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GAO

Report to Congressional Requesters

September 2001

ATTENTION DISORDER DRUGS

Few Incidents of Diversion or Abuse Identified by Schools

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Abbreviations

ADHD	Attention Deficit Hyperactivity Disorder
CCD	Common Core of Data
DEA	Drug Enforcement Administration
FDA	Food and Drug Administration

GAO
Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

September 14, 2001

The Honorable F. James Sensenbrenner
Chairman
The Honorable Henry Hyde
Committee on the Judiciary
House of Representatives

Children diagnosed with attention deficit disorders are commonly treated with stimulant medications, such as Ritalin or Adderall. These drugs are controlled substances under federal law because of their high abuse potential. Many of these stimulant drugs must be taken several times a day to be effective, so that children need medication during the school day. There is some concern that the increase in the use of these medications in a school environment might provide additional opportunities for the diversion or abuse of these drugs. There is no data on the extent to which attention disorder drugs have been diverted or abused at school, or the extent to which state laws or regulations guide local school officials in safely administering these drugs. To clarify these issues, you asked us to provide you with information and analysis on (1) the diversion and abuse of attention deficit disorder drugs in public schools,[1] (2) the school environment in which drugs are administered to students, and (3) the state laws or regulations addressing the administration of prescription drugs in schools.

To address the first two objectives, we surveyed principals from a representative national sample of public middle schools and high schools. Elementary schools were not included based on discussion with your staff. For the third objective, we surveyed state Department of Education officials (or their designees) in the 50 states and the District of Columbia. Specific information on our objectives, scope, and methodology is provided in appendix I, and copies of our survey instruments are presented in appendixes II and III.

[1] For this report, "diversion or abuse" includes any instances in which the drug was stolen, illegally sold, given away, or traded; possessed or ingested without a prescription; or otherwise involved outside of sanctioned uses.

Results in Brief

Middle and high school principals we surveyed reported little diversion or abuse of attention disorder drugs. For the first 7 to 9 months of school year 2000-2001, approximately 8 percent of principals in public middle and high schools reported knowing of attention disorder drugs being diverted or abused at their school. Most of those principals reported knowing of only one incident. Approximately 89 percent of the principals reported that at their school, the diversion or abuse of attention disorder drugs was less of a problem than other illicit drugs (excluding problems with alcohol and marijuana). We were unable to draw any statistical conclusions about associations between the reporting of incidents and other school characteristics, such as if it was a middle or high school, due to the low number of incidents overall.

Most of the principals reported that school officials administer attention disorder medications, with about 2 percent of the school's students on average being administered attention disorder drugs on a typical day. Medications are administered by nurses in about 60 percent of the schools, and by non-health professionals, such as secretaries in most of the remaining schools. Medications are kept locked in almost all (96 percent) of the schools according to the principals, and students are observed while taking their medications. We could not draw any statistical conclusions relating incidents to who administers the medications, the number of children on attention disorder medications, variations in storage, or medication transportation due to the low number of incidents overall.

Thirty-seven states and the District of Columbia have either statutes, regulations, and/or mandatory policies addressing the administration of medication to students, based on our survey of state Department of Education officials. State provisions include, for example, that schools obtain written parental authorization to administer medication, ensure that the medication is securely stored, and require prescription medication to be stored in the original pharmacy container. Almost 90 percent of principals reported their school received state and/or local guidance regarding the administration of medications.

Background

Attention deficit disorders are among the most commonly diagnosed childhood behavioral disorders. Although there are a number of disorder subtypes, as a group these disorders are referred to as Attention Deficit Hyperactivity Disorder (ADHD). Symptoms include hyperactivity, impulsiveness, and inattention. The American Psychiatric Association's

diagnostic manual[2] provides criteria for identifying ADHD; however, there is no agreed upon test to confirm an attention disorder. Estimates of the prevalence of the disorder vary widely. A recent international review of 19 epidemiological studies conducted in various countries since 1980 on the prevalence of ADHD in school-age children reported ranges of 2 percent to 18 percent. The review found that the ADHD prevalence rate varies depending on the diagnostic criteria, the children included in the sample, and how the data were collected. Researchers conducting the review concluded with a "best" estimate of between 5 and 10 percent of children and adolescents having some form of this disorder.[3]

Although controversial, stimulants are the most common treatment for attention disorder symptoms and are the only drugs that are approved by the Food and Drug Administration (FDA) for this purpose. Methylphenidate is the most widely used stimulant, but amphetamines have been increasingly prescribed. Antidepressants, including buproprion and velafaxine, are not approved by the FDA for the treatment of ADHD; however, they are sometimes prescribed by physicians for ADHD if stimulant medications are ineffective or inappropriate for a particular patient.

ADHD drugs come in generic forms, but are often referred to by their brand names. Methylphenidate brand names include Ritalin (see fig. 1), Concerta, Methylin and Metadate. Brand name amphetamines include Adderall, Dexedrine, and Dextrostat. Both types of stimulants are available in quick acting, but short duration (2 to 6 hours) tablets. Recently, sustained or extended release tablets lasting 8 to 12 hours have become available, and a once-a-day skin patch is under development. Longer acting drugs may reduce the need for some children to take their medications at school. Several companies are testing nonstimulant drugs for ADHD treatment that do not have the potential for abuse or physical dependency associated with stimulant drugs.[4]

[2] Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR, 4th edition, 2000. Diagnosis consists of a combination of symptoms, such as "often does not seem to listen when spoken to directly," or "often fidgets with hands or feet or squirms in seat."

[3] Larry Scahill, MSN, PhD and Mary Schwab-Stone, MD, Epidemiology of ADHD in School-Age Children, Child and Adolescent Psychiatric Clinics of North America, Vol. 9(3), (July 2000).

[4] Nonstimulant drugs under development and their manufacturers include Atomoxetine (Lilly), GW 320659 (GlaxoSmith Kline), Perceptin (Gilatech).

Figure 1: Brand Name Methylphenidate Pills

Source: Internet.

Methylphenidate and amphetamines are classified under the federal Controlled Substances Act as Schedule II drugs—those with a high potential for abuse and severe psychological or physical dependence if abused.[5] A 1995 Drug Enforcement Administration (DEA) review of methylphenidate concluded that based on studies of laboratory animals and humans, methylphenidate was similar in pharmacological effects to cocaine and amphetamines.[6] The DEA establishes annual production quotas for Schedule II drugs by analyzing data on past sales, inventories, market trends, and anticipated need.[7]

The production quotas for methylphenidate and amphetamines have risen considerably since 1990. (See table 1.) A number of factors have contributed to the increase in the quotas, according to researchers.[8] Key

[5] *See* 21 U.S.C. 812(b)(2); 21 C.F.R. 1308.12(d)(1), (4).

[6] Drug Enforcement Administration, Drug and Chemical Evaluation Section, *Methylphenidate Review Document* (Revised October 1995).

[7] *Controlled Substance Quotas* (GAO/GGD-95-52R, Jan. 18, 1995).

[8] Daniel J. Safer, Departments of Psychiatry and Pediatrics, John Hopkins University School of Medicine, and Julie Magno Zito, Department of Pharmacy Practice and Science, University of Maryland School of Pharmacy. "Pharmacoepidemiology of Methylphenidate and Other Stimulants for the Treatment of Attention Deficit Hyperactivity Disorder" in *Ritalin, Theory and Practice*, 2nd Edition. M.A. Liebert Publishers, 2000.

factors include (1) the number of people diagnosed as having ADHD has grown with an expansion in the criteria used to diagnose ADHD; (2) longer periods of treatment for the disorder; (3) more girls are receiving medication than in prior years; and (4) a greater public acceptance of psychopharmacologic treatment of youth. According to data obtained by DEA, about 80 percent of the prescriptions for amphetamines and methylphenidate were to treat children with ADHD.

Table 1:Rise in Production Quota for Methylphenidate and Amphetamine

	1990 DEA production quota in kilograms	2000 DEA production quota in kilograms
Methylphenidate (percent increase)	1,768	14,957 (746)
Amphetamine (percent increase)	417	9,007 (2060)

Source: DEA.

Along with the increase in the use of stimulant medications have come concerns that these drugs may be being diverted from their prescribed use, or otherwise abused. School settings are perceived as particularly vulnerable for abuse because schools store attention disorder drugs for students needing medication while at school. DEA interviews in 1997 with schools officials in three states indicated that schools might leave medications in unsecured locations, such as teachers' desks, making theft possible. A number of anecdotal news accounts of students abusing these drugs at school have heightened concerns. (See app. IV.) However, no studies are available to document the degree to which these medications are diverted at school. There is some evidence from a small number of studies and national data that abuse of these drugs does occur. (See app. V.) For example, the University of Michigan has surveyed a national sample of public and private 8th, 10th, and 12th grade students since 1991. Of 12th graders surveyed in 2000, 2 percent reported using Ritalin without a prescription in the past year. The University of Michigan survey does not specify where drug use occurred.

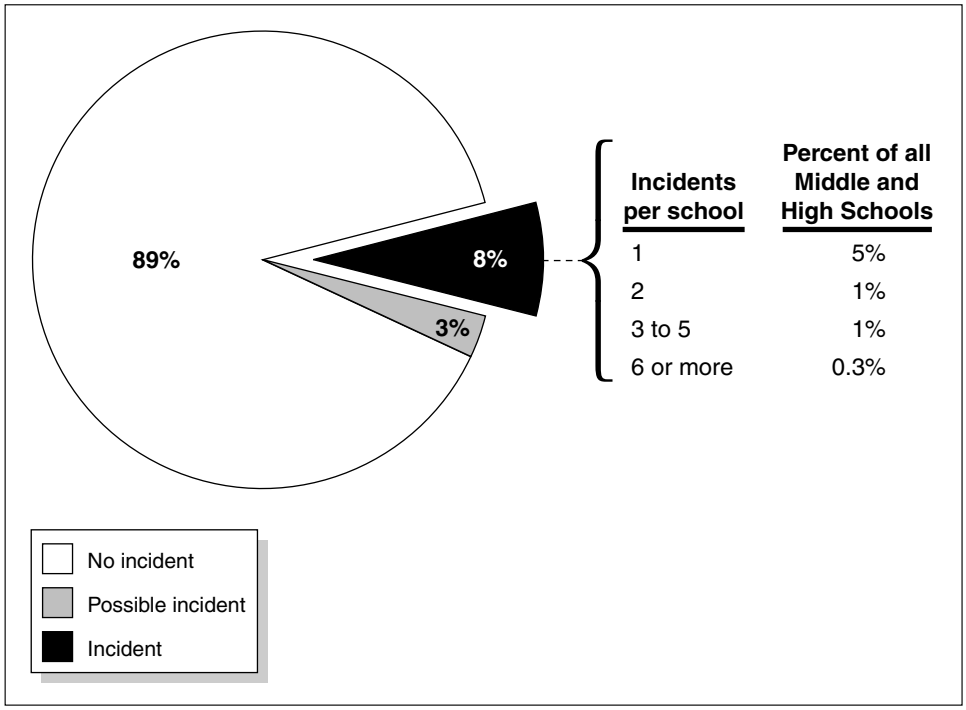
Few Incidents of Diversion or Abuse of Attention Disorder Drugs Identified by Schools

Based on our survey, an estimated 8 percent[9] of principals in public middle schools and high schools in the United States reported at least one incident of diversion or abuse of attention disorder drugs during the current 2000-2001 school year. (See fig. 2.) Most of those principals reported knowing of only one incident at their school.[10] An additional 3 percent of school principals reported at least one possible incident, but were uncertain of the drugs involved.

[9] The results presented here are estimates based on a random sample of middle and high school principals. This sample is only one of a large number of possible samples that could have been drawn. Since each sample could have produced different estimates, we present the estimate with a confidence interval (an upper and lower bound). Unless noted, the 95-percent confidence interval for survey estimates is within +/-10 percent. This means that for the principal survey percentages presented in this report, we are 95-percent confident that the results we would have obtained if we had contacted all middle and high school principals (rather than a sample) are within +/- 10 or fewer percentage points of our results.

[10] The 95-percent confidence interval for incidents per school is within +/-16 percent.

Figure 2: Percent of Middle and High Schools Identifying Diversion or Abuse of Attention Disorder Drugs in the 2000–2001 School Year



Source: GAO survey.

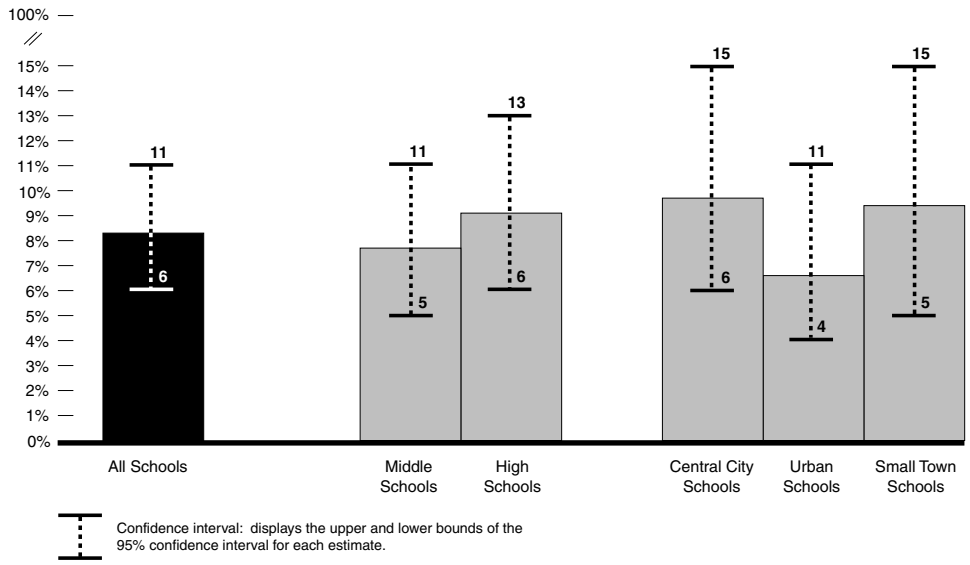
Of the 8 percent reporting an incident of diversion or abuse in the current school year, only methylphenidate was involved at 73 percent of the schools, and only amphetamines were involved at 20 percent of the schools.[11] In the remaining cases, the specific drug could not be determined or both drugs were involved. Using the U.S. Department of Education designations for community, we classified schools as being located in central cities, urban communities, or small towns.[12] We compared incident rates by school and community type. (See fig. 3.) Due to the low number of incidents overall, we were unable to draw any

[11] The 95-percent confidence interval for the type of drug involved in the incident is within +/- 16 percent.

[12] Central city communities include central cities of Metropolitan Statistical Areas or central cities in Consolidated Metropolitan Statistical Areas; urban communities include those located on the urban fringe of large- or mid-sized cities or large towns; small towns include small towns and rural areas. (See Scope and Methodology in app. I.)

statistical conclusions about possible association between these factors and the incidence rate.

Figure 3: Diversion or Abuse of Attention Disorder Drugs at Middle and High Schools and by Community Type



Source: GAO survey.

Principals reporting any incident at their school were asked to briefly describe the incident for which they had the most information. A content analysis of the 51 incidents described by our sample respondents showed that in 38 cases the student gave or sold pills to other students. For example, "*Student brought Adderall to school and attempted to sell it to other students.*" A second type of incident (4 cases) involved pills being stolen from other students or the school. The remaining incident descriptions were varied, such as "*In all (6) cases, a pill was found outside the entrance to the main building. We aren't sure if it is a student taking the medication at school or bringing it from home and dropping it outside.*"

The students involved in the estimated 8 percent of schools with reported diversion or abuse incidents were most often expelled or suspended from school as a consequence of the incident, according to principals. Other measures taken by schools in response to the incident are shown in table 2. An estimated 42 percent of the principals that were aware of an incident did not call police regarding the drug diversion or abuse incident.

Consequently, measures of attention disorder diversion or abuse based on official police records may underreport actual occurrences.

Table 2:Measures Taken by School Officials as a Consequence of Diversion or Abuse of Attention Disorder Drugs

Measure taken	Percent of schools[a]
Student was expelled or suspended	78
Police were called	58
Student was counseled	54
Other measures were taken[b]	41
School policies or procedures were changed	0
No measures were taken	0

[a]The 95-percent confidence interval for percent of schools taking specific measures is within +/-16 percent.

[b]Other measures included discussions with parents, transfer to an alternative school, or involving youth services.

Source: GAO survey.

Most principals did not perceive the diversion or abuse of prescribed attention disorder drugs to be a major problem at their school. An estimated 89 percent reported that it was less of a problem than other illicit drug use, excluding alcohol and marijuana. In general, illicit drug use (excluding alcohol and marijuana) was reported to be not a problem at all or a minor problem by approximately 78 percent of the principals. In addition, the most frequent comments voluntarily written by principals were comments regarding the lack of an ADHD medication abuse problem at their school. For example, one principal stated that "*I feel comfortable in stating that there is 'NO DIVERSION' of medication that is administered through the office/clinic.*" We compared incident rates by the principal's assessment of the problem, but were unable to draw any statistical conclusions about a possible association due to the low number of incidents overall.

Most Schools Dispense Attention Disorder Medications and Follow Drug Security Procedures

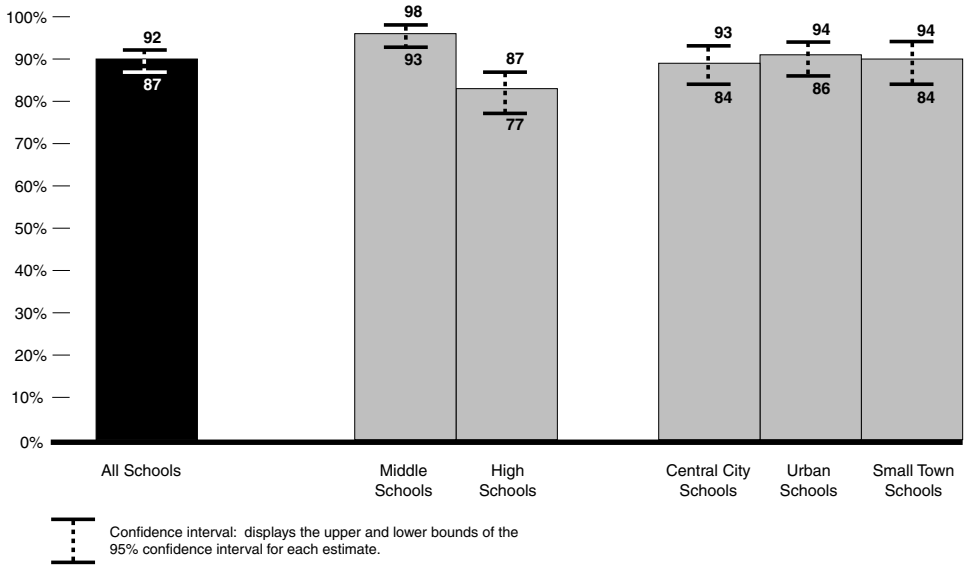
Most school officials reported that attention disorder medications are administered to students during the school day, most often by a nurse. However, only a small fraction (less than 2 percent[13]) of a school's students were reported to receive these drugs. Most schools reported that drugs were stored in locked cabinets or rooms, and that students are observed when they take their medications.

Medication Administration

Nationally, an estimated 90 percent of schools have school staff administering attention disorder medication to some students on a typical day, according to principals we surveyed. Schools that do not typically administer these drugs may have policies that prohibit dispensing medication, or do not have students currently requiring attention disorder medication during school hours. As shown in figure 4 estimates, statistically more middle school officials (96 percent) administered ADHD medications than did high school officials (83 percent). However, incident estimates by community type were not statistically different.

[13] The estimated fraction of students that receive these drugs is 1.7 percent and is surrounded by a 95-percent confidence interval extending from 1.5 percent to 1.9 percent.

Figure 4: Percent of Schools Where School Staff Administer Medication by Middle and High Schools and by Community Type



Source: GAO survey.

While 90 percent of principals in our study population reported that their schools administer attention disorder medications, a relatively small fraction of students attending these schools were administered attention disorder medications while at school. An estimated 1.1 percent[14] of students (in schools where drugs are administered) were dispensed methylphenidate and an estimated 0.5 percent[15] of students were administered amphetamines, for an overall rate of almost 2 percent.

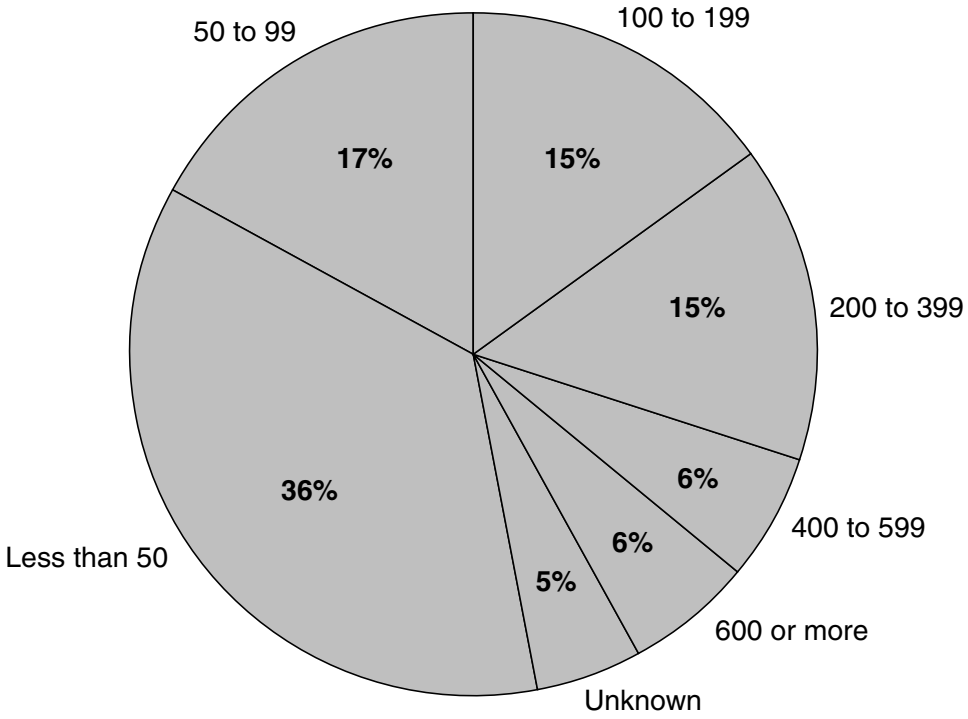
A DEA drug diversion official expressed concern during recent congressional testimony[16] with the volume of methylphenidate on hand at school for student daytime dosing. Our survey found that 6 percent of schools stored 600 pills or more, while over half of the schools stored 100 pills or less. (See fig. 5.)

[14] The 95-percent confidence interval for this estimate extends from 1.0 to 1.3 percent.

[15] The 95-percent confidence interval for this estimate extends from 0.47 to 0.59 percent.

[16] Terrance Woodworth, Deputy Director, Office of Diversion Control, DEA, before the House Committee on Education and the Workforce, Subcommittee on Early Childhood, Youth and Families (May 15, 2000).

Figure 5: Number of Attention Disorder Pills Typically on Hand for Dispensing at School



Source: GAO survey.

At schools that dispense attention disorder medications, the personnel approved to administer medications varied among schools. Nurses were reported to most often carry out that task, and second to nurses, nonhealthcare professionals, such as secretaries, most often dispense medications. (See table 3.) Lack of a nurse or other trained healthcare professional was noted as a concern by several principals. Of the 107 optional comments written by principals in our survey, 13 comments were about the need for nurses to administer medication to students. For example, one wrote, "*School districts should be forced to provide full-time nursing services so that only medically-trained personnel can distribute medication.*"

Table 3: School Personnel Dispensing Attention Disorder Medication

Personnel	Percent approved to administer attention disorder medication[a]	Percent most often administering attention disorder medications[b]
Nurse	75	59
Other healthcare professional	13	7
Principal	32	2
Teacher	12	2
Other nonhealthcare professional	51	28
Students self-administer	6	1

[a]The column total does not equal 100 percent because more than one person can be approved to dispense medication.

[b]The column total does not equal 100 percent because of rounding.

For nonhealthcare professionals administering attention disorder medications, all but 5 percent of school officials reported some kind of training was provided to prepare staff for their duties. Principals reported multiple forms of training for staff. Training was provided by written instruction at 41 percent of schools, by healthcare professionals in about 49 percent of the schools, by oral instruction at 49 percent of schools, and 9 percent were provided video instruction.

Medication Security

Most school principals reported that ADHD medications are kept in locked spaces. Approximately 72 percent of the schools that dispense attention disorder medications store the drugs in a locked cabinet and a locked office or room. Examples of this type of storage are shown for schools "A" and "B" in figure 6. An additional 24 percent of schools kept medications in either a locked cabinet or a locked office or room. Some school principals noted that during nonschool hours medication security was tighter, such as locking the room in which medication was stored in addition to a locked cabinet, or using a vault. Of those reporting that medications were kept locked, the average number of people with access was three people, and at most schools (93 percent) fewer than six persons have access to the medications. Because most schools secure attention disorder medications in locked storage, and the low overall rate of diversion or abuse, we were unable to draw statistical conclusions about any possible association between number of incidents, medication security, or security and school type.

Figure 6: Storage of ADHD and Other Medications

Medication in cabinet at school A

Cabinet and door locks at school A

Medication in cabinet at school B

Cabinet and door locks school B

Source: GAO.

Almost all (96 percent) of the school principals in schools that administer medications reported that students are observed when they are administered medication to assure that it is taken.

Of the 90 percent of schools that administer attention disorder medications, about 48 percent have parents only transporting student medications from home to school. Another 34 percent of schools allow either parents or students to transport medications and 12 percent had students transporting their own medications. Among those schools that have students transporting their own medications, several principals commented that controls were in place to assure that none of the medication was diverted from home to school. For example, one principal reported that the medication bottle must be taped closed with the number of pills inside indicated on the bottle and accompanied by a note signed by the parent. We compared incident rates by how the medications were transported to school, but were unable to draw any statistical conclusions due to the low number of incidents overall and the distribution of responses.

Many States and Local School Districts Have Provisions for School Administration of Medications

Many states in the United States have statutes, regulations, and/or mandatory policies regarding the administration of medication at schools. At the local level, most of the principals in our survey of middle and high schools reported having school district provisions regarding the administration of medication.

Many States Have Established Requirements for the Administration of Medication

From our survey of state education officials (see app. III), we determined that 37 states and the District of Columbia have statutes, regulations, and/or mandatory policies addressing medication administration at schools, as shown in appendix VI.[17] The remaining 13 states do not, as discussed in the following sections.

Of the 37 states with applicable provisions, 29 require or authorize schools to adopt medication administration policies; in most of these states, schools issuing policies for the administration of medication must incorporate minimum statewide requirements. The other eight states and

[17] Two states, Oregon and Ohio, did not respond to the survey, and we researched these states' statutes and regulations as reported in the Lexis and Westlaw databases.

the District of Columbia do not expressly delegate authority to local schools, but provide for the regulation of medication administration in schools based on statewide or districtwide requirements.

We analyzed provisions in the 37 states and the District of Columbia based on five common statewide requirements for administering medication at schools: (1) whether schools must obtain authorization from the student's parent or guardian to administer medication, (2) whether schools must obtain written orders or instructions from the student's physician or other licensed medication prescriber to administer medication, (3) whether schools must receive and store prescription medication in an original container with proper pharmaceutical labeling, (4) whether schools must provide storage for medication that is secure and inaccessible except to authorized school personnel, and (5) whether schools must document the administration of medication to the student in a medication log.

Although these five categories represent the more common statewide requirements, they do not represent the full array of state requirements that regulate the administration of medication in schools. For example, Maine and New Jersey have minimum state requirements for school medication administration policies, but not in one of the five categories reflected in appendix VI. Maine requires that all unlicensed personnel receive training before administering medication, while New Jersey prohibits anyone other than a doctor, nurse, or parent from administering medication in a non-emergency situation.[18] Other states limit the amount of medication that schools may store; require parents or guardians to deliver medications to schools; establish procedures for returning and/or destroying any unused medications; and establish safeguards specific to self-administration of medications by students.

From our review, we found that 28 states and the District of Columbia require that schools obtain authorization from the student's parent or guardian before administering medication. Virtually all of these jurisdictions specifically require written authorization. In addition, 19 states and the District of Columbia require that schools obtain orders or instructions from the student's physician or other licensed medication prescriber before administering medication. In most of these jurisdictions, the requirement for a medication order is met if the prescriber provides specific instructions for administration (e.g., the name, route, and dosage of the medication and the frequency and time of the administration).

[18] See 20-A Me. Rev. Stat. Ann., sec. 254, subsec. 5; N.J. Admin. Code 6A:16-2.3(b)(1).

However, in two states, Utah and Washington, schools must also obtain a written statement from the prescriber that administering medication at school is medically necessary or advisable.[19] Finally, 22 states and the District of Columbia require schools to obtain prescription medication in an original container with proper pharmaceutical labeling.[20]

Eighteen states specify the manner in which schools must store medication to ensure its security.[21] These states vary in terms of the level of security required. States such as Indiana, Iowa, and Oklahoma simply require a secure or inaccessible location to store medication.[22] However, most states specify locked storage for medication and a few impose more stringent security measures. For example, Massachusetts requires schools to store prescription medications in a securely locked cabinet, which is substantially constructed and anchored to a solid surface, with access to keys restricted.[23]

Sixteen states require schools to document the administration of medication to the student in a medication log or other like-named record.[24] Documentation requirements vary between these states. Although some of the states do not specify the content or format of the medication log, many

[19] *See* Utah Code Ann. 53A-11-601(1)(b)(ii); Rev. Code. Wash. 28A.210.260.

[20] In appendix VI, we express the requirement in these 22 states and the District of Columbia as a requirement for a "pharmacy container." However, not all states, nor the District, use this terminology. Some require schools to obtain medication that is properly labeled and/or in its original container. In the case of prescription medications, we interpreted such laws as essentially requiring a pharmacy container.

[21] Some states (*e.g.*, Oregon, Utah, Wisconsin, and Wyoming) require schools adopting medication administration policies to address the safe storage of medication, but do not specify any minimum requirements that the schools' policies must incorporate. *See* Or. Admin. Rules, 581-021-0037(4)(a); Utah Code Ann. 53A-11-601(1)(a)(ii); Rev. Code. Wash. 28A.210.260(1); Wyo. Admin. Code, Educ., ch. 6, sec. 17(a)(i)(F). We did not regard these states as imposing secured storage requirements, in contrast with the 18 states that do specify minimum requirements that schools must observe in storing medication.

[22] *See* 511 Ind. Admin. Code 7-21-8(a)(4); 281 Iowa Admin. Code 41.12(11)(h); 70 Okla. Stat. Ann. 1-116.2(D).

[23] *See* 105 Code of Mass. Reg. 210.008(C), (D).

[24] Colorado, the District of Columbia, New Mexico, and Wisconsin require "record keeping" or "documentation," but do not specifically state that schools must maintain records of administering medication to students. *See* Colo. Dept. of Reg. Agencies, ch. XIII, sec. 7.5; D.C. Code 31-2434(a)(4); 6 N.M. Admin. Code 4.2.3.1.11.3.2 (e); Wis. Stat. 118.29(4). Absent such specificity, we did not treat these jurisdictions as requiring medication logs, in contrast with the 16 states discussed above.

require, at a minimum, that the log reflect the date, time, and dosage of the medication given to the student, and the name or signature of the person administering the medication. A few states impose additional documentation requirements. For example, along with other states, Connecticut requires schools to document any skipped dose and the reason for it; Maryland requires scheduled pill counts for controlled substances and reconciliation against the medication log; and Massachusetts requires schools to document the return of any unused medication to the student's parents.[25]

From our survey responses, we found that 13 states do not have applicable statutes, regulations, or mandatory policies addressing the administration of medication in schools, as reflected in appendix VI. Although 5 of the 13 states (Idaho, Kansas, Missouri, Montana, and New York) identified provisions in their survey responses, the cited provisions cover areas that are not directly within the scope of our inquiry and are not included in appendix VI. For example, Missouri and New York have statutes addressing when a student with asthmatic conditions may carry and use a prescribed inhaler at school.[26] Thus, appendix VI does not include every provision cited by a survey respondent, only those provisions relevant to our work.

Finally, during our survey, 22 states and the District of Columbia reported that they have policy guidelines addressing the administration of medication in schools.[27] The policies in these jurisdictions are discretionary and do not create legal requirements for administering medication in schools, as do the statutes, regulations, and mandatory policies reflected in appendix VI. Nevertheless, the discretionary policies often contain detailed recommendations to assist schools adopting medication administration policies. The discretionary policies cover the same broad range of medication administration procedures reflected in the various state statutes, regulations, and mandatory policies. Only seven

[25] *See* Regs., Conn. State Agencies 10-212a-6(a)(1)(K); 105 Code of Mass. Reg. 210.008(G). Maryland's requirements appear in a mandatory policy jointly issued by state administrative agencies.

[26] *See* Mo. Rev. Stat. 167.627; N.Y. Cons. Law Serv., Educ., sec. 916.

[27] The states are Alabama, Arkansas, California, Delaware, Florida, Illinois, Iowa, Kentucky, Louisiana, Michigan, Missouri, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, South Dakota, Vermont, Virginia, Washington, and Wisconsin.

states have no applicable statutes, regulations, or policies (discretionary or mandatory) addressing the administration of medication in schools.[28]

Many School Districts Have Established Local Procedures

Lack of a state policy on the administration of medication does not prevent schools in a state from developing their own provisions, and most have. According to responses in our survey of school principals, 90 percent of schools have received district regulations or policies regarding the administration of prescription medications. For example, South Carolina officials reported that the state has no statutes, regulations, or policies in this area; however, the Charleston County School District medication administration policy mirrors many of the policies developed by other states. For example, the Charleston district requires that written medication requests be completed by the prescribing physician and parent, that medication be delivered by the parent in its original container, that medication be kept locked at the school, and be administered by a nurse or designated staff.

An estimated 17 percent of school principals reported that their school policy had recently changed regarding the administration of prescription drugs to students. Of the 17 percent reporting a policy change in the last 2 years, 29 percent[29] reported that the change was due to problems with the handling of medications at the principal's school or at a neighboring school.

Conclusions

We do not believe that the diversion or abuse of attention disorder medications is a major problem at middle or high schools. Based on our findings, few middle or high school principals are aware of ADHD medication diversion or abuse, and most do not believe this is a major problem. Furthermore, states and localities appear to be cognizant of the potential for problems and many have established policies and procedures to minimize risks. Finally, the development of nonstimulants for attention disorders and increasing use of once-a-day stimulant medications may reduce the potential for diversion or abuse at school by reducing the need for the medications to be administered during school hours.

[28] The states are Alaska, Georgia, Idaho, Kansas, Mississippi, Montana, and South Carolina.

[29] The 95-percent confidence interval for this estimate extends from 19 to 41percent.

Agency Comments

Agency comments were not requested for this report because no federal agency or federal policies were reviewed. We did discuss our findings with the Drug Enforcement Administration's Office of Diversion Control prior to the completion of our report and have incorporated changes where necessary.

We will send copies of this report to the Ranking Member, House Committee on the Judiciary; the Chairman, Senate Committee on the Judiciary; the Ranking Member, Senate Committee on the Judiciary; the Administrator, Drug Enforcement Administration; and other interested parties. Copies of this report will be available on GAO's homepage at http://gao.gov.

The major contributors to this report are acknowledged in appendix VII. If you or your staffs have any questions about this report, please contact me at (202) 512-8777 or Darryl W. Dutton at (213) 830-1000.

Paul L. Jones
Director, Justice Issues

Appendix I: Objectives, Scope and Methodology

Objectives

Our objectives in this review were to (1) determine the prevalence of diversion and abuse of attention disorder drugs in public schools, 2) describe the school environment in which drugs are administered to students, and (3) obtain information on state laws and regulations regarding the administration of prescription drugs in schools.

We conducted our review between February and June 2001 in accordance with generally accepted government auditing standards.

Survey Scope and Methodology

To attain our objectives, we surveyed a statistically representative random sample of public school principals. We focused our attention on middle schools and high schools, which we defined as schools containing grades 6 or higher. Specifically, we asked these principals a series of questions about any incidents of diversion and abuse of attention disorder drugs at their school since the beginning of the 2000-2001 school year. We also asked a number of questions covering school policies and practices on the administration and storage of these types of attention disorder drugs.

Study Population

The study population for the survey of public school principals consisted of all public schools in the 2000-2001 school year that have at least one grade between 6th and 12th (inclusive), more than 1 teacher, and a total of at least 10 students.[1] The sample was drawn from a list of all public schools in the United States compiled by The Common Core of Data (CCD) for the 1998-99 school year. The CCD is the U.S. Department of Education's primary database on public elementary and secondary education in the United States. We used the 1998-99 CCD file to produce a list of schools representing our study population. From this list of 35,522 schools, we drew a random sample of 1,033 schools to represent the study population in the 50 states and the District of Columbia.

Of the 1,033 surveys we mailed out, 735 completed surveys were returned, a response rate of 71 percent. See appendix II for a copy of our survey instrument.

[1] Schools with a high grade of 6th and a low grade of 3rd or less are excluded from our study population. We did not include elementary schools based on discussion with our requestor.

Sample Design

The sample design for this study is a single-stage stratified sample of schools in the study population. The strata were defined in terms of type of school (middle school, high school, etc.) and community type[2] (city, urban, or small community). Since type of school was not available on the sample frame, we developed criteria based on the highest and lowest grade level reported for the school. The first six strata consist of schools for which an unambiguous assignment to middle school or high school can be made. An additional three strata consist of upper grade schools that have grade levels that overlap between the middle school and high school definitions. The following rules are used to assign middle, high, or high/middle school type:

High school – Schools on the CCD having their high grade and their low grade between 9th and 12th grade, inclusive.

Middle school – Schools on the CCD having their high grade between 6th and 9th, inclusive. In addition the low grade for the school must be 8th or below (but not less than 4th grade).

High/middle – Schools with at least one grade that is greater than or equal to 6th grade, no grades less than 4th grade, and not meeting the above definitions for high school or middle school.

Finally, we sampled another six residual strata that are composed of schools that would meet either the "middle school" or the "high/middle school" definition, except for the presence of some grades less than the 4th grade.

The strata definitions, population sizes, and sample sizes are summarized below.

[2] "City" is defined as a central city of Consolidated Metropolitan Statistical Area (CMSA) or as a central city of a Metropolitan Statistical Area (MSA). "Urban" refers to Urban Fringe (an incorporated place, Census Designated Place, or nonplace territory within a CMSA or MSA of a city and defined as urban by the Census Bureau) or to a large town (an incorporated place or Census Designated Place with a population greater than or equal to 25,000 and located outside a CMSA or MSA). A "small community" is an incorporated place or Census Designated Place with a population less than 25,000 and greater than 2,500 located outside a CMSA or MSA, or any incorporated place, Census Designated Place, or nonplace territory designated as rural by the Census Bureau.

Table 4: Sample of Schools in Our Study

Stratum	Definition	Population	Sample	Respondents
1	Middle school, city community	3,220	148	100
2	Middle school, urban community	5,953	148	111
3	Middle school, small community	5,553	148	117
4	High school, city community	2,118	148	108
5	High school, urban community	4,236	148	109
6	High school, small community	5,251	148	101
7	High/middle school, city community	238	8	4
8	High/middle school, urban community	729	12	9
9	High/middle school, small community	2,517	33	25
10	Middle school with <=3rd grade, city community	1,042	24	10
11	Middle school with <=3rd grade, urban community	1,009	13	6
12	Middle school with <=3rd grade, small community	2,582	34	23
13	High/middle school with <=3rd grade, city community	98	5	4
14	High/middle school with <=3rd grade, urban community	155	5	2
15	High/middle school with <=3rd grade, small community	821	11	6
	Total	**35,522**	**1,033**	**735**

Estimates

Estimates produced in this report are for schools in our study population that could be classified as either a middle school or a high school for the 2000-2001 school year. Although the sample was stratified according to 1998-99 grade levels at the school, estimates are produced for type of school (middle and high school) as determined from the responding school's grade composition for the 2000-2001 school year. The survey responses provide each school's lowest and highest grade for the 2000-2001 school year, and these data were used to classify the responding schools as a middle school or as a high school according to the definition shown below. Of the 735 surveys returned, 596 could be classified as either a middle school or as a high school. Data from schools that could not unambiguously be classified as middle or as a high school are not included in our estimates of middle or high school characteristics.

High school – Responding schools having their high grade and their low grade between 9th and 12th grade, inclusive, for the 2000-2001 school year.

Middle school – Responding schools having their high grade between 6th and 9th, inclusive, for the 2000-2001 school year. In addition, the low grade for the school must be 8th or below (but not less than 4th grade).

These definitions are consistent with those used in the definition of the survey's sampling strata, except that the low and high grade is based on 2000-2001 school year data instead of on the 1998-99 CCD data.

Sampling Error

Because we surveyed a sample of public school principals, our results are estimates of all participants' characteristics and thus are subject to sampling errors that are associated with samples of this size and type. Our confidence in the precision of the results from this sample is expressed in 95-percent confidence intervals. The 95-percent confidence intervals are expected to include the actual results for 95 percent of the samples of this type. We calculated confidence intervals for our study results using methods that are appropriate for a stratified, probability sample. For the percentages presented in this report, we are 95-percent confident that the results we would have obtained if we had studied the entire study population are within +/- 10 or fewer percentage points of our results, unless otherwise noted. For example, a nurse administers medications at an estimated 59 percent of the middle and high schools. The 95-percent confidence interval for this estimate would be no wider than +/- 10 percent, or from 49 percent to 69 percent. For estimates other than percentages (including estimates of ratios), 95-percent confidence intervals are +/- 10 percent or less of the value of the estimate, unless otherwise noted.

Nonsampling Error

In addition to these sampling errors, the practical difficulties in conducting surveys of this type may introduce other types of errors, commonly referred to as nonsampling errors. For example, questions may be misinterpreted or the respondents' answers may differ from those of people who did not respond. We took several steps in an attempt to reduce such errors. For example, we developed our survey questions with the aid of a survey specialist. We discussed the questionnaire with officials at the American Association of School Administrators and the National Association of Secondary School Principals. We held discussions or pretested the questionnaire with 10 public school principals. All initial sample nonrespondents were sent at least one follow-up questionnaire mailing. All data were double keyed during data entry, and GAO staff verified a sample of the resulting data. Computer analyses were performed to identify inconsistencies and other indications of errors, and a second independent analyst reviewed all computer programs.

Other Data Scope and Methodology

To obtain information on state laws and regulations regarding the administration of prescription drugs in schools, we conducted a brief survey of state department of education officials (or persons designated by

officials) in the 50 states and the District of Columbia. The survey requested information on all state statutes, regulations, or other written policies regarding the administration of prescription drugs to students in public schools. As was the case with the survey of public school principals, the questionnaire sent to the state education officials was developed with the aid of a survey specialist, was reviewed by an attorney, and was pretested. See appendix III for a copy of this survey instrument. We received survey responses from 48 states and the District of Columbia, and we verified the accuracy of the survey information by researching the states' statutes and regulations. Likewise, we researched the statutes and regulations of the two states that did not respond (Ohio and Oregon). We focused on five types of medication administration requirements that appeared in many states as the basis for analyzing the various state laws.

As background, we searched Lexis-Nexis and Proquest databases for anecdotal evidence of diversion and abuse of attention disorder medications in schools. Using only the information provided in the resulting pool of articles, specific incidents described in each article were identified, matched for duplication where evidence allowed, and summarized. We did not verify the reliability or validity of the reports.

Appendix II: Survey of Public School Principals – Diversion/Abuse of Medication for Attention Disorders

United States General Accounting Office

Survey of Public School Principals - Diversion/Abuse of Medication for Attention Disorders

Introduction

The U.S. General Accounting Office, an agency of the U.S. Congress, is conducting a national survey of a sample of public school principals regarding stimulant drugs prescribed to children for attention disorders. These drugs include methylphenidate (either generic or brand names Ritalin, Methylin or Concerta) and amphetamines (either generic or brand names Adderall and Dexedrine). In this questionnaire, we ask about incidents of diversion or abuse of these drugs at your school (i.e., on school property) and about your school's policy on medication administration.

GAO will take steps to ensure the privacy of your responses. The number on this questionnaire is included only to aid our follow-up efforts for those who do not respond to the survey. The responses will not be reported in any way that would allow an individual, school, or any student to be identified. Most of the questions in this questionnaire can be answered by checking boxes or filling in blanks. A few questions request a short written entry. Space has been provided at the end of the questionnaire for any additional comments.

Please return your completed questionnaire in the enclosed pre-addressed, postage-paid envelope within 10 working days of receipt. In the event the envelope is misplaced, the return address is:

U.S. General Accounting Office
Ms. Monica Kelly
Los Angeles World Trade Center
350 South Figueroa Street, Suite 1010
Los Angeles, CA 90071

If you have any questions, please call Ms. Monica Kelly at (213) 830-1009.

We urge you to complete this questionnaire. Your response is very important in order to provide members of Congress with information on this issue. Thank you very much for your time.

Please Note:

The drugs prescribed to treat attention disorders include: **methylphenidate (either generic or brand names Ritalin, Methylin or Concerta) and amphetamines (either generic or brand names Adderall or Dexedrine).**

Diverted or abused includes any instances in which the drug was stolen, illegally sold, given away or traded, possessed or ingested without a prescription, or otherwise involved outside of sanctioned uses.

Number of sampled schools classified as middle schools and high schools responding to survey = 596

Estimates presented represent a population of 24,220 middle schools and high schools nationwide.

1

School Characteristics

1. Which of the following best characterizes your school's curriculum focus? *(Check one.)*

   96.9% ❒ Targeted at general student population within a given age range (Including magnet schools and programs)

   3.1% ❒ Focus on specialized student program (e.g., special education, vocational/technical, or other type of alternative programs) *(Please describe)*

   _____

2. What is the grade range at your school? *(Please indicate lowest and highest grades taught.)*

   __4th grade__ Lowest grade __12th grade__ Highest grade

3. As of October 1, 2000, approximately how many students were enrolled in your school? *(Enter number.)*

   _____ Students Mean = 820 students

4. As of October 1, 2000, approximately how many students enrolled in your school were eligible for either free or reduced price school lunches? *(Enter number. If none, enter zero.)*

   _____ Students Mean = 249 students

Diversion/Abuse

5. In the three years prior to this school year (before August or September 2000), were there any incidents that you know of at your school (i.e., on school property) in which attention disorder drugs (see box on page 1) were diverted or abused? *(Check one.)*

   85.9% ❒ No, I do not know of any incidents

   14.1% ❒ Yes, an incident(s) occurred in the following school year(s): *(Check all that apply.)* [1]

   - 38.8% ❒ 1997-1998 school year
   - 46.7% ❒ 1998-1999 school year
   - 74.2% ❒ 1999-2000 school year

[1] Percents reported for "Check all that apply" type questions add to greater than 100 percent.

2

6. Since the beginning of the 2000-2001 school year (i.e., August/September 2000), are you aware of any incidents at your school in which attention disorder drugs have been diverted or abused? *(Check all that apply.)*

88.8% ❒ **No**, I am not aware of any such incidents

2.9% ❒ **Possibly** ➜ Had drug diversion or abuse incidents, but uncertain if attention disorder drugs were involved.

a. How many possible incidents since the start of the 2000-2001school year? . . . _____ incidents
Mean = 1.8 possible incidents[2]

8.3% ❒ **Yes**, I am aware of such incidents ➜ Please answer questions a through d below:

a. How many incidents have there been since the start of the 2000-2001 school year? . . . _____ incidents
Mean = 2.0 actual incidents[3]

b. Please describe the single incident for which you have the most information. In your description, please describe how the drug(s) were diverted or abused.

_____

_____

_____

c. Can you identify which specific attention disorder drug (or drugs) was involved in this incident? *(Check all that apply.)*

77.8% ❒ Methylphenidate (either generic or brand names Ritalin, Methylin or Concerta)
25.1% ❒ Amphetamine (either generic or brand names Adderall or Dexedrine)
1.9% ❒ Not sure which attention disorder drug

d. What measures, if any, were taken as a consequence of this incident? *(Check all that apply.)*

78.3% ❒ Student(s) was (were) expelled or suspended
53.7% ❒ Student(s) was (were) counseled
58.5% ❒ Police were called
0.0% ❒ School policies or procedures were changed
41.0% ❒ Other measures were taken - Please specify:
0.0% ❒ No measures were taken

7. Not including the diversion and abuse of attention disorder prescribed drugs, how large a problem would you say that other illicit drug use **(other than marijuana and alcohol)** is at your school? *(Check one.)*

33.6% ❒ Not a problem at all
44.3% ❒ A minor problem
20.5% ❒ A moderate problem
1.6% ❒ A major problem
0.0% ❒ A very major problem

[2] Mean calculation includes only schools that indicated a possible incident occurred. The mean for all schools responding to the survey is 0.1.
[3] Mean calculation includes only schools that indicated an actual incident occurred. The mean for all schools responding to the survey is 0.2.

8. Compared to other illicit drug use **(other than marijuana and alcohol)** would you say that the diversion and abuse of attention disorder drugs at your school is less of a problem, more of a problem, or about the same as that for other drugs? *(Check one.)*

   The diversion and abuse of attention disorder drugs is . . .

   79.4% ❒ much less of a problem.
   9.1% ❒ somewhat less of a problem.
   10.7% ❒ about the same as other illicit drugs.
   0.7% ❒ somewhat more of a problem.
   0.1% ❒ much more of a problem.

School Administration of Drugs:

9. At your school, do school officials or staff administer prescription medication for attention disorders, including methylphenidate (either generic or brand names Ritalin, Methylin or Concerta) or amphetamines (either generic or brand names Adderall and Dexedrine) to students during a typical school day? *(Check one.)*

   90.0% ❒ Yes → ***Continue with question 10.***
   10.0% ❒ No → ***Skip to question 19.***

10. How many of your school's students are administered the following prescription drugs by school officials or staff during a typical school day? *(Enter numbers. If none, enter zero.)*

    a. Methylphenidate (either generic or brand names Ritalin, Methylin or Concerta)

    _____ Students or ❒ Do not know
    Mean = 9.4 students

    b. Amphetamines (either generic or brand names Adderall and Dexedrine)

    _____ Students or ❒ Do not know
    Mean = 4.5 students

11. Given the number of students at your school that are administered these attention disorder medications on a daily basis, on average, approximately what quantity of attention disorder medications (i.e., number of pills of all drug types combined) would your school typically have on hand? *(Check one.)*

    35.9% ❒ Less than 50 pills
    17.1% ❒ 50 to less than 100 pills
    15.5% ❒ 100 to less than 200 pills
    14.8% ❒ 200 to less than 400 pills
    5.9% ❒ 400 to less than 600 pills
    5.7% ❒ 600 or more pills
    5.3% ❒ Do not know

12. How are attention disorder medications to be administered at school transported from home to school property? *(Check all that apply.)*

48.4%	❒ Student transported
85.7%	❒ Parent transported
5.1%	❒ Other arrangement - Specify:
1.3%	❒ Do not know

13. At your school, what personnel are designated to administer student prescription medication for attention disorders? *(Check all that apply.)*

31.6%	❒ Principal
11.9%	❒ Teacher(s)
74.8%	❒ Nurse
13.4%	❒ Other health-care professionals - Specify:
51.1%	❒ Other non-health professionals - Specify:
5.6%	❒ Students self-administer under certain conditions - Specify conditions:

14. At your school, what personnel **most often** administer student prescription medication for attention disorders? *(Check one.)*

2.3%	❒ Principal
2.1%	❒ Teacher(s)
59.1%	❒ Nurse
7.5%	❒ Other health-care professionals - Specify:
28.3%	❒ Other non-health professionals - Specify:
0.7%	❒ Students self-administer under certain conditions - Specify conditions:

15. If any non-medical personnel are designated to administer medication for attention disorders, what type of training is provided to prepare staff for those duties? *(Check all that apply.)*

21.8%	❒ Not applicable, non-medical personnel cannot administer medication
49.3%	❒ Oral instruction
40.6%	❒ Written instruction
8.6%	❒ Video instruction
49.4%	❒ Instruction provided by trainers or health-care professionals
6.2%	❒ Other training - Specify:
5.4%	❒ No specific training is provided
1.1%	❒ Do not know what training provided

16. How are medications for attention disorders to be administered to students stored at your school? *(Check one.)*

72.4% ❒ In a locked office/room and locked cabinet or drawer
5.7% ❒ In a locked office/room but in an unlocked cabinet or drawer
17.9% ❒ In a unlocked office/room but in a locked cabinet or drawer
1.6% ❒ In an unlocked office/room and in an unlocked cabinet or drawer
2.1% ❒ Other - Please describe:
0.3% ❒ Do not know how medications are stored

17. If medication for attention disorders is stored in any sort of locked location or receptacle, approximately how many people have access to the medication? *(Enter number or check box.)*

_____ People Mean - 2.9 persons

❒ Does not apply *(not locked, don't know how stored)*

18. Are students who are administered medication for attention disorders observed to assure their medication is taken? *(Check one.)*

96.1% ❒ Yes
3.0% ❒ No
0.9% ❒ Don't know

19. What policy or guidance regarding the administration of prescription medicine (of any type) to students have you received? *(Check all that apply.)*

51.4% ❒ State legislation, regulation or other policies (Briefly summarize, if possible.)

_____
_____
_____

90.2% ❒ School district regulation or policy (Briefly summarize, if possible.)

_____
_____
_____

11.1% ❒ Other regulation or policy (Briefly summarize, if possible.)

_____
_____
_____

3.6% ❒ No guidance provided

20. Within the past two years, has your school changed school policies regarding the handling of medications on school property? *(Check one.)*

    83.0% ❒ No changes in policy within the past two years

    17.0% ❒ Yes policy was changed ➜ Was this policy change in the handling of medications a result of problems in your school or a neighboring school? *(Check one.)*

    28.9% ❒ Yes
    71.1% ❒ No

21. If you have any comments regarding the diversion or abuse of attention disorder drugs on school property, please use the space below.

❒ Check this box if you would like us to send you a copy of our report when it becomes available.

Thank you for your participation.

7

Appendix III: State Controls on Dispensing of Drugs in Public Schools

United States General Accounting Office

GAO
Accountability * Integrity * Reliability

State Controls on Dispensing of Drugs In Public Schools

Introduction

The U.S. General Accounting Office (GAO), an agency of the U.S. Congress, is conducting a review of the diversion and abuse in public schools of the stimulant drugs prescribed to children for attention disorders. These drugs include methylphenidate (either generic or brand names Ritalin, Methylin or Concerta) and amphetamines (either generic or brand names Adderall and Dexedrine). A part of this review is to inventory the statutes, regulations, or other written policies enacted or issued by the states that control the administration of prescription drugs to students in public schools. This inventory does not include policies enacted or issued by local governments and school boards.

This survey asks about your state's statutes, regulations, or other written state policies regarding the administration of prescription drugs in a school setting. Space has been provided at the end of the questionnaire for any additional comments. If you would like to receive a copy of our report when it becomes available, please check the box provided at the end of the questionnaire.

If you wish to return your questionnaire by e-mail, the address is **kinchl@gao.gov**

If you wish to return your response by FAX, the number is (213) 830-1180.

If you wish to mail your completed questionnaire, the return address is:

U.S. General Accounting Office
Lawrence Kinch
Los Angeles World Trade Center
350 South Figueroa Street, Suite 1010
Los Angeles, CA 90071

If you have any questions, please call Lawrence Kinch at (213) 830-1048.

Your response is very important in order to provide members of Congress with information on this issue. Thank you very much for your time.

State _____

Name of respondent _____

Title of respondent _____

E-mail Address _____

Telephone number _____

1

1. Does your state have statutes regarding the administration of prescription drugs to students in public schools? (Check yes or no.)

❒ **Yes**

❒ **No**

If yes, please provide the citation for the state statute or statutes.

_____

Please provide a brief summary of the statute and attach a copy.

_____
_____
_____
_____
_____

2. Does your state have regulations regarding the administration of prescription drugs to students in public schools? (Check yes or no.)

❒ **Yes**

❒ **No**

If yes, please provide a brief summary of the regulation and attach a copy.

_____
_____
_____
_____
_____

3. Besides statutes or regulations, does your state have some other written policy regarding the administration of prescription drugs to students in public schools? (Check yes or no.)

❒ **Yes**

❒ **No**

If yes, please provide a brief summary of the written policy and attach a copy.

_____
_____
_____
_____
_____

2

4. If your state has any statutes, regulations or other written policies regarding the administration of prescription drugs at public schools, how does your state ensure compliance with them?

_____
_____
_____
_____
_____

5. Does your state have pending legislative or administrative proposals to enact or amend statutes, regulations, or other written policies regarding the administration of prescription drugs at public schools? (Check yes or no.)

❒ **Yes**

❒ **No**

6. If you have any information which you wish to provide to GAO on this subject, or if you have any comments on this survey, please use the space below.

_____
_____
_____
_____
_____

❒ Check this box if you would like us to send you a copy of our report when it becomes available.

Thank you for your participation.

3

Appendix IV: Anecdotal Accounts of School-Based Diversion or Abuse of Attention Disorder Medications

We reviewed the anecdotal[1] accounts of school-based diversion or abuse of attention disorder medications to provide an indication of the public perception of diversion and abuse of attention disorder medications at schools. We searched two major on-line databases for the period January 1996 to February 2001 for anecdotal accounts. The databases include articles from over 30,000 sources, including every major U.S. newspaper, magazines, and other published sources. Because of the nature of news coverage, no conclusions can be drawn from these accounts. We did not verify the reliability or validity of the identified incidences.

While school-based attention disorder medication diversion or abuse was identified, the extent of problems was somewhat overstated by repeated descriptions of incidents. Most of the articles identified in our review of 5 years of news accounts focused on concerns about the over-prescription of Ritalin. Excluding these articles, about 250 articles mentioned one or more incidences of school-based abuse of attention disorder medications. Closer examination of these accounts indicated that many of the same incidents were repeated in different articles. Using only information about the incidents provided in the news accounts, about 130 of the incidents within the 5-year period appeared to be unique incidents. For example, an abuse incident at an Illinois middle school was mentioned in over 10 different articles. A sample of the accounts:

"Administrators at xx Middle School had heard about Ritalin Abuse for almost three years, Principal X said. But they did not know of abuse within the school until a teacher spotted two students passing something in a restroom last month. Since then, 15 students have been suspended." *Cincinnati Post* (Cincinnati, OH) May 8, 2000.

"Fifteen students at xx Middle School are suspected of abusing the prescription drug Ritalin. According to details of the investigation of this incident, students gave away the tablets or sold them for 50 cents to $1." *Daily Herald* (IL) May 8, 2000.

"Now comes word that the drug used to control the disorder – Ritalin – is being used recreationally by people who certainly don't need it…. At xx Middle School, 15 students were suspended recently for this." *The Deseret News* (Salt Lake City, UT) May 6, 2000.

While most of the incidents identified involved students caught selling or stealing the medications at school, about 20 anecdotal incidents involved

[1] We define news accounts as "ancecdotal" because such accounts are not presented along with evidence that allows the accuracy of the reports to be verified, nor is there any pretext that news accounts coverage is comprehensive or otherwise systematically presented.

theft or abuse by a teacher, principal, nurse, or other school personnel. For example, in one anecdotal incident, a principal was arrested on charges that he stole Ritalin pills from the school medicine cabinet. Anecdotal incidents were reported in 37 out of 50 states.

Appendix V: Studies Related to Diversion or Abuse of Methylphenidate by School-Aged Children

Study	Findings	Measure of abuse	Study population
Monitoring the Future National Institute on Drug Abuse University of Michigan	**Ritalin Abuse** **12th Grade** **2000** Annual Use 2.2%	Students are asked if they have used any of a wide range of drugs, including alcohol and tobacco. Only students who answered "yes" to the use of amphetamines are then asked to specify the type of amphetamine used, with Dexedrine and Ritalin as two of the amphetamine type choices.[a]	Since 1991, a representative national sample of public and private school 8th, 10th, and 12th graders have been surveyed annually, a sample of about 50,000 students overall in 420 public and private schools.
Indiana Prevention Resource Center	**Ritalin Abuse** **12th Grade** **1999** **2000** Lifetime Use 7.4% 7.4% Annual Use 4.3% 4.8% Monthly Use 1.5% 1.9%	Students are asked about their lifetime, annual, monthly, and daily use of specific drugs, including their nonprescribed use of Ritalin and of amphetamines, which are described in the survey as "uppers."	Since 1991, 6th through 12th graders in Indiana have been surveyed on their use of amphetamines, and since 1998 on their nonprescribed use of Ritalin.
Massachusetts Department of Public Health	**Ritalin Abuse** **7th–12th Grade** **1999** Lifetime Use 9.7% Monthly Use 3.3%	Students are asked about use of Ritalin without a prescription in their lifetime and within the last 30 days.	Every 3 years since 1984, the state has surveyed 6th through 12th graders. The 1999-2000 survey of approximately 7,000 students was the first to include questions specifically about Ritalin.
National Household Survey on Drug Abuse	**Nonmedical Use Of Any Psychotherapeutic** **12 to 17 Years Old** **1999** Lifetime Use 10.9 % Monthly Use 2.9 %	Interviewees are asked about their use and frequency of use of various licit and illicit drugs. Nonmedical use of any psychotherapeutic includes any prescription-type pain reliever, tranquilizer, stimulant, or sedative.	Since 1971, random samples of households throughout the United States have been interviewed at their place of residence. In 1999, 66,706 persons including 12 to 17 year olds were interviewed.
Drug Abuse Warning Network (DAWN) Substance Abuse and Mental Health Services Administration	**Drug Treatment Episodes Methylphenidate (Ritalin)** **1999** 0.27%[b]	Within each facility participating in DAWN, a designated reporter, usually a member of the emergency department or medical records staff, is responsible for identifying drug-related episodes and recording and submitting data on each case.	Since 1988, data on emergency department drug related visits has been collected from a representative sample of U.S. acute care hospitals, including 21 oversampled metropolitan areas. The 1999 sample consisted of 592 hospitals.
Arrestee Drug Abuse Monitoring National Institute of Justice	**Juvenile Amphetamine Use % Tested Positive (Range at different cities)** **1999** Male 0 to 16% Female 0 to 18%	Arrestees are asked about taking specific drugs, including amphetamines "like Ritalin," on a lifetime, annual, monthly, and 48-hour basis. A general question is asked to include other drugs not specifically mentioned.	More than 2,500 juvenile male detainees in 9 sites and more than 400 juvenile female detainees in 6 sites are administered urine tests and interviewed in detail about their drug taking, purchases and other drug-related questions.

Note: Some of these surveys also ask about amphetamines; however, those results are not reported here because they do not distinguish between amphetamines acquired through diversion from ADHD prescriptions and those illegally manufactured.

[a] This method of questioning may underestimate the use of ADHD drug use because students may not know that these drugs are amphetamines.

[b] Out of 554,932 occurrences of emergency department drug treatments, methylphenidate was mentioned 1,478 times. Methylphenidate is not in the top 15 most frequently mentioned drugs for 6 to 17 year olds.

Sources: Monitoring the Future - http://www.monitoringthe future.org/
Indiana Prevention Resource Center - http://www.drugs.indiana.edu/
Massachusetts Department of Public Health - http://www.state.ma.us/dph/pubstats.htm
National Household Survey on Drug Abuse - http://www.samhsa.gov/oas/p0000016.htm
Drug Abuse Warning Network (DAWN) - http://www.icpsr.umich.edu/SAMHDA/dawn.html
National Institute of Justice's Arrestee Drug Abuse Monitoring (ADAM) – http://www.adam-nji.net

Appendix VI: State Statutes, Regulations, and Mandatory Policies Addressing the Administration of Medication to Students

State	Source of law	Local responsibilities	Statewide requirements for administering medication in schools: Parent/guardian authorization	Prescriber orders	Pharmacy container	Secured storage	Medication log
Alabama	No applicable provisions						
Alaska	No applicable provisions						
Arizona	Statute: Ariz. Rev. Stat. Ann. 15-344	Requires school district governing boards to establish prescription drug administration policies.	Yes	No	Yes	No	No
Arkansas	No applicable provisions						
California	Statute: Ann. Cal. Educ. Code 49423, 49423.6	No express delegation of authority. Statute requires the state board of education to adopt regulations regarding the administration of prescription medication in public schools, consistent with statutory requirements.[a]	Yes	Yes	No	No	No
Colorado	Regulations: Colo. Dept. of Reg. Agencies, ch. XIII, sec. 7; Colo. Bd. of Health Regs., ch. 9, sec. 105	No express delegation of authority. Regulations require school nurses and other school personnel to comply with regulatory requirements when administering medication.	No	Yes	Yes	Yes	No
Connecticut	Statute: Conn. Gen. Stat. 10-212a; Regulation: Regs., Conn. State Agencies 10-212a-2, 5, 6	Authorize boards of education to adopt written medication administration policies, which, if adopted, must meet state requirements.	Yes	Yes	Yes	Yes	Yes
Delaware	Regulation: Code Del. Reg. 72-000-008, sec. 800.9	No express delegation of authority. Regulation requires school nurse to comply with regulatory requirements when administering medication.	Yes	No	Yes	Yes	Yes
District of Columbia	Statute: D.C. Code 31-2432 to 31-2434	No express delegation of authority. Statute requires D.C. board of education and D.C. department of human services to issue joint rules and regulations for medication administration, storage, and recordkeeping in public schools, consistent with statutory requirements.[b]	Yes	Yes	Yes	No	No

State	Source of law	Local responsibilities	Statewide requirements for administering medication in schools: Parent/guardian authorization	Prescriber orders	Pharmacy container	Secured storage	Medication log
Florida	Statute: Fla. Stat. Ann. 232.46	Requires district school boards to adopt policies and procedures governing the administration of prescription medication by school district personnel, consistent with statutory requirements.	Yes	No	Yes	Yes	No
Georgia	No applicable provisions						
Hawaii	Statute: Haw. Rev. Stat. 321-242; Regulation: Haw. Admin. Code 11-146-4; Mandatory Policy	No express delegation of authority. Statute establishes a statewide school health services program, including statewide requirements for medication administration, as stated in statute, regulation, and mandatory policy.	Yes	Yes	Yes	Yes	Yes
Idaho	No applicable provisions						
Illinois	Statute: 105 Ill. Comp. Stat. Ann. 5/10-20.14b	Requires school boards to develop policies for medication administration in schools.	No	No	No	No	No
Indiana	Regulation: 511 Ind. Admin. Code 7-21-8	Requires public schools operating special education programs to establish written medication administration policies consistent with regulatory requirements.	Yes	No	Yes[c]	Yes	No
Iowa	Regulation: 281 Iowa Admin. Code 41.12(11)	Requires local education agencies offering special education to establish medication administration policies consistent with regulation.	Yes	No	Yes	Yes	Yes
Kansas	No applicable provisions						
Kentucky	No applicable provisions						
Louisiana	Statute: La. Rev. Stat. 17:436.1; Regulation: La. Admin. Code, 28:I.929	Require that a school board, before requiring unlicensed personnel to administer medication, establish medication administration guidelines consistent with statutorily mandated state policy.	Yes	Yes	Yes	Yes	No

State	Source of law	Local responsibilities	Statewide requirements for administering medication in schools: Parent/guardian authorization	Prescriber orders	Pharmacy container	Secured storage	Medication log
Maine	Statute: 20-A Me. Rev. Stat. Ann., sec. 254, subsec. 5.	Requires schools to adopt written policies and procedures for administering medication.[d]	No	No	No	No	No
Maryland	Statute: Ann. Code of Md., Educ., 7-401; Regulations: Code of Md. Admin. Reg. 13A.05.05.08, .10; Mandatory Policy	Require county boards of education to adopt policies for the administration and storage of medication, which implement statutorily mandated state policy guidelines.	Yes	Yes	Yes	Yes	Yes
Massachusetts	Regulation: 105 Code of Mass. Reg. 210.003 to 210.009	Requires schools to adopt policies governing the administration of prescription medications consistent with regulation.	Yes	Yes	Yes	Yes	Yes
Michigan	Statute: Mich. Comp. Laws 380.1178	No express delegation of authority. Statute provides a liability defense to school personnel who administer medication pursuant to parent/ guardian authorization and physician's instructions.	Yes	Yes	No	No	No
Minnesota	Statute: Minn. Stat. Ann. 121A.22	Requires school boards to develop prescription drug administration procedures in consultation with health care professionals.	Yes	No	Yes	No	No
Mississippi	No applicable provisions						
Missouri	No applicable provisions						
Montana	No applicable provisions						
Nebraska	Statute: Neb. Rev. Stat. 71-6718 to 6742; Regulations: 92 Neb. Admin. Code, ch. 59; 172 Neb. Admin. Code., ch. 95.	No express delegation of authority. Statute (and implementing regulations) regulate unlicensed persons administering medication in schools and other settings through competency standards, competency assessments, and procedural requirements.	No	No	No	Yes	Yes
Nevada	Regulation: Nev. Admin. Code 632.226	Requires school nurse to develop medication administration procedures, which comply with state requirements.	Yes	No	Yes	No	Yes

State	Source of law	Local responsibilities	Statewide requirements for administering medication in schools: Parent/guardian authorization	Prescriber orders	Pharmacy container	Secured storage	Medication log
New Hampshire	Regulation: N.H. Admin. Rules, Educ., 311.02	Requires local school boards to establish medication administration policies in consultation with school health care professionals.	Yes	Yes	Yes	Yes	Yes
New Jersey	Regulation: N.J. Admin. Code 6A:16-2.3	Requires district boards of education to adopt written policies for medication administration.	No	No	No	No	No
New Mexico	Regulation: 6 N.M. Admin. Code 4.2.3.1.11.3.2(d)	Requires the supervisory school nurse to develop and implement written policies and procedures for clinical services such as medication administration.	No	No	No	No	No
New York	No applicable provisions						
N. Carolina	Statute: N.C. Gen. Stat. 115C-307(c)	Authorizes boards of education to permit school personnel to administer prescription drugs upon written parent request.	Yes	No	No	No	No
N. Dakota	No applicable provisions						
Ohio	Statute: Ohio Rev. Code 3313.713	Requires local boards of education, which authorize school employees to administer prescription drugs to students, to adopt medication administration policies consistent with statutory requirements.	Yes	Yes	Yes	Yes	No
Oklahoma	Statute: 70 Okla. Stat. Ann. 1-116.2	No express delegation of authority. Statute requires school nurses and other school personnel to comply with statutory requirements when administering medication.	Yes	No	Yes	Yes	Yes
Oregon	Statute: Or. Rev. Stat. 339.869, 339.870; Regulation: Or. Admin. Rules, 581-021-0037	Require school district boards to adopt policies for medication administration, storage, and recordkeeping, consistent with statutory and regulatory requirements.	Yes	Yes[e]	No	No	Yes
Pennsylvania	Regulation: 22 Pa. Code 7.13	Requires school districts to develop medication administration policies, consistent with guidelines issued by the state department of health.[f]	No	No	No	No	No

State	Source of law	Local responsibilities	Statewide requirements for administering medication in schools: Parent/guardian authorization	Prescriber orders	Pharmacy container	Secured storage	Medication log
Rhode Island	Regulation: Code of R.I. Rules 14-000-011, sec. 18.	Requires schools to develop medication administration procedures that include specified minimum requirements.	Yes	Yes	Yes[g]	Yes	Yes
S. Carolina	No applicable provisions						
S. Dakota	Statute: S. D. Stat. 13-33A-2	No express delegation of authority. Statute requires state board of education to promulgate rules for the storage and control of medications at school.[h]	No	No	No	No	No
Tennessee	Statute: Tenn. Code Ann. 49-5-415; Mandatory Policy	Statute requires licensed health care professionals to administer medication in conformity with school board policies and state law, except that school boards may authorize unlicensed personnel to assist students with self-administration consistent with statutory requirements and statutorily mandated state policy guidelines.	Yes	Yes	Yes	Yes	Yes
Texas	Statute: Tex. Educ. Code 22.052	Conditions immunity from civil liability on the adoption of school district policies concerning medication administration to students by school employees, which incorporate statutory requirements	Yes	No	Yes	No	No
Utah	Statute: Utah Code Ann. 53A-11-601	Authorizes schools to develop policies for medication administration by school employees, consistent with statutory requirements.	Yes	Yes	No	No	Yes
Vermont	Regulation: Code of Vt. Rules, 22-000-006, sec. 4220	Requires schools to incorporate specified procedures into their medication administration regulations.	Yes	Yes	Yes	Yes	No
Virginia	Statute: Code of Va. 54.1-3408	Authorizes school boards to train employees to administer drugs, in compliance with school board regulations, physician's instructions, and parent authorization.	Yes	Yes	No	No	No

State	Source of law	Local responsibilities	Statewide requirements for administering medication in schools: Parent/guardian authorization	Prescriber orders	Pharmacy container	Secured storage	Medication log
Washington	Statute: Rev. Code. Wash. 28A.210.260	Authorizes schools to adopt policies governing the administration of oral medications consistent with statutory requirements.	Yes	Yes	Yes	No	Yes
W. Virginia	Statute: W. Va. Code 18-5-22a; Regulation: W. Va. Code of State Rules 126-25-1; Mandatory Policy	Require county boards of education to develop medication administration policies and school nurses to adhere to regulatory and policy standards.	Yes	Yes	Yes	Yes	Yes
Wisconsin	Statute: Wis. Stat. 118.29	Requires school boards, which authorize school employees to administer medication, to develop written policies for medication administration, storage, and recordkeeping, consistent with statute.	Yes	Yes	No	No	No
Wyoming	Regulation: Wyo. Admin. Code, Educ., ch. 6, sec. 17(a)(i)(F)	Requires school districts to establish an organized program for the safe handling, storage, and administration of medications.	No	No	No	No	No
Number of states with applicable provisions	37 states and D.C.		28 states and D.C.	19 states and D.C.	22 states and D.C.	18 states	16 states

[a]The California respondent told us that the implementing regulations are being drafted.

[b]The respondent for the District of Columbia told us that currently there are no implementing rules or regulations.

[c]The regulation requires either a pharmacy label or the physician's prescription. See 511 Ind. Admin. Code 7-21-8(a)(3). In addition, although the regulation does not require schools to obtain a physician's written orders, an Indiana statute provides immunity from liability to school employees who administer prescription medication in compliance with the parent's or guardian's written permission and the practitioner's written orders. See Ind. Code 34-30-14-2.

[d]The Maine statute also requires the state commissioner of education to adopt rules for medication administration in schools, including training requirements for unlicensed personnel. The Maine respondent told us that the rules have been proposed but not yet enacted.

[e]The regulation requires either the physician's instructions or a pharmacy label. Oregon Admin. Rules, 581-021-0037(1)(c).

[f]The Pennsylvania respondent told us that currently there are no implementing guidelines in effect.

[g]The pharmacy-container requirement is specific to self-administered medications. Code of Rhode Island Rules 14-000-011, sec. 18.9.1.1.

[h]The South Dakota respondent told us that the state board of education has not promulgated rules under the statute, but that the state department of health has issued discretionary guidelines addressing medication administration in schools.

Appendix VII: GAO Contacts and Staff Acknowledgments

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Acknowledgments

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