Chapter 17  Drug Testing in Sports

Case Study 1
As an athletic trainer working at a National Collegiate Athletic Association (NCAA) Division II university, Kent is meeting with the athletics director to discuss developing and implementing a student-athlete drug-testing program at their school. In preparation for this meeting, Kent needs to outline the primary components for developing a drug-testing program. What components should he include for discussion?

Answer: He should include a written policy (legally reviewed and university approved) that includes the purpose of the program, a list of banned substances, methods to be used for testing, the consequences of a positive result, an appeals process, a treatment/rehabilitative solution, university personnel who will be involved in administering the program (eg, program administrator, medical reviewer, appeals committee), and any third parties or vendors (eg, collection company, laboratory, shipping agent, supply company).

Case Study 2
As an athletic trainer at a NCAA Division I university, Beth has just been designated as the drug-testing administrator for their student-athletes’ anti-doping program. The university’s student health clinic has been performing urine specimen collections and sending samples to a US Department of Health and Human Services–certified laboratory. Beth has recently noticed an increase in samples being received at the laboratory that are deemed untestable due to being too dilute and some being identified as non-human biological specimens. Perplexed, Beth meets with the director of the student health clinic to evaluate the collection process, and she reviews the program’s policy and protocols. Her findings reveal that protocol does not include determining specimen adequacy prior to sending the sample to the laboratory and vaguely describes the actual collection of urine from the student-athlete. What recommendations should Beth provide to the athletics director to prevent unacceptable samples from being sent to the laboratory?

Answer: To avoid diluted, substituted, or manipulated specimens from being sent to the laboratory, there are several things that can be done to deter or eliminate potential adulteration of samples. First, consider eliminating any advance notice of the drug test to the student-athlete. This takes some planning, but no-notice testing eliminates the ability to intentionally dilute or substitute a sample. Second, collecting urine samples must include the collector performing a direct frontal observation during the urination process to prevent substitution or manipulating the sample during voiding. Finally, it is best practice to measure the specimen’s specific gravity to determine the acceptable sample concentration prior to packaging and shipping it to the laboratory. Assuring that these steps are adopted in the policy and protocols will greatly deter, if not eliminate, intentional acts to thwart a drug test.

Exam Questions
1. Which of the following is not a necessary element for implementation of a successful anti-doping program?
   a. Adequate capacity for analysis of samples.
   b. A written policy with a complete banned drug list and no therapeutic exemptions.
c. A clear strategy for what samples athletes will be subjected to and how samples will be collected.
d. A process for athletes to appeal decisions and consequences associated with a positive drug test.

2. The gold standard method for confirmation of a positive screening test is:
   a. Thin-layer chromatography.
   b. Enzyme immunoassay.
   c. Gas chromatography with mass spectrometry.
   d. Spot test.

3. A laboratory test with high specificity has:
   a. A low rate of false positive results.
   b. A low rate of false negative results.
   c. A low standard deviation.
   d. A low error rate.

4. Which of the following is a dietary supplement that has been used by athletes as a masking agent?
   a. Ginkgo biloba.
   b. Goldenseal root.
   c. St. John’s wort.
   d. Saw palmetto.

5. Analysis of long-term drug use history can be obtained using which sample?
   a. Sweat.
   b. Urine.
   c. Plasma.
   d. Hair.

6. Which of the following is not a limitation of using urine samples for drug testing?
   a. Drug concentrations in urine are typically lower than drug concentrations in plasma.
   b. The sample can be altered to mask the presence of drugs by using additives or by dilution.
   c. Privacy concerns arise with observed sample collection.
   d. The sample must be collected during the time frame when the drug is excreted in the urine.

7. What organization is responsible for drug testing, education, and adjudication for the United States Olympic Committee?
   b. International Olympic Committee Medical Commission.
   c. Substance Abuse and Mental Health Services Administration.
   d. US Anti-Doping Agency.

8. In the case Barbay v. NCAA, the court found that:
   a. Student athletes have a diminished expectation of privacy.
b. The NCAA is not subject to constitutional challenges.
c. Drug testing of student athletes does not constitute unreasonable search and seizure.
d. Consent forms for drug testing do not interfere with due process rights.

9. When developing a drug testing program for athletes, the first step should be to:
   a. Contract with an outside entity to conduct sample collection.
   b. Write policies for a system of sanctions for positive drug tests.
   c. **Conduct a needs assessment.**
   d. Develop a banned drugs list.

10. An advantage of using a sweat patch for drug detection is:
    a. This method is not susceptible to the issue of external contamination.
    b. **The sweat patch is tamper evident.**
    c. Higher concentrations of drug are found in sweat compared with other specimens.
    d. This method can be used to detect long-term drug use.