

Smarter Student Drug Testing

Robert L. DuPont, M.D.

Harvey Graves, Ph.D.

Institute for Behavior and Health, Inc.

Rockville, MD 20852

October 20, 2005

We support random student drug testing (RSDT) as part of a school's comprehensive drug abuse prevention program because we know that RSDT is one of the best new ideas for preventing teenage drug use. We also know that many schools using drug testing are not taking full advantage of the potentials of this impressive biotechnology. In this report we focus on which drugs to test for including anabolic steroid testing. We also look at cheating on urine drug tests. These are important, practical questions that are not addressed in most of the advice available to schools about RSDT.

Which Drugs to Identify on Drug Tests

The 5-drug panel widely used in workplace drug testing (marijuana, cocaine, amphetamine/methamphetamine, morphine/codeine, and phencyclidine or PCP) is inadequate for student drug testing. This panel is widely used in drug testing because most drug testing relates to the workplace where drug testing has been widespread for two decades. In schools, where drug testing is newer and is on a smaller scale, the suppliers of drug tests often sell this 5-drug panel. When used in a urine test this panel identifies the use of these 5 specific drugs during the 1-3 days prior to the sample collection, nothing more and nothing less. This limited panel will not identify the use of alcohol or tobacco, two products legal for adults but illegal for teens. It will not identify LSD, GHB, Ecstasy (MDMA), volatile solvents such as glue or gasoline, or a wide range of prescription drugs that are widely abused by teens such as Xanax, Valium, Vicodan and OxyContin. It will also not detect anabolic steroids and related performance enhancing compounds. It will not detect the use of these five drugs that occurred more than 3 days before the urine sample was collected except that very heavy and prolonged marijuana use can produce a positive urine drug test for a couple of weeks in some cases.

Unfortunately many schools using the 5-drug panel compound these limitations by announcing to students that their tests are limited to these five drugs. This makes the drug testing program an invitation to student drug users to use other illegal drugs that are not in their test panel. Using the 5-drug panel is better than no drug testing at all because marijuana is the most widely used illegal drug for all ages, including teenagers. In some communities methamphetamine and cocaine also are widely used by teens. However a school drug testing

program that is limited to these 5 drugs falls short of providing the best protection to the tested students.

We focus in this report on urine drug testing because urine testing is the most commonly used form of drug testing in schools and elsewhere. Urine testing is also the most flexible and usually the least expensive drug testing option. The same solid science, however, lies behind testing of hair, oral fluids and sweat. The recommendations we are making about testing outside this 5-drug panel are applicable to these other forms of drug testing, although currently these other drug testing options seldom offer the option of extending the testing beyond the limited 5-drug panel. As student drug testing becomes more common and as more schools use hair, oral fluids and sweat for drug testing more of these drug tests will include extended panels which can detect a wider range of drugs plus alcohol and tobacco.

Starting with the basics, to achieve the full potential of student drug testing as an effective strategy for drug abuse prevention, the school needs to be able to identify a wide range of abused drugs, including alcohol and tobacco as well as the most commonly prescribed abused drugs and steroids. The tested students should know that the school not only *can* but *does* test for many abused drugs. Students need to know that the use of any abused drug is taken seriously and will lead to the consequences for a positive test that are spelled out in the school's written drug abuse prevention policy. To test every urine sample provided by each student for all of the drugs of concern would be prohibitively expensive, however, costing the school perhaps \$300 or more for each test as opposed to about \$15 for the 5-drug panel. A substantially wider sample of drugs beyond the 5-drug panel can be purchased with confirmation and medical review included for about \$25 per test.

The solution to this apparent dilemma (it costs too much to test for all the drugs of concern) is smarter drug testing. The school needs to test all, or almost all, urine samples for marijuana since it is the most widely used illegal drug. Depending on the drug use patterns locally there are a few other drugs that should be tested all, or almost all, of the time. That is the easy part of smarter student drug testing, the choice of a few drugs to make up the core test

panel. The school may have a standard panel that tests for up to 10 drugs for only slightly more than the 5 drug panel. In that case this 10 drug panel can be the universal drug test panel.

Then the school needs to randomly select additional substances to add to the core panel so that the school can identify a broad range of other drugs including prescription drugs and steroids. How often each of these additional substances is tested for is determined by how frequently the randomly selected samples produce “hits” or positive results for particular drugs, how much adding the new drug costs and on information the school can obtain about frequently used drugs in the community. It is a good idea to put drugs into the random test cycle when they appear in the local media indicating a spike in use, or at least a spike in concern about a particular drug. The school is then in a position to objectively answer questions from parents, the media and others about the prevalence of the use of these additional drugs. The approach we are recommending, having a core panel which is used for all students and then randomly rotating the testing for a wide variety of additional drugs, is the approach that has long been used by the U.S. military, by many agencies of the criminal justice system, and by some forward-thinking drug abuse treatment programs.

Steroid Testing

The recent public concern about the widespread use of anabolic steroids by students has added this class of drugs to the list of illegal drugs of concern. In keeping with our call for a smarter student drug testing strategy we recommend that schools adopt a policy of randomly selecting some of the tested urine samples for steroid testing making sure that students do not know which of the urine samples will be tested for steroids. This approach lets the school identify the extent of steroid use by students and it provides an effective deterrent to the use of dangerous performance enhancement substances.

Recently, the national media and some local media have had high profile stories about teenagers using anabolic steroids. Anabolic steroids are a group of drugs that can build muscles and boost athletic performance by mimicking the effects of the male sex hormone, testosterone produced in the testes. They are mostly synthetic androgens that promote growth of skeletal

muscles and the development of male sex characteristics. Professional sports organizations; the National Basketball Association (NBA), Major League Baseball (MLB), the National Hockey League (NHL), and the National Football League (NFL) have banned most of these drugs because of the serious health damage they produce and because of the distortions their use produces in athletic competition. Attached is a list of substances currently banned by the National Collegiate Athletic Association (NCAA). Smarter student drug testing does not include testing for all of these drugs all of the time – that would be prohibitively expensive. Smarter student drug testing randomly adds some of these drugs to the school’s core panel for a limited number of participants in the school’s drug testing program. For example, a school can test every other donor, every third donor, every fourth donor, or follow some other random selection pattern when using an extended panel. This allows the school to add these tests with reduced cost, while maintaining the deterrence that good drug testing produces.

Anabolic steroids are a specific class of steroid hormones. The other commonly used class of steroids, corticosteroids, is produced naturally by the adrenal glands to manage stress and injury. Corticosteroids are used to treat asthma and a variety of other problems including the use of cortisone to treat many skin ailments. Corticosteroids are not performance enhancing and they are not problems in terms of illegal drug use even though the use of the word “steroids” can be confusing to some students, teachers and parents when the more specific term “anabolic steroids” is not used. Corticosteroids are not detected on school drug tests.

Some students who report steroid use actually are using supplements that they mistakenly believe to be anabolic steroids. The major sports leagues and the NCAA have banned some of these supplements. There is generally limited dosage information for these supplements. Usually a recommended dosage of supplements is the same for everyone. Obviously, a 300 pound lineman and a 160 pound wide receiver should not be taking the same amount of a supplement. There is also the belief by some students that if a little of a performance enhancing supplement is good, a lot is much better. One of the supplements used to enhance athletic performance is creatine. Creatine is a dangerous sports supplement that is not now banned. When creatine first became popular in the 90’s, many athletes found themselves in a hospital with severe kidney damage as a result of their creatine use.

Testing for Anabolic Steroids

Random student drug testing for anabolic steroid presents a dilemma for most school districts. On one hand schools want to make sure they are testing for substances that students are abusing, including anabolic steroids. On the other hand, anabolic steroid testing is prohibitively expensive because there are so many different anabolic steroids, each of which needs to be tested separately. Twenty-nine different anabolic steroids can currently be detected in urine. Several additional anabolic steroids can only be detected using a blood test. Most major sports league (NFL, NBA, MLB, NCAA) use a standard 29-panel urine drug screen. To extend this panel some sports authorities use blood samples as well as urine samples (e.g., International Olympic Committee, International Cycling Federation, World Track Organization).

Drug testing laboratories and service providers are currently tracking the use of specific anabolic steroids by specific groups including student athletes. In the future it may be possible to narrow the panel to the five or ten most widely used anabolic steroids thereby lowering the cost of the tests. In addition some laboratories are researching testosterone ratios. When a person uses an anabolic steroid it shuts down the body's own testosterone production. The testosterone ratio is widely used by major sports organizations in conjunction with anabolic steroid testing. If the testosterone ratio is high it may signal use of anabolic steroids. With more research in the future laboratories may be able to use this less expensive test (\$50.00 vs. \$175.00) as a screening test for anabolic steroid use. If this strategy is successful then schools will need to test only those samples that test positive on the screening test for the full range of anabolic steroids.

The high cost of anabolic steroid testing may come down in the future but even at \$50 a test it is far more expensive than testing for marijuana, cocaine, methamphetamine and other commonly abused drugs. The high cost of anabolic steroid testing is a good reason for school districts to use smarter drug testing.

While in the past anabolic steroid use was limited to male athletes a trend has emerged in anabolic use among teenage girls many of whom are not student athletes. Today increasing numbers of girls are using anabolic steroids to lose weight and to stunt their growth. Most male athletes see these as adverse effects of anabolic steroid use. Ironically, for the same reason that many boys are turned off of anabolic steroid use some girls now are using them.

Testing for Cheating

Smarter student drug testing encourages school administrators to talk with their third party administrators or drug testing laboratories asking them to perform a specimen validity test on all drug test samples to detect, and thereby to discourage, cheating. Specimen validity testing is required in regulated workplace urine drug testing. Specimen validity testing usually does not add an additional cost. It gives schools information regarding the sample's pH, specific gravity and creatinine level. All of these are helpful in screening for supplements as well as in identifying cheating by substituting samples.

Since the beginning of urine drug testing unscrupulous companies have been selling substances to alter the results of drug screens in order to enable illegal drug users to conceal their drug use. Many of these substances are well known. Most drug testing laboratories will perform an adulterant panel at little or no cost. Smarter student drug testing allows schools to inform the students that they are looking not only for anabolic steroids, supplements and prescription drugs but also adulterants and attempts to cheat on the tests.

The Costs of Smarter Student Drug Testing

The first question school administrators ask about student drug testing is how much does drug testing cost. That is a simple question without a simple answer. It is a bit like asking how much does a computer cost. In both cases the answer starts with "it depends on the choices you make." There are many factors that determine how much a drug testing costs. How many students are tested, how often are they tested and what drugs to test for are some of the basic questions that must be answered to determine the direct cost of a drug testing program.

Nationwide, schools are dealing with serious budget problems. The pricing question must be answered successfully before schools can embark on a random drug testing program for students.

To understand smarter student drug testing start by recognizing that the primary goal of random student drug testing is to deter the use of illegal substances. In order to do this a testing program must change the behavior of drug users and would-be drug users. The primary goal of the testing program is not to “catch” drug users. If that were the goal the school would need to test everyone in the random pool of tested students virtually every day. Most students who use illegal drugs do so because they lack a good reason not to use drugs. A smarter student drug testing program with appropriate, but non-punitive, consequences provides a powerful, easily understood reason for students not to use drugs. Schools not only need to change drug-using behavior, but they need to do it compassionately, effectively, and at a reasonable cost.

- How many students in the random pool does the school need to test each year? (random pool penetration)
- How often should the school test? (frequency)
- Which specific drugs should be tested for? (test panel)

Random Pool Penetration

The question of random pool penetration comes down to how many students does the school need to test each school year to achieve its primary goal of deterrence. Random pool penetration has to be deep enough to make all participating students believe that they have a good chance of being picked each time drug testing is performed. Mandated workplace procedures often use a penetration rate of 50% per year. At this rate most of the students in a random testing pool believe that they will be selected on a frequent basis.

Frequency

Schools do not conduct drug tests every day of the school year. It is usually easier for the school to do drug testing only one or two days a week. The days on which testing is done need

to be selected at random. This means that even if drug testing was done on Monday of one week, testing could also be done on some other day of that same week, or that the next drug testing may not occur for two weeks or longer. Students in the test pool need to know that any day could be a test day, even if some students were tested the day before. Schools need to make sure that the testing dates are reasonably spread throughout the school year and that they are not easily predictable. Students in the testing pool must believe they could be selected at any time and on any day that they are in school for the most effective deterrence.

As an example of smarter pool penetration and frequency, consider the example of a test pool of 500 students tested at the rate of 50% a year. An annual rate of 50% means 250 drug tests annually for these 500 students. This will give the school the desired 50% a year penetration of the random test pool of students. To conduct 250 drug tests during a 10-month school year the school needs to do about 25 drug tests a month. If the school chooses to conduct 5 tests on a typical testing day that translates into about 5 testing days each month of the school year. These days should be chosen randomly to be sure that the testing dates are not easily predictable for the students. The larger the pool of students being tested the more frequent the school's testing dates can be.

Be mindful, however, that these are not 250 different students who are tested during the school year. Since testing is truly random every student has an equal chance of being selected each time testing is done whether or not that particular student was already tested that year. Statistics have shown using this random selection method the average in this example is 175 different students tested during a single school year. The majority of the random pool (325 in this example) will not be tested during a 10-month school-year. With this system a few students will be tested twice, a smaller number will be tested three or more times during a single year. Even though the majority of students are not be tested each year, experience with random testing in many settings has shown that this rate of random testing is effective as a deterrent since any of the 500 students could be tested each time the drug tests are conducted.

Smarter student drug testing requires schools to plan their pool penetration and frequency to provide the maximum effect of (deterrence) while using the least resources (money and time).

In this report we recommend a penetration rate of 50% meaning that over the course of a single school year the total number of drug tests done will equal half of the number of students in the testing pool. Some random drug testing schools now use a 10% annual testing rate. While even this low pool penetration rate is a deterrent, we think that 10% is too low to represent a significant deterrent to drug use since during four years in high school less than half of the students will be drug tested even once. Ten percent is surely not ideal because it falls far short of the maximum deterrence although it does reduce the cost of the program by 80% compared to a 50% penetration rate and a 10% annual rate is a lot better than no drug testing at all.

If the school's budget permits we recommend higher penetration rates than 50%. The U.S. military, which sets the standard for effective prevention of illegal drug use with drug testing, employs a 300% penetration rate, meaning that in one year the total number of drug tests done is three times the number of service personnel in the testing pool. Few schools can afford that drug testing rate but this number gives everyone interested in maximizing the benefits of random student drug testing a good target to shoot for.

Testing Panel

The question of the most cost effective testing panel comes down to which drugs does the school test for to achieve its primary goal of deterrence. The core panel is fairly easy to determine. It is choosing the added substances, the drugs beyond the core panel, that requires real work. To make the choice, contact school counselors, school nurses, emergency room nurses or physicians, local law enforcement and local treatment centers. All of these resources will have information on current substance abuse. Smarter student drug testing means making sure that the school tests for the substances that are currently being commonly abused in its neighborhood.

Here is an example of substances to be tested on a regular basis as a typical core panel – amphetamines, barbiturates, benzodiazepines, cocaine, marijuana, methadone, methaqualone, opiates, PCP or phencyclidine and propoxyphene. Some schools use a smaller core panel. Often something like this: marijuana, cocaine, phencyclidine, and methamphetamine. To some extent

the core panel is driven by the costs of the panel as set by the laboratory or test kit provider. Since drug testing is done by automation it is sometimes no more expensive to have 10 drugs tested in the core panel than 3.

Whatever the core panel selected we recommend that the school district, at its discretion, add any substance to this list. Those additional substances beyond the core panel greatly enhance the effectiveness of the deterrence of the school's drug testing program. Here are a few candidates for addition even to the extended list – alcohol, nicotine, LSD, Ecstasy and anabolic steroids. There are literally hundreds of other abused drugs that could be added to this list. In making the school's core list and in adding additional drugs the school needs to get information from test providers since tests are usually sold with pre-set groups of drugs in the test panel. Some additional drugs are easy to add to either the core panel or the extended panel, while others (for example LSD and anabolic steroids) are harder and therefore more expensive to add to the list of tested substances. As drug testing is increasingly used in the country, the choice of drugs goes up and the costs go down.

There are some important questions that need to be answered when considering which drugs to add to the core test panel. The two most obvious additional substances for many schools are alcohol and nicotine. The problem with alcohol testing at school is that, although alcohol is the most widely used drug in high schools, alcohol is commonly used by students in the evenings. Because alcohol is rapidly metabolized the school is unlikely to find positive results unless the tested students are drinking alcohol during the school day. For nicotine the tested substance is the nicotine metabolite cotinine. It is easy for laboratories to test for cotinine but many drug testing laboratories do not offer this option. The school needs to think through whether to include cotinine in its test battery or not. We suggest alcohol be included at least occasionally to verify that there is a very low rate of positive test results in school-based testing. Excluding alcohol can add to controversies in the school because parents are concerned about alcohol use and the absence of alcohol testing implies to some parents a lack of concern about alcohol use on the part of the school. Whether or not to add tobacco (cotinine) testing will be a challenge for the school community since, unlike other drugs tested for, tobacco is not intoxicating.

An alternative to school based alcohol testing is for the school to encourage alcohol testing by parents immediately after their teenage children come home from socializing. Alcohol tests are available for a few dollars and are easy for parents to use. Parental alcohol testing, which is best done in the evening, solves the problem of the rapid metabolism of alcohol and acts as a powerful deterrent to underage drinking.

We encourage cotinine testing since both alcohol and nicotine (tobacco) are illegal for students to use. The usual age for tobacco use is 18. Throughout the country the minimum age for alcohol use is now 21.

Large drug testing laboratories that perform thousands of drug screens each day use an automated assembly line procedure for the initial screening process. Screening tests can also be performed at the school using on-site drug test kits. The confirmation process is performed one drug screen at a time at a laboratory - confirmation cannot be done on-site at the school. During the screening process most laboratories have the ability to look for many drugs and drug metabolites at the same time. By using state of the art computerized pre-set equipment as many as 10 different drugs may be detected using a single process. This mass screening saves time and money. Since these panels are already being utilized, it makes sense to use this technology to reduce the school's costs. By using these preset panels a school may find that the cost of a 10-panel drug screen is cheaper than a customized two or three-panel test. As student drug testing becomes more prevalent laboratories will develop special student panels. These new panels will allow our schools to add substances such as Ecstasy and Anabolic Steroids at much lower costs.

The Basics of Random Student Drug Testing

RSDT reinforces all the other no drug use messages in the school and the community as well as all of the schools other drug abuse prevention programs. With the approach that we recommend the school's primary prevention objective is better achieved at an affordable cost. We encourage schools to work with their drug test providers to devise individualized, workable, flexible and low cost schedules for the rotation of the drugs being tested in the extended panel.

We also encourage schools to carefully keep track of their rates of positive drug test results for each specific drug so that they can identify emerging patterns of drug abuse in their school rapidly and objectively. When a school tests 500 urine samples for a particular drug and none of the tests turns out to be positive for that drug this is a sign of relatively low levels of use of that drug among the school's students. That finding may be used as a trigger for testing for that substance less often.

There are options for drug testing beyond urine tests. Today that means testing for drugs in hair, oral fluids (saliva) and sweat. All of these alternative drug test options use the same solid science that is used in urine testing (the immunoassay screen followed by the GC/MS confirmation). All are reliable when done correctly. The alternatives are superior to urine in that they are highly resistant to cheating, a serious problem with urine testing. On the other hand, none of these newer test options now offers the range of test drugs that urine does. This makes them unsuitable for the smarter drug testing we are recommending. One way these alternatives to urine testing can be successfully integrated into a program along with smarter drug testing, however, is to use oral fluids testing and/or hair testing on a random basis along with urine testing with the hair or oral fluids testing substituting for some urine samples that would have used the core panel only. In this situation it makes sense to compare the results found with oral fluids and hair testing with the results found on urine testing to see which test option produces a higher percentage of positive test results. Having the option to test oral fluids and/or hair also offers an attractive option to discourage cheating since the students being tested do not know whether they will be asked to provide a urine specimen or a sample of saliva or hair. These alternatives are also attractive for students who are unable to provide a urine sample.

Examples of Smarter Student Drug Testing

We now turn to two very different hypothetical school districts. District A is a rural school district over 100 miles from the nearest urban area of more than 100,000 population. District A covers 700 square miles with only one high school. The District has an ethnic population of 45% Hispanic, 18 % Asian, 2 % African American and 35 % Caucasian.

During the planning stages of its random student drug-testing program, District A debated which drugs to include in their panel. After surveying students, nearby drug treatment centers, school nurses, hospitals and local law enforcement, the district decided on a panel. The panel included the following substances; alcohol, amphetamines, anabolic steroids, barbiturates, benzodiazepines, cocaine, Ecstasy, marijuana, methaqualone, opiates, phencyclidine and, propoxyphene. The school sent out a bid package, which included these drugs. As the bids were opened, District A realized they could not afford a random drug-testing program using this extensive panel. The cost was so high for each test that they could only achieve a low pool penetration rate. The District made a decision that this rate would not allow enough testing to provide the deterrent effect they were seeking.

We were given the opportunity to talk to District A's administration about smarter student drug testing. We explained that two of the substances that were in their panel made up 90% of the total cost of testing each sample. The cost of anabolic steroids test was \$175.00 and cost of Ecstasy was \$50. The cost of all of the other drugs combined was \$25.00. The total cost of the entire panel at \$250.00 for each urine test. With an annual budget of \$13,000 for the drug tests the district could only conduct 52 drug tests during the entire school year. With a student test population of 700 students, this pool penetration of only 7% a year was not enough to be effective.

We explained the theory of smarter student drug testing. Their original proposal would have spent 90% of their budget on just two substances, anabolic steroids and Ecstasy. Student drug use studies show that small percentages of students have ever used anabolic steroids or Ecstasy, as opposed to the other substances which many more students use during their school years, especially marijuana. During the entire school year it is unlikely that the district would have found even one positive test result for either of anabolic steroids or Ecstasy.

We recommended that the district form a core panel without anabolic steroids and Ecstasy. It included the drugs we have listed above as the extended core panel plus alcohol. This lowered the cost of a drug screen for the core panel to be used for all test samples to \$25.00 per test. We then recommended that they add, on a random basis, for the extended panel testing

for anabolic steroids and Ecstasy to a limited number of students. The number we chose was 2 high school boys for anabolic steroids and 2 high school girls for Ecstasy at each random visit when about 9 students were tested. This number is enough to let all students know they could be tested for a different substances, but low enough to keep the cost per test affordable. The average cost per drug screen (the average of the core panel plus extended panel) became \$40.00 per test with the added substances tested on a selective, random basis. After analyzing this smarter procedure the district decided that they could afford to add both junior high campuses to their random student drug-testing program.

The result of smarter drug testing was not only increasing the testing at the high school, but adding 230 junior high students with the funds devoted to drug testing. The number of random testing increased from 52 to 325 during school year. Since the district was doing more testing seven additional random testing times were added each year. The random pool penetration rate rose from 7% to 47%. We were able to accomplish this all within school District A's budget which had not been sufficient for their original, far more limited, plan. The basic requirement for smarter student drug testing is that every student in the testing pool should know that he or she could be tested every time a drug test is performed. Students should also believe that they could be tested for virtually any abused substance. Since the students do not know exactly what substance they will be tested for or when they will be tested, the school provides powerful deterrence without testing every student for every substance every school day.

District B is a large suburban district covering 200 square miles. District B is only 20 miles from downtown of one of America's largest cities. District B is experiencing one of the highest population growth rates in the nation. It has over 50,000 students in more than 50 campuses. District B's ethnic population is 60% Caucasian, 25% Hispanic, 7% African American and 8% Asian.

A year ago the national media focused on the use of anabolic steroids in professional athletes. Local media brought this problem to District B. Many investigative reports indicated a "rampant" increase in the use of anabolic steroids. The media reported that this is especially true among athletes in the local high schools.

The school board in District B decided to initiate a random student drug testing program for anabolic steroids. They decided to test all 2000 high school athletes for anabolic steroids only. At the testing rate of 50% that would mean 1000 tests annually. At \$175 per test for an anabolic panel the annual cost of testing for anabolic steroids alone would be \$175,000.

When we were asked to implement this program, we inquired if we could explain smarter student drug testing showing how they were planning to spend money on a single drug that only 2% to 3% of students surveyed admitted that they have ever used. We said that there are many other illegal substances that student surveys show are far more commonly used. We explained that their proposed anabolic steroid testing program did not address use of these drugs. The school district's response was, "We don't have enough money to test everybody for everything."

We outlined for school board B the concept of starting with a core panel and then adding other substances, as appropriate, on a random basis. We explained that this can be effective for a much larger population and cover many more substances for the same amount of money or even for less money. This alternative plan could effectively address their concern about anabolic steroids, and also allow them to deal with a much broader range of illegal substance abuse.

Their next question was which drugs should be included in the core panel so that all test samples were checked for each of these drugs. District B surveyed students, local hospitals, and ER's, treatment centers, professionals, and campus-based administrators. These surveys gave District B a good picture of which drugs are being used in their community. The district also spoke with local drug test providers to see what their options were and the costs of each option. With this information District B formed a core-testing panel consisting of the following -- amphetamines, barbiturates, benzodiazepines, cocaine, marijuana, methaqualone, opiates, phencyclidine and, propoxyphene. That core panel cost the district \$25.00 per urine drug test. The board decided at this new price per test they could test many more students than they had originally planned to test. The school district's next step was to determine how many students would meet the criteria to be in a random student drug testing program. They considered students who were involved in competitive extra curriculum activities as well as students driving

to school and students parking on school property in addition to student athletes. The number of students to be drug tested in the district jumped from 2000 to 7000.

Testing this larger pool at a random rate of 50% using only the core panel would cost the district \$87,500 (3500 x \$25.00). After this expenditure for the core panel the district had \$87,500 from its original budget left. With this money they were able to add about 600 random anabolic steroid or Ecstasy drug screens each year by adding these to the core test on a random unannounced basis. Here is the calculation the school used: 300 tests for anabolic steroids at \$175 x 300 = \$52,500; 300 tests for Ecstasy at \$50.00 x 300 = \$15,000, for a total of \$67,500 – a savings of \$20,000 of their original budget. This meant that they were able to conduct a anabolic steroid or Ecstasy test on about one in five of the students who were tested during the school year, on random basis. All 3,500 tests during that year used the core panel of nine drugs and one in five of those samples of urine was also tested for anabolic steroids or Ecstasy. The tested students had no way of knowing which samples would be tested only for the core panel and which would be tested also for anabolic steroids or Ecstasy.

The school also reserved the right to test for any other drugs that appeared to be a problem in their school community. They did not publicize the exact drugs in core panel and they worked with the laboratory to rotate a few of the drugs in this panel to give them data on other drugs and to maintain the deterrence value for all illegal drug use by students.

Smarter student drug testing allowed this school district to add an additional 5,000 students to their drug testing program at no added cost. That is the beauty of smarter student drug testing. As long as the students might otherwise use illegal drugs don't know when or what they are being tested for, the school receives the full deterrence effect of drug testing. The effect of smarter drug testing approximates the effect of the school testing for every substance every day of the school year, for much less money. Using this system if there were many positives for anabolic steroids or Ecstasy then the frequency of testing for these drugs could be increased. Using this system if the school found that there was widespread use by their students of a drug not in their core panel they could then add that drug not to the core panel.

One of the common misconceptions about student drug testing is that it mostly identifies occasional drug users because most student drug users are occasional users. Because urine drug tests only identify drug use for 1-3 days after it occurs if a student uses drugs only a few days during a year it is almost impossible for that drug use to be identified by random drug testing. If the students in the school are tested at an annual 50% pool penetration rate that means that the average student will be tested only about twice during an entire 4 year high school career. Student drug testing mostly identifies regular, heavy illegal users since these are the students most likely to be identified by drug tests with a detection window of 1-3 days.

Expected Results: What type of results can I expect?

Our experience indicates that positives results often are the same range of percentage positives regardless of the location or size of the school. To provide data for this information we have pooled data from 25 schools that have had a Random Student Drug Testing Program for at least 5 years. All schools tested at the random pool penetration rate of about 50%. Schools vary; no two schools have the same experiences. However we are here presenting the average results of the 25 schools in an area of the country with relatively low drug use rates. The rate of positive tests is higher at the start of random student drug testing than after the program has been in operation for several years.

The pooled results fall into three stages:

- First year – 3% to 5% positive. Some schools elsewhere report positive rates of up to 10% or higher.
- 2nd & 3rd year – 1% to 3% positive
- 4 year and beyond – statistically insignificant, less than ½ of 1%

The drugs most commonly identified by RSDT:

- 85% - marijuana
- 5% - cocaine
- 8% - all other drugs including illegal use of legal substance (amphetamines, opiates, propoxyphene, benzodiazepines, etc.)

- 2% - other (substituted or adulterated samples indicating attempts at cheating.)

Reporting Drug Test Results

The individual students' drug test results must be kept scrupulously confidential. That is a vital element of good RSDT. On the other hand, the summary of the results of RSDT (ensuring that the results cannot be tied to individual students) needs to be made public on a regular basis. It is important to keep track of the results of RSDT program in aggregate including the number of tests conducted and the number found to be positive for various specific drugs. These results give the school, and the school's community, objective data about the extent of illegal drug use by students.

Some critics of RSDT note that in many student drug testing programs there are relatively few positive test results, sometimes only a few a year. They point out that this is an expensive way to find drug abusers. In making this criticism they miss the point entirely. RSDT is not to catch drug users; it is designed to reduce the use of illegal drugs by students. Few positives means the RSDT program is working, not that it is not working. On the other hand, for schools that identify many positive tests this does not mean the RSDT program is not working either. Every single positive drug test result is an opportunity to intervene to help a student and his or her family face the problem of illegal drug use, and to get the help they need to solve that problem.

Whether schools have low positive rates or high they need to be vigilant to the problem of cheating, especially when using urine testing. This means that a negative test may not mean that a particular student has not used illegal drugs recently. It can mean cheating, it can mean use of a drug that was not in the particular student's test panel or it can mean drug use more than 1-3 days prior to the sample collection. Random Student Drug Testing is not, in itself, a complete program of drug abuse prevention. RSDT is one valuable element in a comprehensive prevention program to reduce the use of illegal drugs by youth.

In this report we have described two examples of smarter student drug testing in action. We have outlined the principals of smarter student drug testing. We encourage each school community to think creatively about their own drug problems and how to use random student drug testing as one important part of their efforts to reduce student drug use. We encourage the use of the full range prevention programs including drug education. We encourage the use of the best practices in RSDT including the use of Student Assistance Counselors and Medical Review Officers. To learn more about Random Student Drug Testing study the material listed below, including the website www.PreventionNotPunishment.org, the book recently published by Hazelden, *Drug Testing in Schools* and two excellent publications from the White House Office of Drug Control Policy, *What You Need to Know About Drug Testing in Schools* and *What You Need to Know About Starting a Student Drug-Testing Program*.

We encourage schools using RSDT or thinking about using it to make contact with schools currently using RSDT to learn from them and to become part of the growing ranks of schools using this approach to drug abuse prevention. Since most students will be drug tested when they leave school and go to work it is also valuable to make contact with major employers using drug testing in the area around the school. These contacts can be helpful in purchasing and managing drug tests.

About the Authors

Robert L. DuPont, M.D. was the first Director of the National Institute on Drug Abuse (NIDA) and the White House Drug Czar under Presidents Nixon and Ford. He is the author of *The Selfish Brain – Learning from Addiction* and three separate books published by Hazelden in 2005 on drug testing in schools, drug abuse treatment, and the criminal justice system. He is a practicing psychiatrist and Clinical Professor of Psychiatry at Georgetown Medical School as well as a certified Medical Review Officer. He is President of the non-profit Institute for Behavior and Health, Inc., an organization dedicated to promoting ideas that can reduce the use of illegal drugs, including random student drug testing (RSDT).

Harvey Graves, Ph.D. is President/CEO of Pinnacle Medical Management, with corporate headquarters in Houston, Texas. Dr. Graves has implemented random drug and alcohol testing in over 400 School Districts in Texas. He has served as an Advocate to the Texas Education Association (TEA), The National Association of School Boards, The Texas Association of School Administration and numerous other professional organizations. Pinnacle Medical Management is currently providing random student drug testing to over 400,000 students in Texas.

Additional Resources to Support RSdT

Government Agencies and Services

Drug Enforcement Administration (DEA)

<http://www.usdoj.gov/dea/>

The mission of the Drug Enforcement Administration (DEA) is to enforce the controlled substances laws and regulations of the United States and bring to the criminal and civil justice system of the United States, or any other competent jurisdiction, those organizations and principal members of organizations, involved in the growing, manufacture, or distribution of controlled substances appearing in or destined for illicit traffic in the United States; and to recommend and support non-enforcement programs aimed at reducing the availability of illicit controlled substances on the domestic and international markets.

National Institute on Drug Abuse (NIDA)

www.nida.nih.gov

NIDA supports over 85 percent of the world's research on the health implications of illegal drug use and addiction. NIDA works in collaboration with policy makers and health care practitioners in order to bring about greater public awareness of the dangers of drug abuse.

Office of National Drug Control Policy (ONDCP)

www.whitehousedrugpolicy.gov

The White House Office of National Drug Control Policy (ONDCP) is a part of the Executive Office of the President. ONDCP establishes policies, priorities, and objectives for the federal government's drug control program. The goals of the program are to reduce illicit drug use, manufacturing, and trafficking, drug-related crime and violence, and drug-related adverse health consequences.

What You Need To Know About Drug Testing In Schools

PDF www.whitehousedrugpolicy.gov/pdf/drug_testing.pdf

HTML www.whitehousedrugpolicy.gov/publications/drug_testing/index.html

This guide is designed to assist educators, parents, and community leaders in determining whether student drug testing is appropriate for their schools.

To order, please call: 1-800-666-3332.

What You Need to Know About Starting a Student Drug-Testing Program

PDF www.whitehousedrugpolicy.gov/publications/student_drug_testing/index.html

This guide is designed to assist educators, parents, and community leaders in creating a student drug testing program for their school.

To order, please call: 1-800-666-3332.

The Drug-Free Communities Program

www.drugfreecommunities.samhsa.gov

A program of the Office of National Drug Control Policy and the Substance Abuse and Mental Health Services Administration, Drug-Free Communities is designed to strengthen community-based coalition efforts to reduce youth substance abuse

Office of Safe and Drug-Free Schools

www.ed.gov/about/offices/list/osdfs/index.html

U.S. Department of Education. OSDFS specializes in the administration, coordination and recommendation of school drug policies. They also offer funding opportunities.

Family Educational Rights and Privacy Act (FERPA)

www.ed.gov/offices/OM/fpco/ferpa

Protection of Pupil Rights Amendment (PPRA)

www.ed.gov/offices/OM/fpco/ppra

Substance Abuse and Mental Health Services Administration (SAMHSA)

www.samhsa.gov

SAMHSA provides information on prevention, treatment, and mental health services, as well as free literature, topical searches, and identification of model programs and approaches for preventing and treating substance abuse.

National Clearinghouse for Alcohol and Drug Information

<http://ncadi.samhsa.gov>

SAMHSA's National Clearinghouse for Alcohol and Drug Information (NCADI) is the Nation's one-stop resource for information about substance abuse prevention and addiction treatment.

Substance Abuse Treatment Facility Locator

www.findtreatment.samhsa.gov

SAMHSA's facility locator includes over 11,000 addiction treatment programs for varying ages, addictions and settings.

Center for Substance Abuse Prevention (CSAP)

<http://prevention.samhsa.gov/>

CSAP is the federal organization responsible for improving accessibility and quality of substance abuse prevention services. The Center provides national leadership in the development of policies, programs, and services to prevent the onset of illegal drug use, underage alcohol and tobacco use, and to reduce the negative consequences of using substances.

Center for Substance Abuse Treatment (CSAT)

<http://csat.samhsa.gov/>

CSAT supports a variety of activities to improve the lives of individuals and families affected by alcohol and drug abuse by ensuring access to clinically sound, cost-effective addiction treatment that reduces the health and social costs of alcohol and other drug abuse to communities throughout the nation.

Other Resources

Prevention Not Punishment: An Interactive Website for Schools, Parents and Students

www.PreventionNotPunishment.org

This interactive website is supported by the Institute for Behavior and Health, Inc., a national non-profit organization committed to reducing illegal drug use. This website supports the best practices in non-punitive random student drug testing. It is designed specifically for school communities interested in or currently using random student drug testing. See also www.ibhinc.org.

DuPont RL & Brady LA: *Drug Testing in Schools: Guidelines for This Important New Drug Abuse Prevention Program*. Center City, MN: Hazelden Publishing, 2005.