherapies. In our population of commercially insured children and adolescents, the treatment prevalence of prescription medications indicated for the management of hypertension and types 1 and 2 diabetes varied substantially by condition. However, antidiabetic and antihypertensive medication use increased markedly from November 2004 through June 2007, whereas the use of dyslipidemic medications decreased markedly during the same period. As expected, the oldest ages had the highest prevalence overall, yet the greatest rate of increase during this period was realized by 6- to 11-year-old children, with increases of 18.7% and 17.3% for girls and boys, respectively.

In 2001, the SEARCH for Diabetes in Youth Study, estimated type 1 diabetes prevalence (among 10- to 19-year-olds) at 2.3 per 1000 youths and type 2 diabetes prevalence at 0.4 per 1000 youths.[19] Insulin is the primary pharmacologic option for type 1 diabetes. For type 2 diabetes, the American Diabetes Association and European Association for the Study of Diabetes guidelines recommend metformin (included in Generic Product Identifier class 2725, biguanides) as the pharmacologic therapy to be initiated upon diagnosis, with adjunctive therapy (insulin, sulfonylurea, or thiazolidinedione) added within 3 months if adequate glycemic control is not achieved.[25] As of June 2007, the overall insulin prevalence rate was 1.5 per 1000 youths and the oral antidiabetic medication rate was 0.5 per 1000 youths, representing increases of 17.2% and 23.3%, respectively, since November 2004.

Although antidiabetic medication prescriptions are often written by pediatricians, in a survey of 199 pediatricians, Ditmyer et al[29(p917)] report that only 15.3% "believed they were well prepared and confident to treat and counsel" their patients with type 2 diabetes. Underdiagnosis and undertreatment of pediatric type 2 diabetes will lead to significant increases in disease complications and associated costs of care. As such, optimizing the use of antidiabetic pharmacotherapy has received significant focus in quality improvement initiatives such as HEDIS (Healthcare Effectiveness Data and Information Set) and pay-for-performance programs such as Bridges to Excellence.[30] We recommend enhancing efforts to educate primary care pediatricians regarding optimal patient screening, lifestyle and behavioral management, and the full range of pharmaceutical options available for treatment.

With the well-documented increase in overweight and obesity among children and adolescents, primary hypertension has also become a significant health issue.[31,32] Hy-

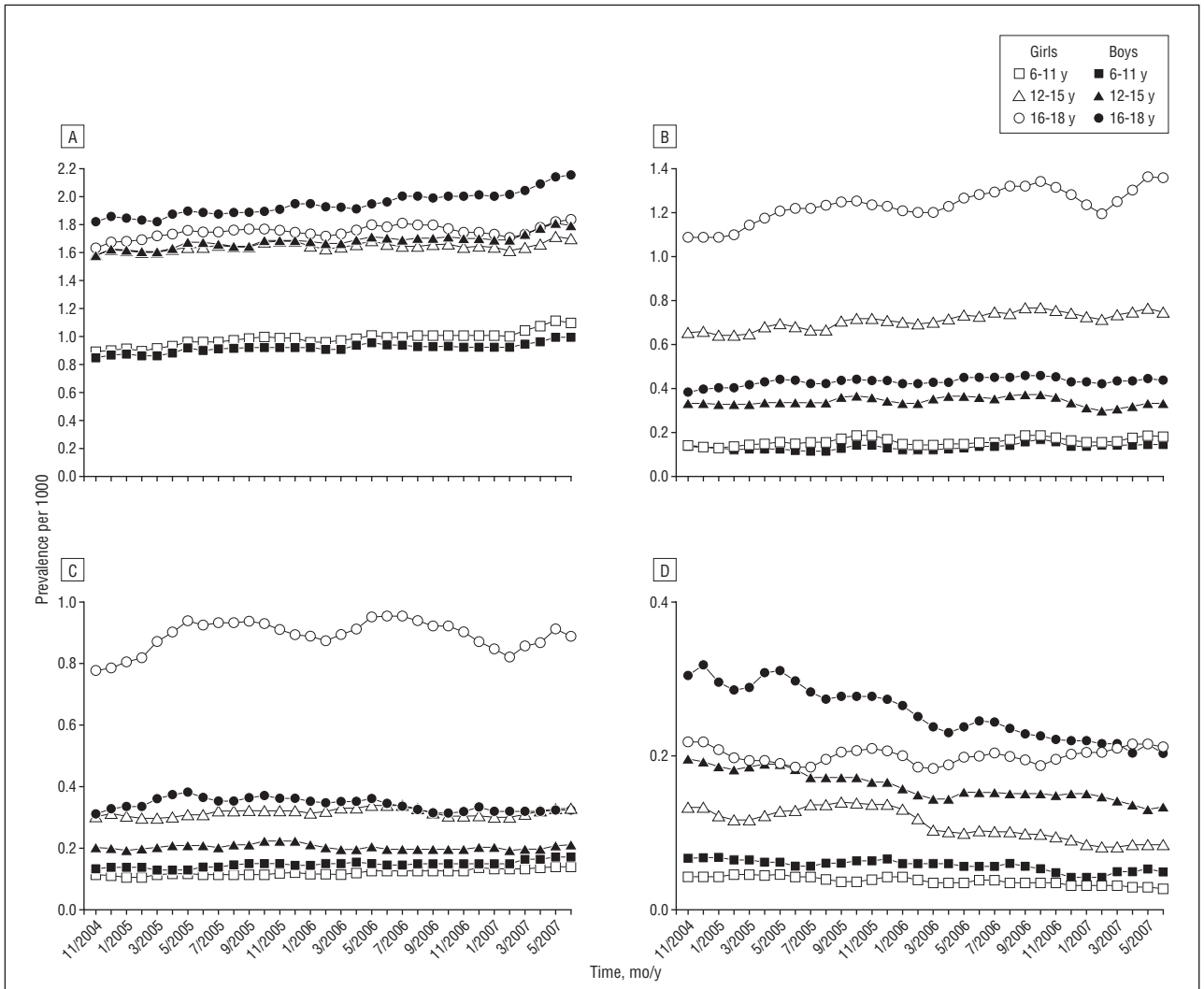

Figure 1. Prevalence of insulin (A), oral antidiabetic (B), diuretic (C), and statin (D) use from November 2004 to June 2007 by age and sex groups.

pertension is a common, often asymptomatic condition that affects between 2% to 5% of children and adolescents.[14,16] The current consensus treatment guidelines recommend lifestyle modification, including a healthier, lower calorie diet and regular exercise, for all children with hypertension or prehypertension. In addition, pharmacologic therapy is recommended for select children with hypertension or prehypertension, and recommendations vary by blood pressure level, persistence, etiology, and the presence of select comorbidities.[24] The guidelines recommend initiating monotherapy with medication from one of the following classes: ACE inhibitors, ARBs, β-blockers, calcium channel blockers, and diuretics.

Relative to the projected prevalence of hypertension,[14,16] we found a low rate of antihypertensive use (1.5 per 1000 youths or 0.15%). The most frequently prescribed classes were β-blockers and ACE inhibitors, whereas ARB use remained relatively infrequent. However, during the study period, antihypertensive use increased by 15.3% overall, with the greatest increases noted for ACE inhibitors (24.7%) and diuretics (21.6%). Also, in accordance with treatment recommendations, we found low rates of concomitant therapy or antihypertensive combination use. The most dramatic rates of increases were noted among the 6- to 11-year-old population, regardless of sex, with treatment prevalence rates increasing by more than 20% for β-blockers, calcium channel blockers, ACE inhibitors, ARBs, and diuretics. Although overall treatment rates remain low relative to projected disease prevalence, the substantial increase in treatment prevalence may reflect an increasing awareness of existing hypertension in children and adolescents (a correction for underdiagnosis and undertreatment suggested by recent studies) rather than a response to an overall increase in pediatric hypertension.[33] Despite the well-documented relationship between excessive weight and hypertension, a recent meta-analysis by Chiolero et al[34(p550)] concludes that available data "do not support the hypothesis that the worldwide epidemic of overweight in children has resulted in a commensurate increase in BP [blood pressure] levels in children."

With high triglyceride levels and low high-density lipoprotein cholesterol levels occurring in 23.4% and 23.3%

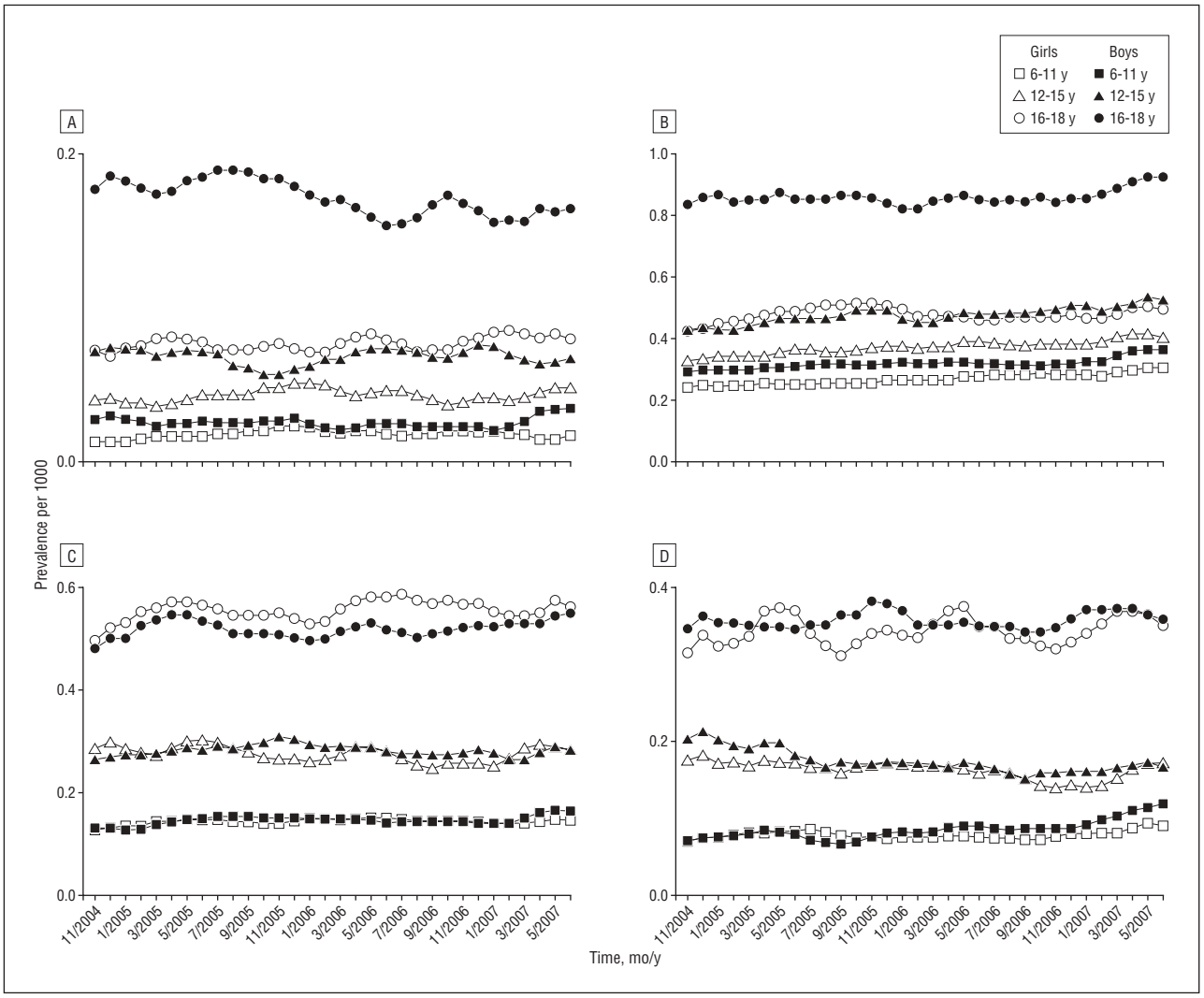

Figure 2. Prevalence of angiotensin II receptor blocker (A), angiotensin-converting enzyme inhibitor (B), cardioselective β-blocker (C), and calcium channel blocker (D) use from November 2004 to June 2007 by age and sex groups.

of adolescents in the United States, dyslipidemia is extremely common[20] and is strongly associated with atherosclerotic processes.[12] Yet, the US Preventive Services Task Force concludes there is insufficient evidence to recommend for or against screening for lipid disorders in anyone younger than 20 years of age,[35] whereas the American Heart Association, American Academy of Pediatrics, American College of Obstetricians and Gynecologists, and the National Cholesterol Education Program report on Expert Panel of Cholesterol Levels in Children and Adolescents recommend selective screening of high-risk populations,[36] and the American Diabetes Association recommends biannual screening beginning at diagnosis for patients with type 2 diabetes and beginning at age 10 years for patients with type 1 diabetes.[37,38] National Cholesterol Education Program guidelines, developed in 1992, recommend initiating pharmacotherapy with bile acid sequestrants, whereas more recent recommendations incorporate statin therapy, with selective use of fibric acid derivates and cholesterol absorption inhibitors.[26,28,37,39] In our study, statins were the most common preferred treatment, representing 63% of all pharmacotherapy. However, statin use decreased, whereas use of other dyslipidemic treatments increased. Although several statin drugs have pediatric labeling from the Food and Drug Administration, their use in this population remains controversial, and concerns have been raised about adverse effects and the unknown effects of long-term use.[40] The decreasing treatment rate may also be the result of 2 highly publicized Food and Drug Administration warnings regarding rhabdomyolysis, a rare but potentially fatal adverse effect of statin use.[41]

The most compelling aspect of this analysis is the study population, which represents nearly 11% of the projected US population in these age groups. Based on 2000 US Census data, we project that 175 710 children and adolescents aged 6 to 18 years are actively being treated with an antidiabetic, antihypertensive, or dyslipidemic medication as of June 2007. After accounting for concomitant therapy, which occurs in 4.3% of this population, we project that 78 361 are being treated with insulin, 23 358 with oral antidiabetic medication, and 79 055 with antihypertensive medication (30 276 with β-blockers and 24 350 with ACE inhibitors). In

comparison, a projected 150 000 children and adolescents in the United States have diabetes mellitus,[19] and 1.1 to 2.6 million children have elevated blood pressure (derived from the 2% to 5% prevalence estimate[14,16] applied to the estimated 53.2 million children and adolescents aged 6 to 18 years from the 2000 US Census). Furthermore, according to the Third National Health and Nutrition Examination Survey estimates of triglyceride and high-density lipoprotein cholesterol levels,[20] more than 7 million adolescents aged 12 to 19 years may have dyslipidemia.

The study limitations relate primarily to the sampling frame and data source. First, the study sample is drawn from a predominantly commercially insured population, and, thus, generalizing from these results must be based on the assumption of equal access to and use of these pharmacotherapies among underinsured and uninsured children and adolescents. Second, in the absence of a definitive diagnosis and insight into specific treatment regimens as well as prescriber intent, we are left to speculate on the conditions being treated. Finally, in the absence of prescriber intent and patient characteristics, we are also left to speculate on the cause of the changing treatment patterns over time. Given this, we believe that future investigations should focus on patient adherence to therapy and pharmacovigilance and address prescriber screening and diagnostic practices, health care provider proficiency in the treatment of chronic cardiovascular disease, and interventions to achieve therapeutic goals.

CONCLUSIONS

The increasing use of oral antidiabetic and antihypertensive pharmacotherapy in pediatric populations, especially among a younger age group, indicates either an increased awareness of treatment needs or increased incidence of cardiovascular risk factors typically associated with adult populations. The decreasing rate of treatment for dyslipidemia may reflect the ongoing controversy regarding statin use.

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Correction

Error in byline. In the article titled "Incidence of Noninfectious Conditions in Perinatally HIV-Infected Children and Adolescents in The HAART Era" by Nachman et al published in the February issue of the *Archives* (2009; 163:164-171), the incorrect academic degrees were listed for authors Miriam Chernoff and Philimon Gona. Both authors hold a PhD degree, not an MD.