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# **UMI**

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DEVELOPMENTAL SYSTEMS MODEL AND GUIDELINES  
FOR DRUG PREVENTION, EDUCATION, MONITORING AND COUNSELING  
FOR INTERCOLLEGIATE ATHLETICS

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE  
UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF EDUCATION  
IN  
CURRICULUM AND INSTRUCTION  
AUGUST 1995

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## Abstract

The purpose of the study is the development of a systems model for substance abuse, including the prevention, education, monitoring and counseling components to enhance the intercollegiate student-athlete's self-efficacy. The systems approach is important because each of the components is comprehensively interrelated, and together, have a much greater impact on the end-result than if they stood alone. This study has important corollary considerations that are also addressed. Included are issues of values and ethics, individual consciousness, building of self-confidence, self-esteem and communication, viewed as a positive, growth-producing process in the lives of student-athletes.

Concomitantly, our legal system frames how society and, more specifically, academic institutions deal with the problem of drug abuse. A major dilemma, then, has become defining civil liberties in the face of societal demands for eradication of drug use.

While specific models dealing with drug prevention, education, monitoring and counseling are separately available, an integrative approach is absent. The developmental systems model cannot be concrete; it will change and develop further as more information and definitive data become available. Therefore, the developmental systems model is a process. The final goal of

the process is individual self-efficacy; the worth of the individual and ability to learn and grow is extremely significant. Making decisions about drugs and the risks involved based on a thorough and consistent understanding of drug use is deemed the most compelling basis for this study. It is intended that the four components work in concert, drawing strength and credibility from each other. It is a sequential and simultaneous process to enhance the individual self-efficacy of the student-athletes.

Integrating the guidelines of the model to actual practice, future implementations will need to design interventions and programs, effectively manage them and modify them based on systematic evaluation. If one message can come from a holistic institutional Model of Drug Prevention, Education, Monitoring and Counseling, it is that singular approaches serving their own self-defined purposes cannot contribute as effectively and efficiently to the institution's broader goals as a comprehensive model.

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## Chapter 1

### Background of the Study

#### Introduction

As far back as the 1800's, drug control or freedom from control was already a dilemma that had strong, disparate views. The debate, which has continued to this day, centered on individual autonomy vs. enforced drug control. John Stuart Mill in 1859 wrote in his much discussed essay, On Liberty, "The freedom of adults to live their own lives in their own way should be abridged only to protect others." Mill's defense of freedom of speech was regarded as very radical for his time and had few supporters but was prophetic in this sense: that harm to others can be a justification for state or administrative intervention if there have been occurrences or if there are definite risks. The scenario of the 1980's and 1990's is clearly a reflection of Mill's impressions, albeit 130 years later.

The interaction between drugs and behavior, especially to enhance athletic performance, is not a modern phenomenon. The ingestion of chemical substances to gain an artificially induced competitive advantage began, according to Thomas F. Burks, in the third century B.C. with the Greek athletes who ate several varieties of mushrooms to enhance their performance. Ancient Egyptian athletes used the powdered hooves of an ass to aid in their self-confidence, and early

Aztec athletes used a stimulant from the cactus plant that pharmacologically resembled strychnine (Ray and Ksir, 1993). Various psychoactive drugs were also employed from the earliest of times to mask fatigue and fear. In more recent years the use of steroids, first utilized in the physical rehabilitation of prisoners of war during World War II, and a variety of stimulants including amphetamines, cocaine and caffeine has enjoyed popularity among athletes seeking a competitive edge both in competition and in training.

#### Identification of the Problem

The use of drugs in our society, especially amongst the young in our communities, has been on a steady increase over the years. It is therefore reasonable to assume that as a "community" athletes also have experienced steady increase in drug usage. When one considers the enormous pressures to "win" placed on athletes from the highest competitive levels down to high school competitors, it is easy to grasp the meaning of competitive advantage (Blatnick, Boston and Griffith Joyner, 1994). In our high-tech communication-oriented world, the media has contributed immensely to the public's immortalization of the finest athletes and their financial stability has become common knowledge. The lifestyle of the successful athlete epitomizes the essences of the "American dream" motivating competitors to follow the Olympic credo of "swifter, higher, stronger" in an effort to

be the best. This behavior, while extremely worthy, does encourage the less motivated of our athletes to seek an advantage usually by artificial means and sometimes at great risk to their own health and welfare. Athletes as a whole have an attitude of indestructibility and are not above experimenting with chemical substances that will meet their competitive needs, often in dosages above medically prescribed levels. Burks says that little is known about the reversibility of the toxic effects of these drugs and a number injuries and deaths attributable to drug use have been recorded (Burks, 1981). Another motivating factor for the use of illicit drugs by athletes has been the "me too" syndrome: If the competition is perceived as using drugs for performance enhancement, then I should be ingesting drugs as well for that purpose or suffer the effects of a "drug gap."

#### **Philosophical and Theoretical Framework of the Study**

This study is undergirded by the philosophy of pragmatism. Pragmatism views the universe by accepting the world of science impressions and scientific study. It perceives the universe in a state of continuing evolution (Araki, 1994).

Pragmatists accept reality by viewing the experience of ordinary human beings in everyday life as the only reality. Pragmatists accept no doctrine of absolute reality. To know

reality, pragmatists feel that one must immerse oneself in the thick of it, experiencing as much as one can (Araki, 1994, and Gellerman, 1963).

To the pragmatist, man's social order or society is of basic importance because all actions must be viewed in the context of social consequences (Gellerman, 1963). The individual, then, is finally responsible for all social action and its consequences.

The theoretical proposition that man is continuous with the world is a basic tenet. Man is part of nature, not separate from it, and continuous with nature. Each human organism has individual traits and individual capacities and is in fact a unique organism within the general species. Man is purposive, a goal maker and a goal seeker, and cannot be described simply as response to stimuli (S-R) (Carver and Sergiovanni, 1969).

Both Douglas McGregor and Rensis Likert were behavioral pragmatists and humanists with professional interest as social-psychologists. McGregor's Theory Y cosmology and Likert's principle of supportive relationships promulgated the "optimistic view of the nature of man." Also, since both men viewed man as a learning, growing and purposive animal, we can assume that both subscribed to pragmatism. As such, both men also believed that the behavior of an individual can change and does change as the personality and the interactional environment interpenetrate as a function

of an individual's seeking to improve his or her mode of behavior. This concept subscribes to Lewin's Field Theory, which may be articulated as  $\text{Behavior} = f(\text{PxE})$  (Araki, 1993).

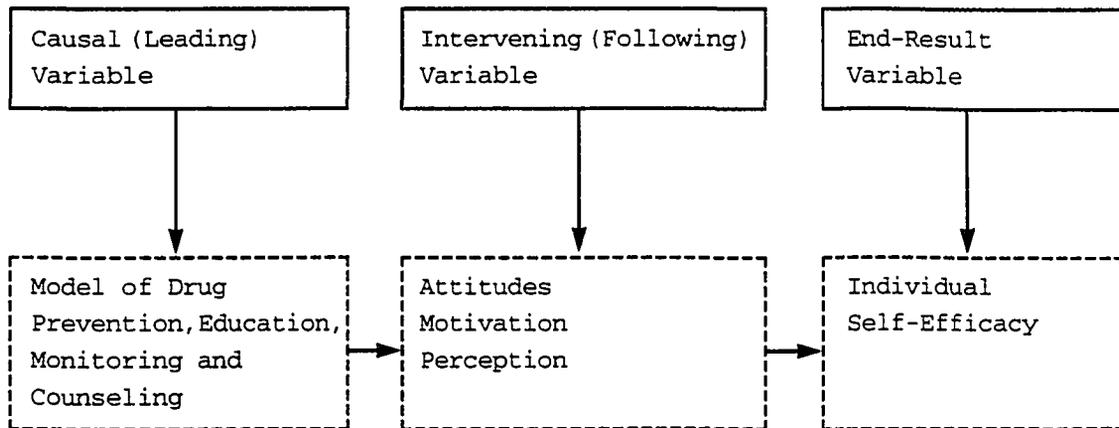
The following theoretical framework (paradigm) is presented using Likert's framework for organizational change. With this framework for organizational (social) change, we are able to enunciate the process by which self-efficacy of the individual may become enhanced within the systems model of drug prevention, education, monitoring and counseling.

#### **Theoretical Framework of the Systems Model**

The importance of the systems concept and the value of the contributions as an analytical framework to understanding the dynamics of performance and success have been stressed increasingly in recent years. Discussions which are particularly relevant appear in Emery and Trist (1969). Lewin's Field Theory (1948, 1951) was, of course, an earlier statement of the systems concept.

When an organization seeks to make changes toward improvements, the application must involve a total systems modification and not an atomistic modification. When change is desired, it should be a shift from one coordinated system to another, maintaining all the while the integrity of the system and its component parts.

The change should start by altering first the most influential causal variables (see Figure 1) and there should be systematic plans to modify in coordinated steps all of the operating procedures which now anchor the model.



**Figure 1. Theoretical Framework of the Systems Model**

The three kinds of variables shown in this figure are the causal, intervening and end-result variables. These variables can be thought of appropriately as comprising a complex network of systems with many interdependent relationships. This network concept contributes to an understanding of system models and the study of change (Carver and Sergiovanni, 1969).

The causal variables have two essential characteristics: They can be modified or altered by members of the organization, i.e., they are neither fixed nor

controlled by external circumstances; and they are independent variables, i.e., when they are changed they cause other variables to change, but they are not, as a rule, directly influenced by other variables. The major items in the causal grouping, such as the character of the organizational structure, the leadership principles employed, and the major assumptions concerning policies and controls, will prove to be causal in actual operation in most situations.

When an organization is seeking to make a shift, the efforts to change should be found initially in the causal variables. Change brought about in the causal variables will lead in turn to change in the intervening and end-result variables. Attempts to bring the desired shift into focus by concentrating on the intervening variables directly will result usually in disappointment and failure (Gellerman, 1963).

The paradigm in Figure 1 shows the causal variable represented by the developmental systems model and guidelines for drug prevention, education, monitoring and counseling for intercollegiate athletics. Inherent and included in this model are the major causal variables of organizational structure, leadership principles and policies and controls.

The model for drug prevention, education, monitoring and counseling is designed to enhance the development and

improvement of student-athletes' self-efficacy within the context of intercollegiate athletics. Due to significant differences in learning styles and abilities amongst our student-athletes, it is imperative to include a need assessment and monitoring programs to gain a more realistic and comprehensive perspective on the problem at hand. The design of such a program must also be predicated upon the concept of improving instead of proving, and growing instead of controlling. However, the multidimensional strands of this study involve more than responses to drug use as a crisis situation. They aim at developing student athletes holistically; this includes the knowledge base, which in turn affects values, attitudes, perceptions and actions, with the end-result being the improved self-efficacy of the student-athletes.

Self-efficacy involves the ability to make informed judgments about one's personal ability to accomplish a specific task in a particular setting. It is characterized by the individual's capacity to:

1. Be proactive.
2. Begin with the end in mind.
3. Put first things first.
4. Think win-win.
5. Seek first to understand, then to be understood.
6. Synergize (come together for the "greater" good of the group).

7. "Sharpen the saw" - balanced self-renewal:  
physical, social-emotional, spiritual and mental  
(Covey, 1989).

Self-efficacy, which is a more concrete expression of self-esteem, may affect a student's choices of activities and ability to exercise coping skills in the face of obstacles. Self-efficacy is also an important construct for understanding why some students react with a sense of helplessness to certain challenges. Therefore it is considered to be the key element in the personal laws of behavioral control that an individual adopts.

The developmental model for drug prevention, education, monitoring and counseling for college student-athletes is based on the following assumptions:

- That educators and students need greater awareness of the basic problems underlying drug use to enable them to better evaluate the wide variety of alternatives offered as solutions to these problems and to guide in the development of an internally consistent set of values and a program that has a realistic relationship to the goals of higher education and to the larger context of societal behavior.
- That the holistic and integrated model which encompasses education, monitoring, prevention and counseling will heighten awareness and analytic

opportunities for students to make responsible choices when they are faced with opportunities for drug use.

- That the holistic and integrated model is undergirded by the philosophy of pragmatism and the theoretical foundation of behavioral humanism which enhances the student athlete's ability to make intellectual judgments and behave in accord with individual and societal principles even when challenged or threatened by others; and to sustain and improve one's self-efficacy and to establish relationships which make allowances for differing needs and separate priorities.

#### **Purpose of the Study**

The purpose of the study is the development of a systems model for substance abuse prevention, education, monitoring and counseling to enhance the intercollegiate student-athletes's self-efficacy.

This study has important corollary considerations that are also addressed. Those considerations include issues of values and ethics, individual consciousness, the building of self-confidence, self-esteem and communication to be viewed as a positive, growth-producing process in the lives of student-athletes.

Concomitantly, our legal system frames how society and, more specifically, academic institutions deal with the problem of drug abuse. A major dilemma, then, has become defining each individual's civil liberties in the face of societal demands for eradication of drug abuse.

This study encompasses the current realities of addressing drug use/abuse. In other words, legal behavior still is a matter of choice. It also deals with people's ideas and motives. Research has tended to categorize legal behavior into four areas (Wadler and Hainline, 1989). They are: self interest--following the law because of fear of getting hurt; sanctions--fear of the police or authority; social influence--sensitivity to the thoughts and action of others; and conscience--one's own sense of right or wrong dictates what to do.

Whether viewed from a legal or ethical frame, the model presented here generally reflects the optimistic view of the nature and cosmology of man; more specifically, it assumes that people are rational, self-regarding beings. Therefore, the intellectual, behavioral and affective dimensions are seen as key elements in providing avenues for individuals to make informed volitional decisions. In an attempt to address the need for theoretical conceptualizations, having both heuristic and applied utility, the presumption that self-efficacy beliefs serve as an important cognitive influence is made (Bandura, 1977). The theoretical

considerations and rationale for this study are outlined in Chapter 3. Chapter 4 provides a comprehensive description of the implementation of this unique paradigm.

#### Limitations of the Study

1. Drug education has perhaps the most far-reaching positive long-range effects of the four components being reviewed. However, for the purposes of this study, all four components--drug prevention, education, monitoring and counseling--will receive equal emphasis as a developmental model. Longitudinal data will not be available for any of the components until several more years have passed. It is recommended in Chapter 4 that such data be gathered throughout the coming years. It seems certain that analyses of this information will prove increasingly meaningful and useful as time passes.
2. Results of drug testing in intercollegiate athletics are based on a single test administered to individual student-athletes at the University of Hawaii at Manoa prior to their participation in a major sport (Internal Management Regulation and Procedures for Drug Education and Testing of Student-Athletes at the University of Hawaii at Manoa, 1987). Although follow-up studies are important components in program evaluation, and will figure prominently in the

implementation of this model, time and financial constraints may cause neglect of these factors in intercollegiate drug programs.

## Chapter 2

### Review of the Literature

#### Introduction

The review of the literature will begin with the history of drug testing programs, drug testing programs in intercollegiate athletics, drugs used by athletes, stimulant drugs, analgesics, anti-inflammatory agents, anabolic steroids and anti-anxiety agents.

The review will also examine the extent to which intercollegiate athletics is involved with drug prevention, education and monitoring of student-athletes in American colleges and universities.

Other studies dealing with substance abuse and drug testing programs, as well as a review of integrative systems programs, will also be documented and discussed.

#### Drug Testing Programs

According to Burks (1981) chemical analysis used to detect the use of prohibited substances was initiated at the 1968 Olympic Games. Since then the International Olympic Committee and other athletic governing boards have adopted strict regulations and guidelines regulating the use of substances used for performance enhancement. Chemical analysis techniques used to implement these rules are the first known to science and when used properly, are

unequivocal in courts of law. They include: gas chromatography, high performance liquid chromatography, mass spectrometry and radioimmunoassay. The drug testing protocol established for the Olympic Games and other major championship events may change as officials strive to promote fair competition; but generally the outstanding performers are examined for the use of banned substances, while the rest of the competition is checked randomly (Ray and Ksir, 1993). Thomas Burks, in his article, "Drugs Used by Athletes" quotes D. F. Hanley:

"At the Montreal Games in 1976, three of the 1,786 urine samples examined for amphetamines were positive and the athletes were disqualified. Eight of the 275 urine samples tested for anabolic steroids were positive. Seven of the eight positive tests were from male athletes, one from a female. At the Lake Placid Games in 1980, more than 2,000 urine samples were examined with one found to contain a banned drug." (1981, p. 118)

Typically, athletes who choose to gain a competitive edge through the use of barred substances like anabolic steroids will do so during their sport's "off-season," in the hope that they can gain an advantage while not being "threatened" with drug testing. These athletes try to refrain from steroid usage as their sport's in-season competition approaches, thereby "cleansing" their bodies of any residual steroid effects (Burks, 1981). A number of these athletes attempt to mask the effects of steroid use by consuming testosterone which will register in the urine sample tested. This has proven ineffective because high

amounts of testosterone in the urine are indicative of a "masking" attempt and the highly sophisticated testing procedures will eventually determine which banned substances was ingested (Burks, 1981, Ray and Ksir, 1993, and Griffith Joyner, 1995). Drug testing is a high-cost program, whether it be for the Olympic Games or for smaller collegiate championship events. The projected cost for drug testing at the 1996 Olympic Games being held in Atlanta, Georgia, is \$700,000 (Hale, 1995). There is also much discussion being conducted on the actual benefit of drug testing since the therapeutic and placebo effects are not easily sorted out. According to Burks, "The effects sought by athletes are generally consistent with (a drug's) recognized pharmacological actions. The major beneficial effect of both amphetamines and anabolic steroids may be to increase aggression and motivation, resulting in improved self-confidence and more diligence in training" (1981, p. 119). Unless administered by a competent physician, the amount taken by an athlete may be less than therapeutically beneficial to performance, but it may have a placebo effect if the athlete believes he or she is receiving a performance-enhancing benefit. Therefore, psychological preparation plays a key role in the actual psychomotor manifestation of drug use outcomes and hence can be channeled away from this prohibited practice (Boston, 1994). The discussion continues, but from a moral/ethical

orientation the use of prohibited substances to gain a performance-enhancement advantage, especially at risk to the health and safety of the athletes, is clearly objectionable. As suggested by much of the literature, due to the influential status of coaches on players, drug information and its effects are programs for athletic staffs as much as for participants.

### **Drug Testing Programs in Intercollegiate Athletics**

According to the literature, formalized drug testing programs for student-athletes are a fairly recent phenomenon. In June 1986, Len Bias called the nation's attention to drug abuse in college athletics with his tragic death due to cocaine intoxication. Although the research has not yet proven that intercollegiate athletes abuse drugs more than the general public, due to their highly visible circumstances, the public spotlight has been focused on intercollegiate athletics programs and drug use (Burt, 1987). The heightened awareness of drug abuse as a problem for college athletes has led professionals in intercollegiate administration to respond to this situation, often through the development of drug testing programs (Evans, 1990).

Since 1986, by NCAA mandate, member institutions are authorized to test student-athletes for performance-enhancing or harmful drugs. The organization's rationale

for developing this policy was "to insure the health and safety of athletes and to insure fair and equitable competition" (Schaller, 1991, p. 132). The evolution of drug testing in intercollegiate athletics is signified by a 1989 NCAA regulation inviting participation by colleges and universities in off-season drug testing, especially for anabolic steroids, a recent and popular drug. Subsequently, Proposal Number 53 was passed at the annual NCAA Convention which stated that a student-athlete who was found to have used a banned substance would be ineligible for regular season as well as post-season competition for a year (1989-90 NCAA Manual).

The review of collegiate drug abuse pointed to different milestones that define not only the extent of but the sophistication of drug use. Robert Bird, in Drug Use Survey at Florida Technological University, (1977) reported that "the three major drugs used by students are, in the following order: alcohol, 79%; tobacco, 43%; marijuana, 42%. Alcohol has been, and continues to be, the major drug abused by students" (p. 265). More recently, cocaine, marijuana, amphetamines and alcohol because of its ready availability have been deemed the prominent drugs of use. With the concern by athletes for enhancing their individual performance, steroids and amphetamines have become popular (Schaller, 1991). The NCAA has published an extensive list of banned drugs including diuretics, psychomotor and central

nervous system stimulants (1988-89 NCAA Manual). Caffeine is also listed: "if the concentration in the urine exceeds 15 micrograms/ml" (Goldberg, 1994).

While institutionally initiated drug testing programs have increased since 1986, a striking finding is that many institutions already had drug testing policies in operation. According to the literature, two universities with noteworthy drug programs were Temple University and Notre Dame University. At Temple, in addition to testing, the model included education and counseling of student-athletes. The research cites the University of Maryland, where Len Bias matriculated, as having a prototype plan with diverse approaches to handling substance abuse.

It appears that the philosophical stance on drug testing is viewed by implementing institutions as a means of enforcing a larger substance abuse policy and not as an end to itself. Research to this point also seems to favor the view that drug testing has a legitimate role in intercollegiate sports. It is a deterrent, many say, to drug use by student-athletes and is a monitor for their health and safety.

The widespread societal problem of substance abuse is the subject of an extensive body of literature. Similarly, an array of notes related to drugs and athletic competition, performance and goals have been in circulation. Several questions arise in consideration of the pharmacological

effects of drugs used to enhance athletic performance. Are the expected effects consistent with usual therapeutic indications? Do the expected effects actually occur? Are placebo reactions significant and can they explain the benefits perceived by the users? These questions are considered below in the context of the individual classes of drugs that have become research questions for a number of concerned scientists.

### Drugs Used By Athletes

Examples of the types of drugs most often used by athletes fall into three categories: performance-enhancing (ergogenic) drugs--ingested for the purpose of gaining a competitive advantage; therapeutic drugs--used to enhance the health and well-being of the athlete and taken in accordance with good medical standards; "street," "entertainment" or "pleasure" drugs--ingested for the sole purpose of modifying mood and behavior. They are generally available illicitly or are consumed outside the standards of good medical practice (Wadler and Hainline, 1989).

These drug categories are not mutually exclusive; for example, a "street" drug such as cocaine may also have value in the performance-enhancement category. Some of the more commonly used drugs, which may or may not be categorically exclusive include: stimulants, opioid agents, anti-

inflammatory agents, anti-anxiety agents and alcohol (Anderson and McKeag, 1985).

In using drugs for performance-enhancing purposes, it is essential for the athlete to weigh the potential benefits of drug use against the potentially devastating negative effects. The following tables provide an interesting comparison for athletes to consider:

**Table 1. Representative Potential Benefits of Ergogenic Drugs**  
(Wadler and Hainline, 1989)

Increase in strength and power  
Increase in endurance  
Increase in aggressiveness  
Increase in speed and acceleration  
Enhancement of competitive attitude  
Enhancement of concentration  
Enhancement of fine motor coordination  
Enhancement of eye/hand coordination  
Diminishment of pain perception  
Diminishment of anxiety  
Diminishment of tremor  
Delay in the onset of fatigue  
Weight control

**Table 2. Representative Potential Costs  
of Ergogenic Drugs**  
(Wadler and Hainline, 1989)

Impaired judgment  
Impaired reaction time  
Impaired muscular coordination  
Impaired balance  
Impaired eye/hand coordination  
Deterioration in the performance of complex motor  
tasks  
Decreased strength  
Decreased flexibility  
Decreased accuracy  
Decreased speed and acceleration

### **Stimulant Drugs**

Webster defines stimulant as: "an agent (as a drug) that produces a temporary increase of the functional activity or efficiency of an organism or any of its parts" (p. 1158). While exceedingly commonplace in societal use, stimulants have been most intrusive in athletics.

The cluster of drugs that falls under the stimulant category has had widespread identity due to its popularity. With the impetus to become or stay competitive in whatever undertaking one is participating in, the use of stimulants, specifically amphetamines, methamphetamines, ephedrines and

caffeines has made these terms nearly household labels (McArdle, Katch and Katch, 1981; Strauss, 1988).

Amphetamine use has had a fairly long history in American society. Wadler and Hainline (1989) said: "In 1970, amphetamines constituted 14 percent of all psychoactive drugs prescribed by physicians" (p. 76). The labels on so-called everyday medication, namely head cold syrups and hay fever pills, identify amphetamines as a key ingredient. According to the research, amphetamines have been found to increase endurance in running and swimming tests in laboratory animals.

The literature on the effects of amphetamine on athletic performance pointed to studies conducted by Smith and Beecher (1959). Smith and Beecher, who were commissioned by the American Medical Association Committee on Amphetamine Drugs and Athletics, studied three types of athletic performance: swimming, running and weight throwing. Their procedures were thorough; amphetamine was administered two to three hours before the event in a dose of 14 mg/70 kg of body weight. Their results showed amphetamine was found to produce small but consistent improvements in performance. Interestingly, those who were given placebos also demonstrated performance improvements. In the majority of cases, however, performance was apparently improved by amphetamine. A similar study conducted at approximately the same time using slightly

lower dosages of amphetamine could not detect the effect of the drug in treadmill tests, swimming and running performance. In the second study, the dosage of amphetamine was smaller and the time between drug administration and performance was shorter (0.5-1 hour) than in the study that showed a performance-enhancing effect of amphetamine. The improvements in performance produced in trained athletes by amphetamine, even if a true drug effect, is quite small. However, it must also be noted that the edge achieved by even small improvements in performance may represent the winning margin in today's athletic competition.

According to Burks (1981), some professional football players have been described as ingesting massive doses (50-150 mg or more) of amphetamines in the hours preceding a game to create the state of mind required for their athletic success. The result is a prepsychotic, paranoid rage state. The analgesic rage induced by massive doses of amphetamines produces a prolonged temper tantrum that partially explains the violent, aggressive behavior characteristic of certain professional football players. Like human beings, rats have been reported as being more aggressive when given large doses of amphetamine.

That amphetamines have adverse effects is a major concern. The literature cites case studies where these agents cause nervousness, restlessness, tremors, insomnia,

cardiovascular disturbances including cardiac arrhythmia, dizziness and gastrointestinal disturbances (Burks, 1981).

The stimulant ephedrine is a sympathomimetic drug used therapeutically in the treatment of bronchial asthma because it dilates the thin walls of the bronchial tubes. It is used by athletes as a bronchodilator and as an amphetamine-like central nervous system stimulant. Headache, dizziness, urinary retention and cardiac arrhythmia result from excessive dosages of ephedrine.

Caffeine is a powerful stimulant of the central nervous system. It decreases drowsiness and fatigue. Over-  
ingestion of caffeine may produce serious toxic effects to the central nervous system and the circulatory system. Insomnia, restlessness and excitement are the early symptoms, which may progress to mild delirium. Sensory disturbances such as ringing in the ears and flashes of light are common. Tachycardia or rapid heart rate and momentary arrhythmia are frequent. These toxic cardiovascular effects are exaggerated by vigorous exercise. Runners and cyclists who use caffeine routinely take at least 330 mg, the equivalent of three tablets of a popular over-the-counter preparation.

### **Analgesics**

The term analgesia, i.e., insensibility to pain without loss of consciousness, encompasses the notion that drugs can

relieve pain, although for temporary periods only. Analgesics and local anesthetics are used frequently to relieve pain caused by sports-related injuries. Local anesthetics can be used inadvisedly to mask pain due to an injury, permitting the athlete to compete with serious injuries. The critical concern lies with an athlete who can badly aggravate an injury without knowing it if there is no pain to alert him or her of the damage taking place.

The most commonly used pain relievers are the mild analgesics such as aspirin or acetaminophen. Narcotic drugs, such as morphine or meperidine, are more rarely used during competition because of their sedative qualities. Narcotic drugs, however, are frequently used to control the diarrhea caused by enteric infections or which results from psychological causes. It should be noted that morphine (contained in paregoric) and diphenoxylate are banned drugs in many athletic competitions, such as the Olympic Games. Nonopioid anti-diarrheal preparations must be employed by Olympic athletes. Narcotic drugs do not possess anti-inflammatory properties. This action is an advantage associated with the use of salicylates.

The salicylates such as aspirin or acetaminophen are the most widely used pain relievers in this class of internal analgesics. Salicylates are effective in blocking somatic pain in the mild to moderate range and reduce body temperature elevated by fever. They also reduce the

inflammation and soreness in an injured area (U.S. Food and Drug Administration, 1988).

### **Anti-inflammatory Agents**

Athletes frequently suffer from the following conditions commonly treated with anti-inflammatory agents:

1. acute injuries--ligament sprains, muscle strains, contusions, fractures and cartilage damage;
2. chronic injuries--tendinitis, tenosynovitis, bursitis, fasciitis, compartment syndrome and stress fractures; and
3. other conditions--osteoarthritis of weight-bearing joints (Wadler and Hainline, 1989).

When used in conjunction with the more traditional ice, ice massage and compression, the anti-inflammatory drugs may significantly assist the athlete to return to practice and play in a minimum amount of time. Excessive and prolonged use of these substances can cause gastric irritability, gastrointestinal bleeding, hypertension and congestive heart failure in susceptible individuals. In addition, immoderate use of the salicylate drugs may cause ringing of the ears, acute bronchial spasms and edema (Burks, 1981).

### **Anabolic Steroids**

Anabolic steroids occur naturally in the human body in the form of testosterone and its derivatives. There is

great interest in the use of steroids by athletes involved in sports that require added strength, body weight and an aggressive attitude like football, wrestling and weight throwing (Burks, 1981).

Steroids produce both androgenic (masculinizing) and anabolic (tissue-building) effects (Wadler and Hainline, 1989). According to Wadler and Hainline (1989), testosterone was first isolated in crystallized form by Laqueur in 1935 and was synthesized shortly thereafter. This allowed for the rapid exploitation of the compound in its naturally occurring state, eventually leading German troops in World War II to experiment with steroids to develop musculature and aggressiveness. Probably the most widespread use of steroids during this period was in the rehabilitation of allied prisoners of war. This practice was short-lived as the negative side effects outweighed the expected positive results. In 1954 Russian athletes dominated international track and field events as the result of what the world viewed as anabolic steroid use. The practice quickly spread to other sports including football and swimming (Perlmutter and Lowenthal, 1985). Wadler and Hainline also state:

"As early as 1956 Olga Fikotova Connally said, 'There is no way in the world a woman nowadays, in the throwing events--at least the shot put and the discus--I'm not sure about the javelin--can break the record unless she is on steroids. These awful drugs have changed the complexion of track and field'" (1989, p. 56).

Some athletes who would normally refrain from the use of steroids find themselves in compromising positions when it is perceived that the competition is using steroids and they do not wish to be victims of a "drug gap." As an illustration, Dave Cadigan, New York Jets offensive lineman, is quoted on his use of anabolic steroids:

"I played against a lot of guys I know for a fact were using steroids. I'd play them one year, and the next year, they'd come back 15 pounds heavier, stronger and they looked different. They played better and hit harder. That was one piece of the pie in my decision... I will do anything to become the best lineman in the NFL...If they (the NFL) don't like it, screw them. This is a business. They're not naive to the situation." (Wadler and Hainline, 1989, p. 56)

Anecdotally, the use of steroids has received positive reviews even in contrast to the attempts of many to point out the very real negative, life threatening side effects. There is inadequate medical evidence that steroid use alone improves muscle strength (Wade, 1972). The drug seems to have a euphoriant effect, allowing the athlete to recover quickly from strenuous exercise and creating a positive attitude enhancing the quality of each training session (Burks, 1981).

The exact effects of anabolic steroid use on the athlete and his/her performance remain controversial, but there is no doubt that prolonged usage will have deleterious effects on the user. Much of the data available comes from individuals ingesting anabolic steroids in clinical doses.

The negative results reported in these studies are represented in Table 3.

No class of drugs has stimulated more discussion on efficacy in athletics than anabolic steroids. Discussions on usage persist among the athletes, but clearly the risks of anabolic steroid use outweigh any potential benefits.

**Table 3. Adverse Effects  
of Anabolic Steroids**  
(Wadler and Hainline, 1989)

Liver function abnormalities  
Peliosis hepatitis  
Benign and malignant liver tumors  
Wilms' tumor  
Prostate adenocarcinoma  
Hypogonadotropic hypogonadism  
Azoospermia  
Testicular atrophy  
Feminization (enlarged breasts, high-pitched voice)  
Decreased high-density lipoprotein  
Increased low-density lipoprotein  
Hypercholesterolemia  
Behavioral changes/psychiatric disorders  
Impaired humoral immunity  
Acne  
Hair loss  
Premature epiphyseal closure in prepubescent children

### **Anti-anxiety Agents**

Anti-anxiety drugs are used in athletics to steady the nerves or promote sleep the night before an athletic event. Alcohol and marijuana remain as the traditional anti-anxiety agents for both the general and athletic communities (Ramirez, Kratochwill and Morris, 1987). In addition to alcohol and marijuana, athletes have also used benzodiazepine derivatives, resopine and propranolol or related adrenergic blocking drugs for their calming effects. Although these drugs do fulfill a need, they obviously can interfere with essential cardiovascular homeostatic adjustments and can be deleterious to the user (Burks, 1981).

### **Intercollegiate Athletics Drug Abuse Models**

A consistent focus among colleges and universities in the research on campus substance abuse programs has been the development of the whole person. In addressing holism then, drug programs have tended to be multifaceted approaches. Most schools operating drug testing programs have started to develop creative substance abuse prevention programs (Ametrano, 1992). According to John Ryan (1985), President of Indiana University, effective models have changed, "from something we all wanted but could not afford...to something we cannot afford to be without." While it has become very apparent that any intercollegiate athletics program is susceptible to drug abuse, a lot still needs to be done to

ensure effective, viable programs. In particular, the literature on alcohol abuse speaks to the continued attempts by colleges and universities to put together the necessary components for their model programs. Such activities as early intervention, referral and counseling as well as drug awareness are taking prominence but in different degrees.

Federal requirements, most notably the Higher Education Act, P.L. 89-329, are reported by the vast majority of the colleges surveyed as influencing their substance abuse policies. While the regulations of the Higher Education Act may have influenced the development of drug abuse policies and programs, the findings also suggest that these may result in little effect on abuse. That is, any substance abuse prevention effort, would meet federal guidelines, whether it was effective or not. Colleges that seem to have essential elements for an effective substance abuse policy and its enforcement are consistently comprehensive and collaboratively administered. John M. Evans, in NCAA Drug Program: Out of Bounds But Still in Play, noted that these programs become "team efforts of university administrators, coaches and athletes" (1990, p. 190).

The University of Florida is identified in the research for its continued dedication to alcohol and drug prevention efforts. More than 15 years ago, this alcohol abuse program used students and peers to serve as role models for other students. Its present integrated theoretical model for

alcohol and other drug abuse prevention is behaviorally principled with historic connections to Bandura's cognitive learning theory. Florida's success with its program is powerfully expressed in the following manner: "Students will not be motivated to alter their behavior unless they see the problem as serious, feel personally susceptible, and perceive the existence of alternative forms of behavior that are beneficial and consistent with their lifestyles" (Ingram-Chinn, 1988).

Clearly it cannot be assumed that drug abuse models will impact all areas relating to drug use as they stand. Therefore, evaluations being conducted on these models caution toward increasing personal responsibility, viable options offered and perceived severity and even penalty for unwanted actions.

#### **Drug Prevention, Education and Monitoring on College Campuses**

The past few years have witnessed an intensification of interest among intercollegiate athletic programs on college and university campuses in reducing illicit drug use. The concern seems to be most pronounced in institutions with large and highly competitive programs. A case in point is the Campus Drug Testing Program recently instituted at the University of Maryland, College Park, in response to the death of a well-known student-athlete.

It appears that design and implementation of mandatory drug prevention programs have often been responses to crisis situations or have been spurred by public attention to scandals or problems. In the main, these have been interventions to stop the spread of drug use by establishment of stringent drug policies, by policing and punishment. It has not been surprising that drug testing for use of ergogenic drugs has evoked some dissent. Some feel it is an infringement on rights while others support it for the assurances it provides. Reports espousing each stance proliferate.

The drug use issue has become a global problem. National and international policies related to substance abuse in sports have been well documented. In particular, the Olympics arena has been active, providing the International Amateur Athletic Federation Doping Control Regulations, 1986; International Olympic Amateur Charter Against Doping in Sport, 1988; and U.S. Olympic Committee Division of Sports Medicine and Science Drug Education and Control Policy, 1988.

Finally, the literature strongly suggests that substance abuse can no longer be considered an individual's problem but that it has community, national and worldwide ramifications. It touches the lives of all, for some directly, or others indirectly.

Conceptually, the model in this study encompasses the independent variables of drug prevention, education and monitoring as having direct influences on the system network which provides support (e.g. counseling) and on individual self-efficacy. The notion of self-efficacy has been receiving increasing attention especially in areas related to student academic achievements and career development. Albert Bandura and others developed a theoretical explanation of therapeutic change in which the concept of perceived self-efficacy plays the central mediational role (Bandura, 1977). This concept refers to beliefs concerning one's capability of successfully engaging in a taught behavior; strong perceived efficacy is postulated to lead to behavioral approach and weak efficacy to lead to avoidance. Thus, the modification of perceived self-efficacy can affect performance with respect to behavioral domains ranging from paradigmatic snake phobias (Bandura, 1977) to sports performance (Abel, 1984), assertiveness and social skills.

Although past research has strongly suggested the role of perceived self-efficacy in the area of drug use, little or no research attention has been paid to the influences of drug prevention, education and monitoring on self-efficacy. The model in this study is viewed as a proto-typical study that relates earlier work on drug testing and monitoring standards to a more complex domain of educational and

support programs for which there is considerable logical and empirical support.

### **Bandura's Social Learning Theory: Role of Self-Efficacy**

Bandura's self-efficacy is the most notable concept of the Social Learning Theory. It predicts that self-efficacy expectations may be important mediators of behavior and behavior change. Bandura (1977) was cogently articulate in stating the reciprocal relationship that he saw existing between efficacy and cognition. He stated that a high level of personal efficacy "fosters cognitive constructions of effective actions and cognitive reiteration of efficacious courses of action strengthens self-beliefs of efficacy."

(Schwarzer, 1992, p. 10) Further, according to Bandura, the most potent form of efficacy expectation is learning through experience, labeled performance accomplishment. Related to drug use, of particular relevance is that personal efficacy can affect the degree of effort one expends and the persistence one uses to change. Alcohol and other drug use, according to this theory, is a socially learned, purposive and functional behavior which is the result of the interplay between socioenvironmental factors and personal perceptions.

According to the self-efficacy paradigm, a necessary component to drug prevention and education is the availability of peers with regard to specific characteristics such as age, sex and other attributes

(Bandura, 1986). Vicarious modeling experiences, i.e., learning through observations of other people or events, or both, are perceived as a powerful source of efficacy expectations. The literature maintains that a strong theoretical foundation of drug abuse programs is encompassed by: a) the individual and his or her biopsychosocial susceptibilities to alcohol and other drug problems as well as the individual's knowledge about alcohol and other drugs, attitudes and motivations that influence usage patterns and drinking or drug use behavior itself and b) the environment-the setting or context in which drinking or drug use occurs, the campus and community mores that shape usage practices, and legal sanctions, controls, and policy regulations that govern alcohol or other drug availability and use on campus.

Individuals participating in college drug use programs such as one at Macalester College affirm the importance of interaction among participants. Studies such as those conducted by James P. Spradley and David W. McCurdy of Macalester seem to parallel efficacy-oriented thinking with such observations as: "...expected behaviors (norms) are signposts against which its members measure the appropriateness of their behaviors" (U.S. Department of Education, 1992, p. 5). The literature reflects the growing recognition that a long-term, systems perspective which addresses personal and social factors is necessary for

effective drug prevention (Kumpfer, 1985; Klitzner, 1990; and Wallack, 1987).

While research on self-efficacy expectancies is fairly recent, controlling the amount of drug intake or resisting its temptations is not new. The belief that addictive behavior can be changed through one's own skills is a widely held theoretical construct (Schwarzer, 1992). Further, the role of perceived self-efficacy embodies being one's own agent of behavior change and in control of the decisions to do so.

A review of the literature reveals that self-efficacy is proving to be a very powerful behavioral determinant, especially on health-related behaviors. Most research on the change of detrimental behaviors has been conducted with respect to smoking cessation (Baer and Lichtenstein, 1988). Generally the finding is that the stronger their self-efficacy beliefs, the higher are the goals people set for themselves and the more dedicated is their commitment to engage in their intended behavior.

### **Summary**

In addition to stimulants, analgesics, anti-inflammaory drugs, anabolic steroids and anti-anxiety agents, athletes may also ingest a variety of special foods, nutritional supplements and vitamins in the belief that these nutritional aids will build muscle and increase strength.

Amphetamines, which have been found to produce wakefulness, alertness, a decreased sense of fatigue, elevation of mood, confidence, ability to concentrate, elation, euphoria, and an increase in motor activity, are used in virtually every sport that requires quick bursts of energy and acceleration despite excruciating fatigue. Because of its anorectic effect, jockeys and wrestlers use amphetamine to "make weight" for certain competitions. The adverse reaction to amphetamine-like drugs is related to their spectrum of pharmacologic actions. These agents may cause nervousness, restlessness, tremors, insomnia, cardiovascular disturbances including cardiac arrhythmia, dizziness and gastrointestinal disturbances. Profound depression reactions may follow the toxic psychoses induced by the massive dosages of amphetamine.

Some athletes occasionally use analgesics and local anesthetics to mask the pain of an injury, allowing them to continue to compete with serious injuries. This practice is not encouraged because aggravation to the injury may occur since there is no pain to alert the athlete of the damage taking place.

Anti-inflammatory agents are widely used by athletes to relieve localized heat, redness, swelling and tenderness. Excessive and prolonged use of these substances can cause gastric irritability, gastrointestinal bleeding, hypertension and congestive heart failure in some

individuals, as well as other effects. Withdrawal from anti-inflammatory agents should be accomplished gradually to avoid adrenocortical crisis.

Anabolic steroids have stimulated more controversy in regard to efficacy in athletics than any other class of drugs. Scientific studies suggest that benefits attributed to anabolic steroids may be largely placebo reactions. The subjective reaction to the taking of a drug may lead the athlete to a performance better than he expected. It has been pointed out that increased muscle size comes mainly from proper training and conditioning. Males produce testosterone throughout adult life, yet muscles do not increase in size and strength throughout life. Although there is inadequate medical evidence to conclude that anabolic steroids directly improve muscle strength, they may exert a "euphoriant" effect which assists in the recovery from strenuous exercise and makes the athlete feel better. The drug seems to have a positive effect in relation to the individual's attitude toward training and therefore the quality of the training. High dosages of anabolic steroids before puberty and early adolescence stunt growing by inducing early closure of the epiphyses of the bones. Abnormalities of liver function may occur with oral anabolic agents at any age. Of even more concern, use of anabolic steroids in adolescents and possibly in adults can lead to the development of hepatocellular carcinoma. Clearly, the

risks involved in anabolic steroid use outweigh any potential benefits.

Although alcohol is the traditional anti-anxiety agent used in athletics, newer substances such as chlordiazepoxide, diazepam and oxazepam have come into vogue to steady hands during competition and to promote sleep the night before. These drugs can interfere with essential cardiovascular homeostatic adjustments and can be deleterious to the user.

It appears that design and implementation of mandatory drug prevention programs have been responses to crisis situations or have been spurred by public attention to scandals or problems. In the main, these have been interventions to stop the spread of drug use by establishment of stringent drug policies, policing and punishment. It has not been surprising that drug testing for use of ergogenic drugs evoked some dissent. Some feel it is an infringement on rights while others support it for the ensurances it provides. Substance abuse can no longer be considered an individual's problem. It touches the lives of all; for some directly, others indirectly.

According to the literature on self-efficacy from a systems perspective, as a concept, it has been shown to be either competing with or complementing other theoretical models. It has been found that earlier alternative models such as the expectancy/valence model or the

person/environment congruence suggested the need to explore the comparative utility of efficacy expectations further, thus introducing the call for an integrated theoretical view (Hoover-Dempsey, 1987).

Correspondingly, the promotion of working directly toward building self-efficacy as a means to reduce substance abuse became a clear motivation. In their attempts to foster one's self-concept then, the integrative models developed and in effect today incorporate comprehensive medical examinations, fitness and nutritional screenings, appropriate exercise activities and other mediating personal and behavioral skills programs into their plans.

There have been a few studies on systems models that advocate behavioral skills training and adaptations of drug abuse programs to specific subcultures (Lenguna, 1992). In particular, the emphasis was focused on providing specific and accurate information to specific user/consumer groups. This focus was intended to deal with the AIDS/Drug Prevention areas.

The current thinking for systems models also speaks to the notion of more reinforcement given toward one's self-efficacy. One study even advocated a behavioral intervention plan comprised of contingency management and a community reinforcement approach. With a deliberate program maintenance component factored in, the researchers said each step or each area of the systems paradigm should have an

efficaciously designed momentum approach. That is, building one's self-esteem and self-concept in the process of implementation (Altus, 1991).

## Chapter 3

### Overview of the Design

#### Introduction

The parameters of the term systems when applied to education is fairly broad. A basic technical definition of a system is: a set of components interacting for a purpose within a boundary that filters inputs and outputs (Bertalanffy, 1975). This definition provided a foundation for the expansion of systems phenomena as popularized by the general systems theory in the late 1960's. In fact, the perspective that now defines systems theory in general is one of interaction and connectivity (Berrien, 1968). The foundation of systems models is distinguished by its emphasis on relationships among components. Whereas previous research dealt with analysis of components individually, a system's importance in its entirety as well has become fundamental to systems theories.

Implicit in the systems approach, particularly the aforementioned general systems theory, is a logical-deductive scientific method of inquiry. Yet, according to the research, many people reject general systems theory as taking too mechanistic a view of human beings and perhaps conforming too much to quantifiable factors in the relationships of parts. The evolution to a social systems approach has become more palatable as a theoretical view

for systems proponents in that human beings are both psychological and social beings. In educational research then, human behavior is seen as the results or outcomes of expected behavior determined by an institution and a student's personality and needs. Further, a systems approach not only elucidates inputs, interaction and outputs, but describes behavior patterns and role constraints.

#### **Developmental Systems Model: A Process**

A developmental systems model requires the review of the components of drug prevention, education, monitoring and counseling. While specific models dealing with each of these components are separately available, an integrative approach to drug prevention, education, monitoring and counseling was absent. The developmental systems model examined here will change and develop further as more information and definitive data become available. The developmental systems model is a process.

Current literature on substance abuse on college campuses has focused primarily on prevention and monitoring (Pinger, Payne, Hahn and Hahn, 1995). This focus seems to uphold the traditional concept of student development on college campuses. That concept affirms that cognitive mastery of knowledge is integrated with affective dimensions, the likes of cultural awareness, interpersonal skills, value development and community responsibility

(Covey, 1989). This view elucidates the need for the component of education and counseling to integrate cognitive mastery of learning and the affective dimensions. A critical point made from this framework is that planning and programming with respect to the environmental conditions in which individuals behave and learn are more important than had been presumed (Pinger, Payne, Hahn and Hahn, 1995). Hence, the emphasis in this developmental systems model is on integrating prevention, education, monitoring and counseling as they interpenetrate toward individual self-efficacy of the student-athlete.

An interpretive perspective, in tandem with normative and descriptive science, reflects an integrative approach to the study of drug use on campus (Ehlers, 1981). The developmental model is intended as more than quantity-driven research; it provides for constructive interpretations about reality from qualitative reviews.

The importance of responding with a developmental orientation, emphasizing the whole person, while attending to individual differences and working with the student at his or her developmental level, is the foundation for implementation of this model, which includes the developmental process of the overall model toward individual self-efficacy (Bandura, 1977).

The developmental systems model of drug prevention, education, monitoring and counseling embraces the notion

that a person's beliefs and values are influenced by his/her immediate social, educational and physical environments (Ehlers, 1981). Its implications are that the dimensions of development are all interdependent and must be balanced in order for a student-athlete to grow in a well-rounded way (U.S. Department of Education, 1987). There has been ample evidence that the way people feel about themselves relates to self-enhancing or self-destructive behaviors and that prevention, education, monitoring and counseling play roles in how people feel about themselves (Marcia, 1966).

The interrelationship between the dependent components of drug prevention, education, monitoring and counseling is the main pronouncement of the systems drug model. Of particular relevance to self-efficacy, precepts of support system network are also hypothesized to affect a person's decision on using drugs, as is the degree of effort one may expend in handling drug abuse (Bandura, 1977 and 1982).

A major principle of this model is that stable decision making is a function of the extent to which one is knowledgeable about and anticipates potential consequences prior to taking a drug related action. Additionally, self-efficacy is fostered through experiences with various environments. Ameliorative efforts of the systems model combine content and process of an individual and the informational and professional support afforded the person. Counseling individuals plays a major role as one of the

major components of the developmental model (Lent, Brown, and Larkin, 1984).

Each of the four components--prevention, education, monitoring and counseling--will be designed programmatically and structured organizationally. The model may ultimately result in a Center for Drug Prevention, Education and Monitoring as part of intercollegiate athletics.

In addition, the causal variables of the developmental systems model of drug prevention, education, monitoring and counseling will be developed as a program guide which includes organizational and program structures. The program structure also includes a model course of study. The program guide will include an evaluation component which includes both formative and summative evaluation. The program guide will conclude with a descriptive structure for establishing a "Center" for Drug Prevention, Education, Monitoring and Counseling within the Department of Intercollegiate Athletics. The final goal of the developmental system model is individual self-efficacy; the worth of the individual to learn and grow is extremely significant. Making decisions about drugs and the risks involved, based on a thorough and consistent understanding of drug use, is deemed the most compelling basis for this study. It is intended that the four components work in concert, drawing strength and credibility from each other. It is not only a

sequential process but a simultaneous one to enhance individual self-efficacy of the student-athletes.

Figure 2 (on page 51) shows the systems model of drug prevention, education, monitoring and counseling for individual self-efficacy. Although the term "prevention" has been used to mean a variety of things, it is generally accepted that substance abuse prevention is frequently aimed at all students, some of whom are experimenting with drugs and alcohol and others who are already using substances at levels or in ways defined as problematic (Ray and Ksir, 1993). Prevention as depicted in Figure 2 attempts to prevent the occurrence of a problem in the student-athlete population via punitive means reflective of existing laws and regulations.

The Education component is intended to provide more than information on drugs and their effects. It assumes that a problem with drug use can involve a complex psychological domain that needs to be addressed. One's knowledge as to the consequences of drugs may increase through a singularized approach of education but the multifaceted impact of this model goes beyond a simple longitudinal effect. Therefore the education component, in concert with the other components, considers a variety of etiological factors such as self-concept, social influence and peer pressure.

There is some evidence to support the notion that changes in law and punishment are not the best way to regulate drug patterns. However, in a health- and safety-necessitated venue like intercollegiate athletics, Monitoring is considered an effective intervention (Schlaadt and Shannon, 1986). Behavior consciousness is thus not assumed to be a totally individual commitment when health and safety factors and institutional integrity are involved.

The Support System Network (counseling) component falls under the rubric of affective instruction and collaboration and also entails a therapeutic dimension. A major objective for counseling is an integrated one; a gleaning of cognitive and affective experiences of individuals with opportunity to explore attitudes, clarify values and promote responsible lifestyles (Weiner, 1985). An important focus of the therapeutic and treatment referral system will be peer assistance and therapy group activities. The viability of this dimension centers on interfacing with professionally trained personnel, i.e., substance abuse counselors and sports psychologists, for example, as well as the contingency of Alcoholic Anonymous and Narcotics Anonymous organizational members who are envisioned to comprise the support system network. This term, counseling, frames not only basic drug counseling possibilities for identified clientele, but varied field (AA, NA), peer and awareness-

building programs addressing existing substance abuse problems in a tailored and timely way.

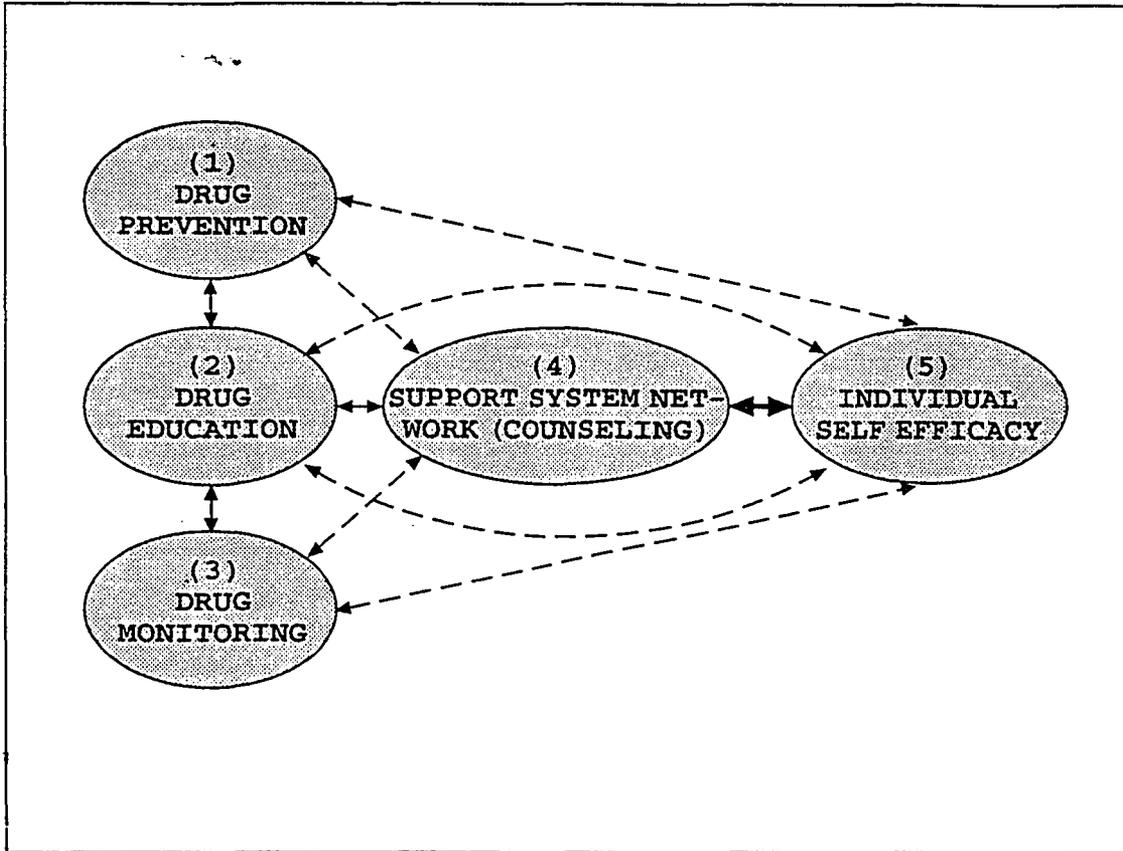


Figure 2. Systems Model of Drug Prevention, Education, Monitoring and Counseling for Individual Self-Efficacy

As a component, prevention is a societal dictate whereby governance--i.e., laws, regulations and policies--describe the parameters for people's behavior. It is clear the intentions of law are to prohibit abuse, protect and also safeguard people's rights. However, as an approach in this study, drug prevention is viewed holistically; that is,

it is an implementation of programming developing a person's self-image and life coping skills. By definition, prevention offers fewer allowances for wide tailoring; yet its contribution toward efficacy is still an expectation. In other words, not all who are convicted of a crime receive the same sentencing. An individual's history and situation are considered by the courts for determining the punishment (Avis, 1990). In the subsequent chapter, the facets of community awareness and involvement strategies will be elaborated, including peer, parent and community programs, personal and social values clarification studies, and continual evaluation mechanisms.

Drug education is a far-reaching, long-term perspective of this model. It is felt that drug education is far more effective as a positive, growth producing event in people's lives if issues about consciousness, responsible drug use, coping, the building of self-confidence and self-esteem are included in the major focus, rather than focusing only on the harmful effects of drugs (Bandura, 1982).

### **Individual Self-Efficacy**

Individual self-efficacy expectations, i.e., beliefs about one's ability to perform successfully a given task or behavior, are important modifiers in affecting behavioral change (Bandura, 1977). Of particular relevance to the drug education and prevention domains, ideas of personal efficacy

are believed to affect one's choice of behavior as well as degree of effort expenditure and persistence in pursuing difficult courses of action. Self-precepts of efficacy are concerned with judgment of one's ability to establish a given pattern of behavior (Kalsner, 1992).

In effect, individuals construct their own beliefs about themselves; therefore, they are the ultimate sources of self-concept change. In addition, because self-efficacy is assumed to have motivational effects, it seems especially relevant to a model for drug education, with basic expectations that general feelings of well-being heighten interest, effort and accomplishment (Kalsner, 1992). Students who have a strong sense of efficacy in a given subject or situation would be expected to exhibit strong achievement efforts. In contrast, students who perceive themselves as ineffectual will not be as likely to demonstrate sustained involvement in their pursuits (Lent, Brown and Larkin, 1984).

According to Bandura (1977) there are four main sources of information upon which individuals base their self-efficacy beliefs. Two of the most powerful sources are performance accomplishments and experiences of personal mastery. Bandura concludes that mastery and success raise expectations and are prime motivators of future successful experiences. The third source, shared or vicarious experiences, provide people with coping and mastery models

upon which to base their own actions. Observation is the fourth avenue of information. Seeing others perform tasks successfully raises expectations of personal successes on those same tasks. Bandura claims that self-efficacy beliefs, based upon past performance, observed models' performances, others' encouragement and even one's own emotions, affect an individual's willingness to attempt a particular behavior or to persist in that behavior as these beliefs increase or decrease.

Research in the last decade has been able to specify particular constructs associated with self-efficacy beliefs to detail specific ways to explain the process of change. Overall, definite links between self-efficacy and behavioral intentions, persistence and achievement have been documented in many studies.

Finally, the issues concerning substance abuse are so complex that it is anticipated that a paradigmatic model of drug prevention, education, monitoring and counseling is a way to grapple with the complexity, the depth and the growth of the problem in a holistic manner.

## Chapter 4

### Developmental Systems Model for Drug Abuse Prevention, Education, Monitoring and Counseling for Intercollegiate Athletics

#### Introduction

A Developmental Systems Model of Drug Prevention, Education, Monitoring and Counseling for Intercollegiate Athletics underscores the importance of addressing multiple dimensions in understanding and dealing with drug use behavior. This model proposes a "person-environment" approach. The dynamic interpenetration between the individual and the environment is perceived as crucial to the development and maintenance of behaviors that improve health and reduce drug use (Lewin). The environment context for this model encompasses the setting in which drug abuse may occur, namely intercollegiate athletics, campus and community mores that shape usage practices and legal sanctions, and controls and policy regulation that govern alcohol or drug availability and use on campus. The person context includes and suggests biopsychosocial susceptibilities to drug problems as well as an individual's knowledge about alcohol and drugs, attitudes and motivations that influence usage pattern, and drug use behavior itself. Both contexts are dealt with integratively in order that effective strategies may be emphasized.

### Efficacy as a Weapon Against Drug Abuse

With regard to drug abuse, changes in individual self-efficacy cause changes in behavior (Bandura, 1982). This is implicitly affirmed in the primary assumption of the powerful nature of individual perceptions. Research, on self-efficacy in education, particularly in the last decade, has been able to specify particular constructs associated with self-efficacy beliefs, detail specific conditions under which these beliefs are raised, and explain changes in efficacy as occurring from environmental conditions. It has led to increased awareness by individuals to manipulate conditions within the environment in their efforts to effect a prescribed behavior (Franken, 1988).

According to a recent publication (Ingram-Chinn, 1989), a new paradigm is emerging. That is, the idea that each academic organization or setting is in the best position to devise its own substance abuse model is a definite trend. Along with this trend to promote autonomy in governance of schools via individual school-based management, a site-developed substance abuse program has been deemed more effective because it promotes self-efficacy and empowerment and even avoids excessive formal and often inconsequential evaluations (Pinger, Payne, Hahn and Hahn, 1995).

For successful program planning, implementation and evaluation of a school-based substance abuse model by the academic organization or setting, it is expected that strong

feelings of self-efficacy among all those involved have to be present (Lent, Brown and Larkin, 1984). The modeling of efficacy among leaders, administrators and teachers can make true impact on students, especially if it is coupled with a substantive knowledge base regarding substance abuse education, monitoring and prevention. Counseling is the fourth component of the paradigm and will also be discussed in this chapter.

For the purpose of this study, the working definition of the components mentioned above are: Education--the knowledge and development gained from a concerted instructional process which includes a comprehensive curriculum or course conducted in the classroom setting. Monitoring--the act of testing for drug use and the observation of student-athlete behavior that may indicate the abuse of drugs. Prevention--the laws, regulations or rules dealing with punitive actions for drug abusers and the negative consequences of such behavior. Counseling--the professional counseling and guidance of the individual to modify behavior via psychological methods regarding drug abuse. This component will also consist of continuing educational programs dealing with the use and abuse of drugs.

#### Rationale of the Model

The rationale of this model is to improve individual self-efficacy. From a national perspective there has been

minimal realization to face the problematic features of this widespread issue. The national need is identified in the Drug-Free Schools and Communities Act of 1986:

- The use of drugs and the abuse of alcohol by students constitutes a grave threat to their physical and mental well-being and significantly impedes the learning process.
- The tragic consequences of drug use and alcohol abuse by students are felt not only by students and their families, but also by their communities and the nation, which can ill afford to lose their skills, talents and vitality.
- Drug abuse education and prevention programs are essential components of a comprehensive strategy to reduce the demand for the use of drugs throughout the nation.
- Schools and local organizations in communities throughout the nation have special responsibilities to work together to combat the scourge of drug use and alcohol abuse.

Given this inclusive mandate, the Developmental Systems Model for Drug Prevention, Education, Monitoring and Counseling suggests that developing strong individual self-efficacy is necessary for resistance to environmental and social pressures to use alcohol and drugs. Because of the

unique emphasis on interpersonal as well as personal environmental interaction, this model amplifies the role of both the individually focused and environmental interventions. It is, however, the belief in the tremendous worth of and optimism for a person's self-efficacy that empowers the efforts of this model (Weiner, 1985).

Self-efficacy influences behavior in all major areas of a person's life. Psychologists, for over forty years, have researched this area. Curriculum, school organization and climate, even classroom management practices have reflected self-concept and self-efficacy concepts (Lent, Brown and Larkin, 1984). Student self-concept is a common consideration of administrators, teachers and counselors for making educational decisions.

It has long been recognized that one's self-concept is a fluid entity, not a constant (Wylie, 1974). The various conditions under which self-concept changes have been described are based upon evaluation from culture and family, influential feedback and encouragement from significant others, successful experiences and comparison with others. Of particular influence is the individual's own assessment of information, feedback and experiences. The significant premise research findings offer is that since individuals construct their own beliefs about themselves, they are the ultimate sources of self-concept change (Wylie, 1974).

This notion has been a pervading concept for at least four decades. For years, the dominant model of self-concept change suggests that changes in self-concept precede meaningful changes in behavior (Snygg and Combs, 1949). The assumption that changes in self-concept lead to important behavior change has been further studied by various researchers (Shavelson and Bolus, 1981; and Purkey, 1970) and is grounded in expectations that general feelings of well-being will heighten accomplishment.

In his book entitled Control Theory in the Classroom, William Glasser states that nothing will change for the better in schools until educators and others understand that the stimulus-response theory--under which everyone including the Commission on Excellence in Education currently operates--is wrong. According to the stimulus-response theory, human behavior is caused by external events. An example would be that: a person stops at a traffic light because it turns red.

By contrast, the major premise of control theory is that all human behavior is generated by what goes on inside the behaving person. Therefore, a person stops at a traffic light not because the light turns red, but because the person says, "I want to stay alive." In other words, all that we get from the outside world is information. We then choose to act on that information in the way we believe is best for us.

According to Gellerman, making our self-concept real is a life-long pursuit. We try to make our subjective ideas about ourselves into objective truths. When our experiences seem to be confirming those ideas, we are likely to feel that life is good, and the world is just, but when we are denied the kinds of experiences to which we feel entitled, we are likely to suspect that something is drastically wrong with the world.

The ultimate purpose of any individual then is to make self-concept or self-efficacy real by being himself or herself, to live in a manner that is appropriate to one's preferred role, to be treated in a manner that corresponds to one's preferred rank and to be rewarded in a manner that reflects one's estimate of his or her own abilities.

Motivation, as we commonly use the term, is our speculation about someone else's purpose, and we usually expect to find that purpose in some immediate and obvious goal such as money or security or prestige. Yet, the particular goals that people seem to be striving for often turn out, on analysis, to be the instruments for attaining another, more fundamental goal. Thus, wealth, safety, status and all the other kinds of goals that supposedly "cause" behavior are only paraphernalia for attaining the ultimate purpose of any individual, which is to be himself or herself.

## Basic Components of the Model

While each of the basic components will be addressed individually, the premise is that the components, when combined, provide a comprehensive and collective plan to improve individual self-efficacy and should not be seen as autonomous components.

### **Education Component**

One of the primary purposes of higher education is to help students become more self-directed in their learning and other behavior. The education component of this model is framed with that premise in mind. It does not mean that one is totally independent, rather it means that one takes responsibility for one's own actions and development in regard to relationships and responsibilities toward others. Self-direction requires both clarity of purpose and the competencies or skills essential to achieving desired goals (Ray and Ksir, 1993).

The educational climate of an institution is extremely important in fostering self-directed learning and other self-directed behavior (Carver and Sergiovanni, 1969). Obviously, opportunities for choice and experimentation, testing oneself, experiencing failure, and overcoming setbacks are essential; we seldom learn how to learn and how to function in self-regulating ways by only being required to follow other people's rules. But other elements are also

important in fostering self-direction. The educational environment must be one in which students feel that others care about them and their welfare, one that encourages mutual trust, respect and open dialogue between students and administrators and faculty (Carver and Sergiovanni, 1969).

To address the escalation of substance abuse on college campuses, the task continues to lie heavily in developing educational programs and strategies that assist in enabling students to see a future without the need for, or reliance upon, substance abuse. While the aim of prevention education can best be done through the joint efforts of the education, mental health and medical communities, the highest tenets of this model are advanced through the long-range aims that education provides. Likewise, the University of Hawaii clearly sees its role as an institution acting as a preventive agent against drug abuse (Internal Management Regulation and Procedures for Drug Education and Testing of Student-Athletes at the University of Hawaii at Manoa, 1987).

In order to provide a comprehensive base for work, we must first make the necessary distinctions between and among individuals and their degree of substance abuse. In order to clarify and build on this base, the parameters defining education and their content levels are defined as follows: **primary education** is defined as educating individuals on substance abuse who have never used drugs previously;

**secondary prevention education** as education and prevention of substance abuse with individuals who have experimented with chemicals and alcohol, and **tertiary prevention** is defined as prevention of continued substance abuse with individuals who are actively involved in using drugs (Strauss, 1988). In essence, the education component deals with educating prior to abuse; educating during early stages of abuse, and educating during the latter stages of abuse.

Programs have credibility for students based on their own individual frame of involvement. For example, a significant and meaningful program for a non-user may be related to the effect of drug abuse on learning performance whereas the heavy user may require more information on the treatment process.

In general, course work should include information on: psychoactive drugs and their effects, drug regulations, education and rehabilitation programs and psychosocial variables related to the decision to use drugs (Pascale and Streit, 1972). The general goal of the course is to provide students with knowledge and skills to cope with the increasing problem of drug abuse in our society. Course work should be at least three semester credit hours. A specific sample course outline for the education components may be found on pages 105-120. Augmentation in forms such as seminars, workshops, conferences or a continuing education format will provide updated information on drug abuse.

## Monitoring Component

The monitoring component mainly encompasses drug testing as mandated by the National Collegiate Athletic Association. Mandated drug testing rules passed by the NCAA have created more interest than any other regulation passed by this private governing body. The legal issues that surround the drug testing practice are discussed in order to establish the framework for the monitoring component of this systems model.

There are two major areas of legal concerns which involve pertinent sections of the Constitution of the United States and the State of Hawaii. Under federal constitutional law the relevant sections are the fourth and fourteenth amendments. In general, the fourth amendment prohibits unreasonable search and seizure in fulfilling each citizen's expectation of privacy. Specifically this amendment states, "The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon probable cause, supported by oath or affirmation, and particularly describing the places to be searched and the persons or things to be seized."

The fourteenth amendment guarantees to each citizen equal treatment under the law and the right to "due process." More specifically, the appropriate language

reads, "Sec. 1. All persons born or naturalized in the United States and subject to the jurisdiction thereof, are citizens of the United States and of the state wherein they reside. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws."

Other U.S. constitutional concerns may arise regarding provisions of the fifth and sixth amendments. The fifth amendment provides protection against self-incrimination, and the sixth affords each citizen the right to legal counsel and a speedy trial. These provisions do not affect our monitoring process because it is designed to be supportive, not punitive, in nature. Therefore we will not be dealing with courts of law. Monitoring records may be subpoenaed by court authorities, hence self-incriminating information not germane to the success of the program should not be made a part of the record (Ching, Robb and Gething, 1994). Other federal and state laws, specifically the Family Educational Rights and Privacy Act or state individual rights to privacy, do not apply (Ching, Robb and Gething, 1994).

All states have enacted legislation to protect in varying degrees the citizen's rights to privacy and due

process similar to that of the U.S. Constitution. In Hawaii, article 1 of the State Constitution is referred to as "the Bill of Rights." The pertinent sections read:

Section 2. Rights of Individuals. All persons are free by nature and are equal in their inherent and inalienable rights. Among these rights are the enjoyment of life, liberty and the pursuit of happiness, and the acquiring and possessing of property. These rights cannot endure unless the people recognize their corresponding obligations and responsibilities.

Section 5. Due Process and Equal Protection. No person shall be deprived of life, liberty or property without due process of law, nor be denied the equal protection of the laws, nor be denied the enjoyment of the person's civil rights or be discriminated against in the exercise thereof because of race, religion, sex or ancestry.

Section 6. Right to Privacy. The right of the people to privacy is recognized and shall not be infringed without the showing of a compelling state interest. The legislature shall take affirmative steps to implement this right.

Section 7. Searches, Seizures and Invasion of Privacy. The right of the people to be secure in their persons, houses, papers and effects against unreasonable searches, seizures and invasion of privacy shall not be violated.

Section 8. Rights of Citizens. No citizen shall be disenfranchised, or deprived of any of the rights or privileges secured to other citizens, unless by the law of the land.

In general, the provisions of the United States Constitution are articulated in rather broad statements, and that of the state constitution are rather specific, especially those of the State of Hawaii.

For instance, Sections 2, 5 and 8 relate back to the Fourteenth amendment of the U.S. Constitution and Section 7 relates back to the Fourth amendment. The exception is Section 6 of the Hawaii State Constitution. The U.S. Constitution does not have an expressed specific provision for a right to privacy but instead must rely on a variety of amendment provisions to equal a right to privacy statement, as in Roe v. Wade; or Griswold v. Connecticut; Section 6 of the Hawaii State Constitution is specific in articulating an individual's right to privacy and constitutes major concern when developing policy and procedures governing drug testing programs.

The athletic drug testing policy and procedures document should reflect the philosophy of the institution and take into consideration any legal issues, moral/ethical concerns and the viewpoints of constituent groups. It is probably best to establish the understanding that athletic participation is a privilege rather than a right of students. It is a privilege that is earned via a comprehensive review of the student-athlete's performance in play and practice as well as the fulfillment of academic requirements and good citizenship. Therefore, when these responsibilities are satisfactorily met, the privilege of representing the institution is earned.

To comply with the legal requirements, namely the individual's right to privacy and due process, the following justification is offered:

Regarding rights, the fourth amendment promises to athletes, like everyone else, that they will be left alone unless they raise suspicions of guilt. It forbids any intrusions on human dignity and privacy on the mere chance that incriminating evidence might be obtained. Since medical procedures--including urinalysis screening--may be regarded as a personal search capable of revealing incriminating evidence, the modern athlete should understand what the fourth amendment does and does not permit relative to personal searches.

The fourth amendment protects against unreasonable searches and seizures. Hence, the central issues regarding the legality of drug testing of athletes revolves around the question: Is it reasonable? Since there can be no precise definition or mechanical application of "reasonableness," this becomes a complicated issue involving a balancing of the need for the search against the invasion of personal rights.

With reference to the reasonableness criteria, two types of searches have been allowed: (1) a search conducted pursuant to a warrant authorized by a detached magistrate and based on probable cause that a violation of law has occurred, and (2) a warrantless search conducted pursuant to public interest and safety. Drug testing would fall in the warrantless search category.

One type of warrantless search (called an administrative search) permits the personal searching of people at airports, the borders of our country, and at the entrance to courthouses and prisons. The Supreme Court has also ruled that administrative searches are reasonable in the sport of horse racing. For example, the State of New Jersey conducts an administrative search in which jockeys are required to submit to daily Breathalyzer and random urine tests. In this case, the courts ruled that public interest in maintaining the

integrity of a highly regulated sport outweighed the right of individual privacy.

In order for colleges and universities to make good on the claim that drug testing of athletes is reasonable, at least three requirements pursuant to an administrative search would have to be met:

- The testing college or university would be required to justify the claim that intercollegiate sports-- by their nature, conduct and regulation--result in reduced privacy expectations for the athlete.
- The testing college or university would be required to identify a strong public interest in making testing imperative and to justify drug testing as a necessary condition for participation in sport.
- The testing colleges or universities would be required to make good on the claim that they were unable to identify a less intrusive alternative mechanism by which their objective(s) might be achieved.

Regarding these requirements, the modern athlete should be familiar with the following four arguments that are currently offered in favor of drug testing athletes as an administrative search:

**Argument One:** The drug testing of athletes is "reasonable" because there is a strong public interest in whether athletes are performing in full health. If the outcome of intercollegiate athletic contests were of no interest to anyone other than the players, if these contests were conducted in private, if no tickets or television rights were sold, if the behavior of athletes did not reflect upon the institutions that they represent, if these institutions were not held responsible for the health and safety of athletes, then drug testing clearly would be a violation of fourth amendment promises. A good argument can be made for a strong public interest in how hard athletes try and whether they perform in full health.

**Argument Two:** The drug testing of athletes is reasonable because intercollegiate sports are pervasively regulated and participation is a privileged choice. As an athlete, one receives, among other special considerations, immediate and first-rate health care; special academic advising and tutelage; room and board; public visibility and travel opportunities; and for a small number, the chance to go on to professional sports. These are privileges not available to non-athletes. However, in company with these privileges, the athlete should clearly expect a reduction in privacy. This is because intercollegiate sports are pervasively regulated: e.g., training rules, including bed checks; training tables; frequent medical examinations; grade checks to determine eligibility; conference regulations; NCAA regulations; and a set of rules that govern the conduct of athletic contests.

**Argument Three:** The drug testing of athletes is "reasonable" because the aim of the drug testing is to return the athlete to health rather than to collect evidence that is legally incriminating. Obviously this argument does not apply for those drug testing programs that specify punitive actions against athletes. However, a good argument can be made for an exception to privacy when the sole aim of drug testing is to return the athlete to health. In such programs, colleges and universities must agree to not voluntarily supply personally identifiable test results to any agency or person not connected with the health of the athlete. The results of a search legitimized for health reasons should not thereafter be used for punitive reasons.

**Argument Four:** The drug testing of athletes is "reasonable" because a college or university must reserve the right to conduct upon its athletes whatever test it deems necessary to the protection of health and safety. Good athletic programs require that all athletes be medically certified as fit for competition, be appropriately conditioned for competition, be outfitted with the appropriate safety equipment, and be provided medical supervision. Moreover, good athletic programs demand that athletes be disqualified from competition whenever in the judgment of health authorities their continued participation would constitute a threat to health.

To ensure informed judgments regarding the welfare of athletes, health officials must not be denied the use of any important diagnostic test, no matter how intrusive it might seem. And drug testing should be viewed and treated like other medical procedures. The argument reduces to this: to prohibit the use of an effective screening test could clearly hamper the efforts of health officials to protect the health and safety of athletes (Burt, 1987).

These justifications clearly satisfy the requirements of the "privacy" amendments and address most of the "due process" and "equal treatment" conditions. Regarding the latter, a comprehensive drug testing policy and procedures document completely detailing the program, with its philosophy, expectations and consequences clearly articulated and explained to each student-athlete, will satisfy the "due process" requirements. Compliance with the equal treatment provisions can be easily met, merely by testing all student-athletes.

This stance is taken by the University of Hawaii as documented in the "Internal Management Regulation and Procedures for Drug Education and Testing of Student-Athletes at the University of Hawaii at Manoa" (1987, see Appendix).

Due to financial constraints some institutions are electing to utilize random testing sampling techniques. Other institutions elect to use randomly scheduled testing times. Neither practice supports the philosophy of this model. Random testing utilizing sampling techniques will not comply with the equal treatment provision. Should the

random sample consisting of the widely accepted 23 percent of the total population return even one positive test, the assumption is that there are at least three others who could possibly return positive tests and who cannot be identified. Therefore, if testing is being conducted for health and safety reasons, those additional student-athletes who may represent a danger to themselves and the competition should be sought by population testing. Randomly scheduled testing times are usually equated with programs oriented towards punitive actions for positive tests. Randomly scheduled testing time reflects the "pessimistic" view of the nature of man and is in direct conflict with the philosophical foundation of this model.

Another strength of the monitoring component of this model is the actual testing procedures. In addition to the accuracy of the tests employed, a comprehensive chain-of-custody procedure for the testing samples must be developed. To make drug testing accurate and cost-effective two processes are employed. The first is a relatively inexpensive drug screen to "flag out" possible substances of abuse, and the second process will be a confirmation of the suspected substances of abuse (SmithKline Beecham Clinical Laboratories, 1988). Much concern exists over the possibilities of false-positive screening returns, therefore it is recommended to use only drug testing laboratories that have received federal certification from the National

Institute on Drug Abuse (NIDA) and the following testing procedures (Falco, 1992).

The drug screen currently used and recommended is the Enzyme-Multiplied Immunoassay Technique (EMIT), a relatively inexpensive drug screen that will "flag out" not only substances of abuse but also those that "act" like these controlled substances but are approved for use. The EMIT process is used in assaying for drugs in various biological fluids. The components of the assay include reagents consisting of (a) an antibody prepared against the drug and (b) an enzyme labeled drug. The principle of the assay is that when a biological fluid containing the suspected drug is mixed with (a) and (b), the drug and reagent (b) compete for binding with reagent (a). After this step, a specific substrate is added which is converted to a product by the free (b). The product is quantified. The enzyme activity decreases upon binding to the antibody, so that drug concentration in the sample can be measured in terms of enzyme activity, as measured by product formation (Bhagavan, 1994).

Situation 1: No drug in the biological fluid.

Antibody + Enzyme-Drug + Substrate = Product is not formed

Situation 2: Drug present in biological fluid.

Antibody + Enzyme-Drug + Drug + Substrate = Product formed in proportion to drug concentration

Should a prohibited substance be identified in the urine sample a repeat EMIT test is performed on another portion of the original sample. If this test is again positive, the remaining abstract of the original sample will be used for confirmation testing by gas chromatography/mass spectroscopy (GC/MS). This hybrid technique is the only confirmation process recognized as unequivocal by courts of law. In essence, GC/MS analyses complex chemical mixtures. When the sample (after the appropriate pre-treatment to render the components volatile) is injected into the gas chromatograph consisting of a long column containing a solid stationary phase and a mobile gas phase, the volatilized sample components distribute themselves between these two phases as they pass through the column and, since individual components will spend different times in the two phases, they separate as they progress. Hence the GC achieves the separation of the mixture and as each component exits the column it is injected into the mass spectrograph. The MS operates by ionizing the sample molecule and then propelling it into a strong, curved magnetic field. The particular path the charged sample molecule takes in this magnetic field is related to its charge-to-mass ratio. By varying the magnetic field, one can determine which field strength is required for a given sample molecule to reach the detector placed at the exit port. One can then accurately determine the mass of the sample molecule as well as the mass of the breakdown products of this molecule. These masses allow one to accurately determine the exact molecule which entered the MS. Hence, the GC/MS combination allows one to rapidly and accurately identify the components in a complex mixture. In the event a confirmed positive is received, the student-athlete is then referred to a certified drug counselor for assessment and treatment (Bhagavan, 1994).

### **Prevention Component**

For this model, the goal of prevention is behavioral changes not only for the individuals involved but for the institution itself. Guided by legislation which is intended

to help society become more proactive about promoting individual responsibility with regard to drug abuse prevention, this component has harsher deterring criteria than the other components of education, monitoring and counseling. The common forms of punishment mandated and enforced by courts of law have included incarceration, in many cases with participation in community service work and rehabilitation programs as attendant measures.

The establishment of laws and regulations to counter drug abuse has been a cogent force in our society for many years. Even before the 1906 Pure Food and Drugs Act, a milestone regulation in itself, many states and local communities had laws regulating sales of drugs. For over 85 years then, the notion that intervention through laws can prevent substance abuse has prevailed (Bachman, O'Malley and Johnston, 1984). In broad terms, the primary goals have been the regulation of the manufacture, sale and consumption of drugs. While there has been consensus on the reasons for drug legislation, each state has its own laws on the use and misuse of drugs. It has become virtually impossible to describe all the varied drug laws that exist in all 50 states. For example, some states define as a special crime the smuggling of intoxicating drugs into a jail or prison. Several states have decriminalized possession of marijuana by making it a civil offense punishable by a fine. Other states have toughened their drug laws or passed special laws

to deal with special problems, such as the sale of kits to convert cocaine to its freebase (Ray and Ksir, 1993).

Since laws differ from state to state and between countries, those actually involved or working in the field have had to become familiar with statutory law as it is applied locally. Moreover, new legal precedents are constantly being set in this rapidly developing field so what is applicable today may quickly be reversed.

Volatility aside, a review of the Hawaii Penal Code seems to reflect some compelling changes, i.e., stricter enforcement against the distribution of drugs. According to HRS Supplement 1992, the following are examples of the present legislative posture with respect to punitive action toward drug abuse:

- Act 83, Session Laws 1987, amended 712-1221 by changing the one day period to seven days because there were difficulties with proving promotion of gambling within a one day period. The extension of the time period would also allow for more effective law enforcement pursuant to this section.
- Act 83, Session Laws 1987, amended 712-1222 by making changes to this section for the purpose of conforming with 712-1221. Conformity was desired with 712-1221 so that if there is insufficient evidence to prove the first degree offense, a person could be found guilty of the second degree offense.
- Act 163, Session Laws 1989, added 712-1246.5 and amended various sections in this part to reduce the quantity of dangerous and harmful drugs required for conviction of the crime of promoting such drugs to provide law enforcement

officers a much needed tool in the war on drugs.

- Act 384, Session Laws 1989, added 712-1246.5 and amended various sections in this part to provide stiffer penalties for the promotion of marijuana and similar substances in furtherance of the war against drugs.
- Act 314, Sessions Laws 1986, added 712-1249.5 to make commercial growing of marijuana a crime and a class B felony.
- Act 284, Session Laws 1988, added 712-1249.6 which makes the promotion of a controlled substance in or around a school a class C felony. This section will give law enforcement officials the power to conduct investigations of drug dealers who operate in the vicinity of the schools.
- Act 11, Session Laws 1991, amended 712-1249.6 by prohibiting distribution of possession of drugs on or near school vehicles. The legislature felt this measure would ensure that the drug free school zone law would not be easily circumvented and drug dealing on buses or at bus stops would be discouraged.

While the merits of prevention through legislation have been debated, laws are mechanisms by which people realize and acknowledge the consequences of substance abuse. Although the research on state laws on drugs reflects much variety, there are some commonalities. For example, most states treat prescription drugs in a consistent way and have adopted some form of the Uniform Controlled Substances Act of 1970. Another commonality is the tougher penalties imposed for drunken driving situations. The overall effort and costs of combating drug abuse through preventative-type

laws seem to home in not only on the user who abuses but also on the dealer who corrupts. Related to the distinct parameters governing national and local laws, the prevention focus on college campuses has also clearly leaned toward punitive measures (Neff, 1983). Student-athletes participating in all sports are required to undergo drug tests from time to time, and those who test positive are suspended or dismissed from the team. Prevention, as a Theory X approach, has dictatorial and enforcing functions which, in view of the stricter and more binding laws, have their place in the model from a purely global perspective today. That is, there is a rigidity to laws, regulations and policies but it is a universal component.

#### **Counseling Component**

As an important support service, the counseling component is focused on students' concerns regarding academic, personal and social perspectives. The myriad emotional, academic, financial, social and cultural problems confronting substance abusers on a college campus require professional attention. The trained counselor is essential in the success of self-efficacy. The development of educational and counseling programs and the establishment of institutional policies designed to inform students about the effects of drugs and their negative consequences are the main objectives of the counseling component (Lanning, 1982).

Twenty-five years ago, the idea of a counselor using a number of programs and activities to facilitate disclosure, acceptance and abstinence held little promise for success (Lanning, 1982). It was believed then that "the counselor in business and industry is asking management to let him identify a disease that has not really been defined, to treat a victim who really does not want to be treated, and to educate a population that really does not want to believe that the disease exists" (Dorris and Lindley, 1968, p. 56). The situation has since improved; programs proliferate under various names such as employee or student assistance, occupational health services and guidance and counseling. Today, counseling is considered a mainstay of drug abuse programs inasmuch as individuals respond differently to rehabilitative efforts.

The primary areas of this model, provide services along a continuum of care that helps insure reaching all students, not just those exhibiting problems. Along with the growing accent on wellness among students and staff, decline in either job or academic performance has been an indicator for counseling or treatment program interventions (White, Richardson, and Jorgensen, 1987).

Increasing self-awareness, which includes awareness of alternatives, motivations, factors influencing the person and personal goals, is an aim for counselors working with this model. For the student-athlete, participating in

counseling, albeit frequently and forced, initially, offers a two-fold rationale that (1) the chance that drug abuse is "nipped in the bud" before severe deterioration develops is definitely possible and (2) the person is highly motivated by the desire to continue participating in athletics (Anderson and McKeag, 1985). Hence, the prognosis for success of the client is much higher with the presence of major incentives.

Counseling entails more than a professional and an abuser talking at arranged times. A policy and a program are the two essential elements for a successful counseling dimension (Ryan, 1984). A policy without the counseling program is not effective; similarly, a counseling program without a firm policy to guide its functions is not likely to succeed. Within the scope of policy for this model, chemical dependency, including alcoholism, is viewed as a treatable illness, entitling student-athletes to an opportunity to get help and also to help themselves without stigma or severe penalties. It encourages the individual's voluntary use of counseling programs (Pinger, Payne, Hahn and Hahn, 1995).

The counseling policy would state that there is no intrusion on the private life or personal habits of the student-athlete based on the global premise that first and foremost he/she is an adult with choices. As a human services specialist, the counselor will work with clients

using the denominator that the person who becomes drug free is a better candidate for performance in all aspects, whether on the playing field, on the job or in the classroom. Finally, the policy on counseling interventions must be clear that the avenues for firm and consistent action will always be available for the participants and that the importance of the person is foremost, so the individual must be committed to act for his/her own good (Ryan, 1984).

Besides the overall belief in rehabilitation from substance abuse, the counseling component is viewed as a cost-effective measure. Research conducted on organizations employing prevention and intervention programs overwhelmingly shows that the success rates through employee rehabilitation were net gains (Royce, 1981). For business and industry, concerted efforts by counselors to advise, monitor and intervene if necessary, have reduced lost hours of work, diminished efficiency or half work on the job, wasted time of supervision and discipline, excessive sick leave benefits, costly errors and accidents. It is clear that the question is not whether hiring trained professionals to help abusers deal with their problem is a priority but how costly it would be not to provide such an avenue for rehabilitation. This concept is becoming more evident on college campuses where substance abuse has become an administrative problem.

Supportive system networks, which are essentially counseling programs, have the responsibility of creating a positive learning and social climate on campus for all students. This commitment can be shown by the creation of interesting social and academic activities in which the focus is on creative participation rather than solely on alcohol or other drug consumption, through the promotion of wellness concepts for the campus community and through an institutional approach of fair, consistent and active enforcement ("Substance Abuse Treatment," 1993).

Nationally recognized substance abuse programs normally contain three main elements among other criteria.

The first element is a commitment to the empowerment of students. Data from the 1990 CORE survey of more than 56,000 college students nationwide show that 33% would prefer not to have alcohol or other drugs available in the campus social life. This information is startling, particularly because in equity terms, there are very few institutions today who are actively involved in counseling support programs.

The second element is understanding drug use from a proactive stance. Being proactive and emphasizing support, counselors must strive for win-win activities and events such as Al-Anon "common bond" student groups (Alcoholics Anonymous, 1976).

Finally, successful models are coordinated and implemented by strong counseling professionals who endorse necessary and appropriate intervention referral activities to support in-house programs. Those support networks that are effective have usually included participation by students, faculty and staff led by knowledgeable program leaders ("Walk the Walk and Talk the Talk," 1992).

A comprehensive, institution-wide systems model for drug abuse prevention, education, monitoring and counseling should include, but is not limited to:

- the development of a strong, administratively supported policy that includes sanctions on drug abuse
- a longitudinal assessment of drug use on campus
- the creation of structures and procedures that make institutional policy meaningful
- the definition of the responsibilities of faculty, staff and students in helping to reach and maintain goals prescribed by the model
- the delineation of sets of activities designed to bring about desired behavior changes in abusers

The following key characteristics of effective drug-free schools in the United States should also be considered (Flaco, 1992):

- recognize, assess and monitor the problem
- interact and build a network with community groups and agencies
- set, implement and enforce policy
- determine curriculum, select materials, and teach the prevention curriculum
- train administrators, professors and support staff and create/reinforce positive role models for students/student-athletes
- involve students in drug-free activities
- promote parent involvement and provide parent education (at all levels of education--lower and higher)

The tangential outcome of this model would be to provide a drug-free campus where the entire campus community is informed of the dangers of drug abuse in the college setting through an on-going drug-free awareness program.

Figure 3 (on page 86) shows the integrative paradigm of the Developmental Systems Model of Drug Prevention, Education, Monitoring and Counseling. The integrative and interpenetrative aspects of the various components emphasize the importance of systems--the whole is greater than the sum of the component parts.

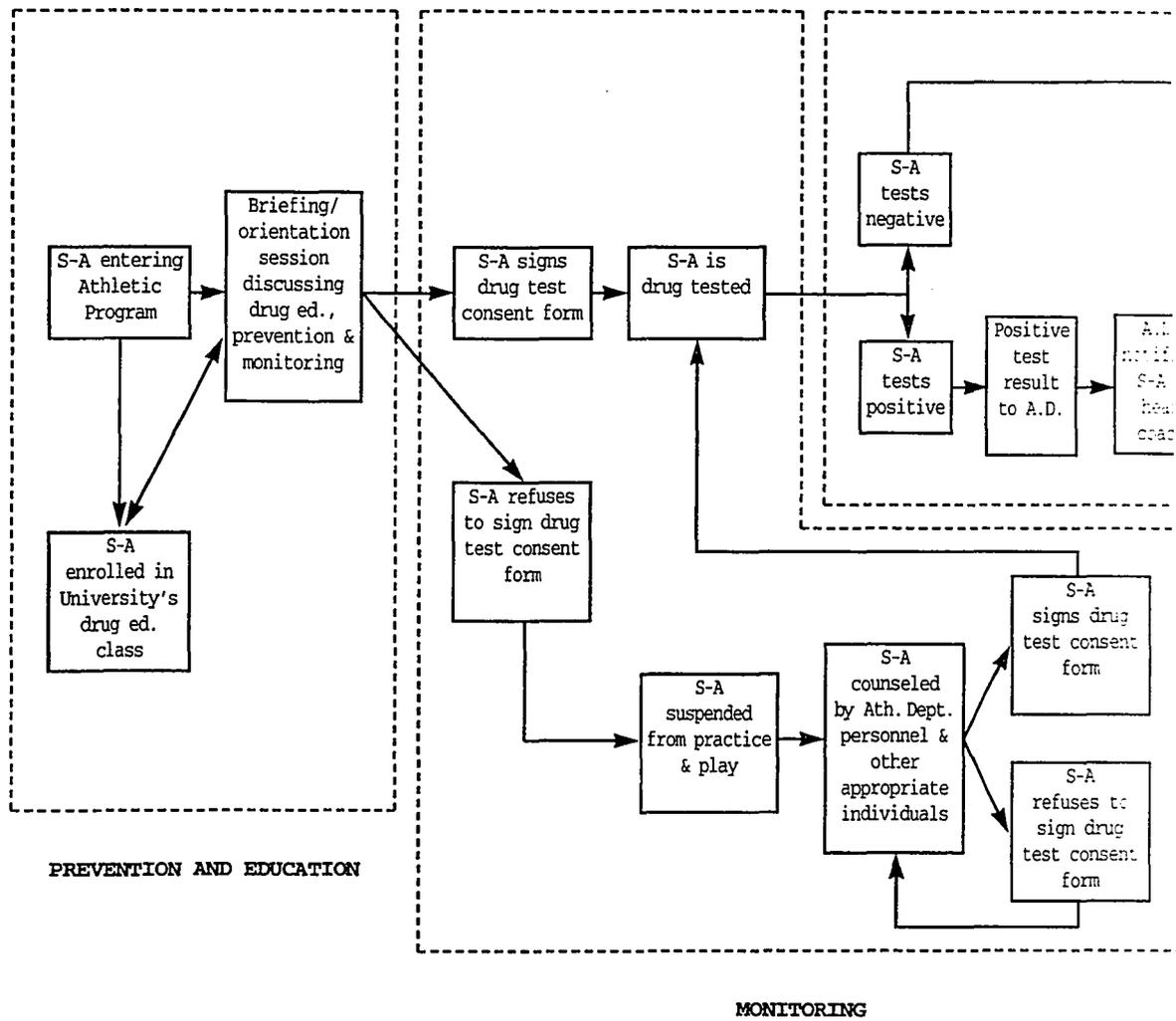
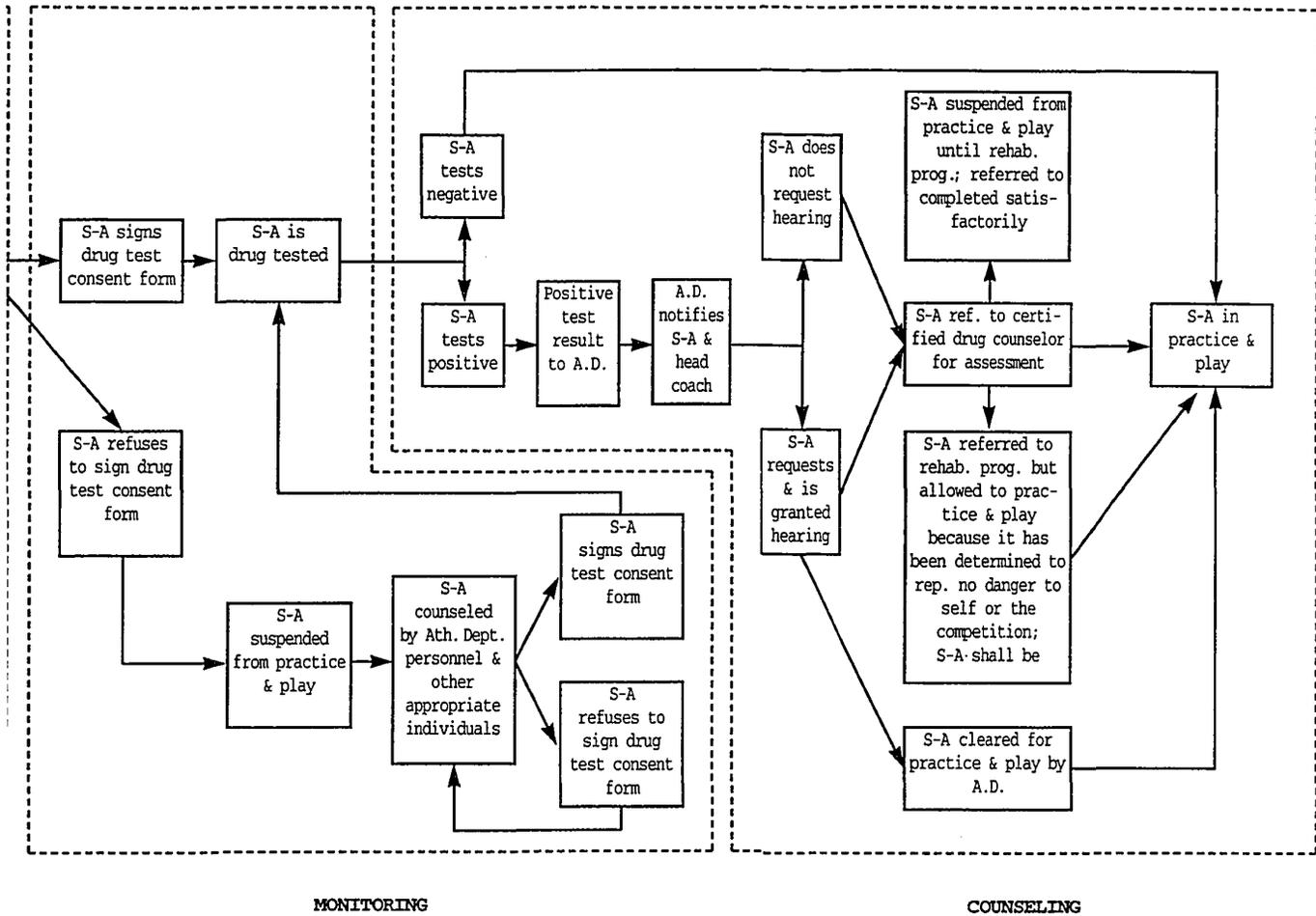


Figure 3. Integrative Paradigm of Developmental Systems Model of Drug Monitoring and Counseling





Paradigm of Developmental Systems Model of Drug Prevention, Education, and Counseling



The purpose of this model was the development of a systems approach to dealing with substance abuse. It includes the prevention, education, monitoring and counseling components with an intended output of enhancing the intercollegiate athlete's self-efficacy. The comprehensive or systemic linkage established through the implementation of the model is a process through which the components relate to one another for the purpose of achieving the common objective of efficacy.

Inasmuch as the desired outcome is behavioral change, the paradigm identified on page 86, reflects a social systems theory base with specific alignment to the behavioristic focus of people. Intercollegiate athletics is composed of a multitude of social systems within this paradigm. Some are formal, such as the administration or student advising department, and others, such as peer groupings, are informal. The paradigm is based on the premise that human beings operate within an ever-changing perceptual field, and these are signified by their beliefs, norms, expectations of others, motivations and attitudes.

The Hawthorne Studies, predecessor to the Likert and McGregor schools of management, established human relations as the new approach to worker motivation as far back as the 1930's. Several important assumptions were derived from this study: 1) job satisfaction, e.g., high morale, and positive work attitudes result from good working conditions

and even economic rewards; 2) high levels of job satisfaction result in higher productivity; and 3) organizations that provide rewards will have employees who exhibit a high level of job satisfaction.

In addition, assumptions were made that people would be stimulated to higher levels of effort if they had a voice in determining the nature, content and climate of their work, along with the added job challenges. Motivation, by and large, became an emerging entity and fully entrenched under the social system approach where it was viewed as a product of learned behaviors rather than tied to physiological or biological needs.

Sixty years later, the development of this Model for Drug Prevention, Education, Monitoring and Counseling for college student-athletes is based on the assumptions resulting from the earlier Hawthorne study and the theories espoused decades ago by Douglas McGregor and Rensis Likert as follows:

- 1) A holistic and integrated model heightens awareness and analytic opportunities for students to make responsible choices when faced with opportunities for drug use.
- 2) A holistic and integrated model is pragmatic in philosophy and by theory, a behavioral-humanistic approach which should enhance the student-athlete's ability to make intellectual judgments

and behave within individual as well as societal parameters. In addition, a student-athlete will be able to learn or incorporate for him/herself the ability to sustain and strengthen his/her self-efficacy.

- 3) Program components will accommodate the need for participants, student-athletes, administrators, faculty and others to develop greater awareness of combatting the basic problems underlying drug use and abuse.
- 4) The strategies utilized to effect the model will impact the goals of preventing drug abuse as well as eliminating and reducing drug use.
- 5) The drug problem may be, in part, a result of misinformation as opposed to flagrant or unconcerned rejection of facts.

As a utilitarian-type developmental model, the component areas have a results-oriented focus. Amongst the components, prevention has the most defined boundaries and activities. Regardless of the institution using this model, its dictates will be the legal system. National, state and institutional laws and regulations bind the programs. The paradigm is an interrelated model, however, while the prevention component is one of governance more than one of flexibility and creativity. Its impact on the model itself and the other components is far-reaching due to compliance

and vigilance factors, and every component of the paradigm is underscored by necessary legal awareness.

It is in the education component that programming objectives are fulfilled through targeted activities, such as drug education courses, wellness and nutrition workshops, genetics and physiology seminars and others. As institutions are a formative influence on students, so are they a logical environment for drug education. Drug education programs under this component are intended to increase student-athletes' awareness of the effects of drugs and alcohol as well as focus in a holistic manner on reasons for their use, exploration of alternatives to using substances and increasing resistance to peer pressure. Immersion of physical fitness and health promotion features appropriate activities such as education sessions on health and fitness, risk reduction, stress management and proper nutrition, which provide comprehensive strategies that are educationally based but overlap into the monitoring and counseling components.

Drug testing of student-athletes is designated as an intervention strategy in the monitoring component of this model. In mandatory drug testing, the issue or concern for the health and safety of the participating intercollegiate athlete is foremost (White, Richardson and Jorgensen, 1987). This activity is strictly bound by NCAA regulations and is deemed an intervention because it has punitive actions for

those who fail the tests. The rationale for mandatory testing, according to this model, is that fairness and equity in competition while maintaining the health and safety standards of student-athletes are a necessity.

While some institutions may find they have little option other than punishment or dismissal for their student-athletes with respect to drugs, steroids and alcohol abuse, this model attempts to generate campus and community-based alternatives for ongoing work with drug- and substance-abusing student-athletes. The counseling component is concerned with the decision-making process and the informational and professional support available. Its main thrust is to offer factual and unbiased information along with skills development involving coping, decision-making and self-concept.

The counseling component also recognizes that ameliorative efforts reflected by the use of the law and retribution as deterrents and educational programs generally focus on consequences. A drug counseling component is dynamic as it strands biological, personal and social considerations in working with and through an individual's problems. It has a process-oriented focus and expects to deal with social and personal issues surrounding drug use, decision-making, legal consequences and coping skills. Its alliances with community resources that can provide drug information and assistance with drug problems are viable

mechanisms. The component is seen as collaborative and enhancing. Thus, for those student-athletes whose need is more one of support and validation, participation in group work at the campus or community level is considered an effective alternative. Counseling networks also provide opportunities to educate and encourage student-athletes to assume an active responsibility for their own well-being.

Self-efficacy as the output of this model is premised by the notion that student-athletes' interactions with the college environment have a significant influence on subsequent self-concept development. As mentioned earlier, the components in the paradigm are not mutually exclusive. However, it is recognized that the efficacy of each component, especially when viewed separately, is disparate. The efficacy of monitoring, with its drug testing activity, had been evaluated as intrusive and suspicion-oriented. Yet, when viewed within the total paradigm, it strengthens the implementation of the model as institutions have to deal with transgressions, however occasional.

There are many variables which influence efficacy. These are rooted in self-esteem development, i.e., how people develop a feeling of worth or lack of it. The literature points to four variables in particular that are influential to one's self-concept, self-esteem and self-efficacy: 1) the physical, 2) social factors, 3) the intellectual and 4) the spiritual/moral issues. The flow of

influences between the components--prevention, monitoring, education and counseling--is systemic; each influences another which in turn, influences back. In an institutional setting where this model is implemented, the variables mentioned are prominently exhibited through program impacts.

From a theoretical perspective, efficacy is viewed as a viable output because it is solidly anchored to the psychosocial perspective that people have within themselves an empowering factor that maximizes the possibility for positive change (Stogdill, 1959).

Program Guide to Drug Prevention, Education, Monitoring and Counseling for Intercollegiate Athletics

The United States Department of Education's recent report to Congress on drug-prevention education found that there is little evidence to challenge the basic premise that prevention is the most humane and cost-effective response to drug and alcohol abuse and related problems among youth (U.S. Departments of Education and Health and Human Services, 1987). Research shows that preventing drug use takes more than classroom instruction and/or telling students not to use drugs. Impact on students' behavior regarding drugs can be realized only if a program is delivered in the context of a comprehensive, systematic and integrative approach encompassing instruction and activities, parent involvement and community support.

The Developmental Systems Model for Drug Prevention, Education, Monitoring and Counseling emphasizes the person or behavioral factor (self-efficacy) as the main focus of the model.

Comprehensive programs to attack drugs and alcohol use must reach beyond the educational institution. They must involve parents and the community. These programs begin with a firm and committed anti-drug policy. They reinforce the policy by providing staff training and support, intervention and referral services and drug-free extracurricular activities.

The components of prevention, education, monitoring and counseling are essential pieces or parts of the struggle against drugs, but only a piece of it. The purpose of this guide is to help support the total (whole) effort, to make real the potential of a system that the "whole is greater than the sum of its parts."

This guide aims to integrate the basic components of prevention, education, monitoring and counseling so that these integrated components can contribute toward developing a positive individual behavior of self-efficacy among student-athletes.

The guide is divided into three sections as follows:  
Section 1: Organizational Structure of Drug Prevention, Education, Monitoring and Counseling for Intercollegiate Athletics; Section 2: Program Structure of Drug Prevention,

Education, Monitoring and Counseling for Intercollegiate Athletics; and Section 3: Evaluation of Drug Prevention, Education, Monitoring and Counseling for Intercollegiate Athletics.

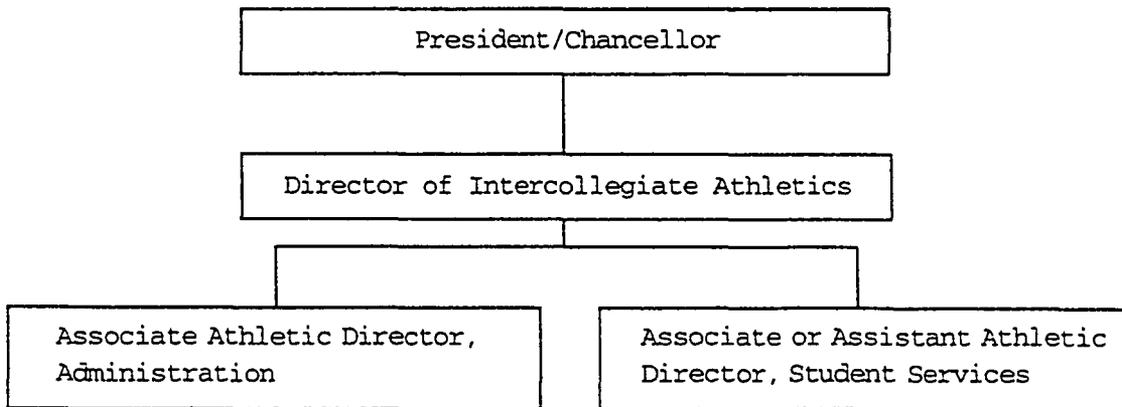
In addition, this guide is anchored by the philosophy of promoting a supportive campus environment where student-athletes will have the opportunity to maximize their intellectual, personal, emotional and social development with emphasis on self-efficacy and personal responsibility. The coterminous function of this guide will be the encouragement and demonstration of effective health practices, including nutrition and wellness education.

**Section 1. Organizational Structure of Drug Prevention, Education, Monitoring and Counseling for Intercollegiate Athletics**

The program should be housed in the Department of Intercollegiate Athletics under the general supervision of the Director and managed by his or her designee who is usually the Associate or Assistant Director in charge of student affairs. Effective management of the program can only be achieved when leadership behavior reflects Likert's theory of supportive relationships, especially as it applies to student-athletes, and the level of authority is appropriate for the effective implementation and governance of the program.

The manager's primary responsibility will be in administering the "Internal Management Regulations and Procedures for Drug Education Testing and Counseling of Student-Athletes" (1987) policy adopted by the university or college. Other responsibilities include the selection of appropriate facilities and equipment, scheduling and coordinating of designated elements of the "policy," such as briefing sessions for the individual teams, enrollment in drug education classes, drug testing dates, selection of a drug testing laboratory (which includes their drug testing team) to ensure total compliance with the university or college's "policy," making referrals and administering procedures governing a positive test and the compiling of a budget that meets the health and welfare needs of the student-athlete as a top priority. Staffing needs from the athletic department's perspective are minimal, with the only necessary personnel being the appropriate associate or assistant athletic director who will also be the department's responsible managerial employee (RME) administering the program. Full cooperation, of course, will be expected from various other athletic department personnel such as trainers, coaches and facilities personnel. The RME should also have the ability to call upon other university/college personnel for services when needed, such as the use of counseling services as well as personnel from across campus to sit as members of an

advisory committee on drug prevention, education, monitoring and counseling.



**Figure 4. Organization of Executive Level  
Department of Intercollegiate Athletics**

Although the selection of a drug testing laboratory has been mentioned earlier, it is necessary to highlight some important criteria in this process. The laboratory selected must have gas chromatography/mass spectrometry (GC/MS) testing capabilities done locally for confirming "positive" tests on urine samples previously testing positive on other inexpensive drug screens where false-positive results may occur. The results of GC/MS is accepted in courts of law as unequivocal. It is also an expensive process that for this application is used for confirmation purposes only. The laboratory should also have adequate numbers of experienced personnel to staff the entire urine sample collection

process, maintaining the integrity of the "chain-of custody." Should the selection process also include requirements for public bid, these essential criteria should never be compromised.

#### Facilities and Equipment

Most departments of intercollegiate athletics will have adequate on-campus facilities with necessary equipment available for full implementation of the program. Briefing rooms must be large enough to accommodate at minimum the largest intercollegiate team roster and respective coaches, equipped with audio-visual equipment to assist presenters with their briefings. Urine sample collection station facilities requirements are largely self-explanatory. The collection station should be established outside and in close proximity to appropriate lavatory facilities for effective execution of the collection process. In the case of coed sports, collection stations should be segregated by gender. The actual collection procedure is unobserved and the entire collection process is designed to preserve the dignity of each student-athlete without compromising the integrity of the program. Access and egress from the collection stations should be convenient for the student-athlete but controllable by those administering this phase of the drug testing process.

### Budgetary Considerations

The fiscal requirements for the implementation of the "model" at a college or university are modest because many of the necessary resources are already available on campus.

### Budget for Prevention

This component entails familiarizing the student-athletes with all aspects of state and federal laws relating to use and abuse of drugs. It is anticipated that this program will be carried out by inviting prominent individuals within the community to speak as guest lecturers. Costs for this program will be minimal (honoraria of \$1,000 per year).

### Budget for Education

This component is subdivided into two units. The first is the completion of a three-credit course dealing with the use and abuse of restricted or banned substances. The second unit in this component is required participation in various workshops and seminars sponsored periodically by the Department of Intercollegiate Athletics.

This component also will not require substantial resources. It is anticipated that the requirements will be part of the ongoing general educational program. Honoraria and other expenses will be limited to \$1,000 per year.

### Budget for Monitoring

This component entails the collection and testing of urine samples. This testing covers all student-athletes without exception. It is estimated that this will call for drug screening of approximately 500 student-athletes, depending upon the number of sports offerings. The collection and testing will be conducted by a nationally certified laboratory which will be required to provide all personnel, supplies and equipment necessary to administer the collection and testing process in accordance with the specifications established by the Department of Intercollegiate Athletics in conjunction with guidelines developed by the National Collegiate Athletic Association. The preliminary cost projection for this component is \$15,000 based on a cost of \$30 per initial urine drug screen (Hezlep, 1994). It is anticipated that approximately ten percent of the samples derived from this basic test will indicate positive. All positive samples will be subjected to a more refined test (GC/MS), which is projected to cost \$60 per test or \$3,000 (Hezlep, 1994). Therefore, it is anticipated that this component will require \$18,000.

### Budget for Counseling

The counseling component is quite broad in scope. The certified drug counselors will be part of the continuing education unit and will be called to participate as resource

personnel for the workshops and seminars. These counselors will also provide case assessment services for those student-athletes identified as needing assistance as a result of positive drug tests or self-disclosure. This case assessment will provide the athletic director or his/her designee with a recommendation for a course of action that will need to be taken regarding those student-athletes. The recommendation may include the student-athlete's degree of participation, including suspension from practices and competition, enrollment in substance abuse programs, or individual counseling through the university or state department of health.

It is anticipated that the cost for this program will be minimal as the anticipated services are to a great extent available through the university and various other state agencies.

Based on the above, it is anticipated that the substance abuse prevention, education, monitoring and counseling program will require approximately \$20,000 in additional resources.

## **Section 2: Program Structure of Drug Prevention, Education, Monitoring and Counseling for Intercollegiate Athletics**

In a generic but real sense, education is a nurturing experience responsive to the needs of the learner. Student-athletes of college age have needs that are quite different from those of children, older adults, or even their

classmates from the general student body. The basic differences lie in the fact that most children will not have chosen to be in this learning situation and older adults will exhibit predominantly those specific needs reflecting their reasons for being in the learning situation. Student-athletes, being younger adults, and by virtue of the fact that athletic participation adds stress and responsibility to their personal and academic lives, may reflect a variety of needs spanning the need gamut and their prioritizing of their reasons for being in such a learning situation. Herein lie the basic reasons for providing an in-service or continuing educational element to the education component discussed in this chapter. In this respect, the enfolding of in-service or continuing education programs assists the more formal education effort to develop responsive and caring individuals who would be effective change agents against substance abuse. The basic programming philosophy reflects the fact that one needs to be nurtured before one can be nurturing. This philosophy as translated to program effectiveness must be responsive to any and all participant needs. Table 4 (on page 103) is a recommended example of in-service delivery modes, elements of which an athletic department should consider implementing on an ongoing basis.

In an effort to enhance each of the delivery modes, special emphasis should be placed on collaborative decision making in consultation with student-athletes to more

accurately address their educational needs and hence the expression of the desired behavior (Ching, 1981). Needless to say, the degree of success these programs display is also predicated on the commitment of a substantial amount of personnel time and effort by all participants.

**Table 4. Table of In-service Delivery Modes**  
(Ching, 1981)

<b>Delivery Mode</b>	<b>Individual Need Focus</b>	<b>Primary Design</b>
Formal (workshops, seminars, lectures, courses)	Curricular/ knowledge/skills	Whole school large group/ departmental
Resource Teaching (resource teachers, demonstrations, visitations)	Strengthening role concept	Individual/ small group
Leadership training (development of group processing skills, administrative skills, program and curriculum development)	Personal growth development	Individual/ cadres/small group
Direct assistance (resource personnel, assigned staff development person, administration-staff liaisons)	Support in task accomplishment	Individual/ small group/ departmental
Initiative support (making time and resources available to supports of initiative)	Professional development	Individual/ small group/ departmental

The fluidity of this model allows for adaptations to a multitude of situations and settings. The following actions are considered basic common denominators for implementation:

- 1) Alcohol and drug curriculum offerings to students through a number of academic departments such as Health, Physical Education & Recreation, Continuing Education and Counselor Education. The intent of coursework choices is to provide student-athletes with foundations for understanding societal issues.
- 2) Peer support networks or groups. The literature has confirmed that students with common interests and problems tend to form cultural groups along those lines and seek like-minded individuals to assist them with their situations. These peer support groups would function similar to Alcoholics Anonymous or Narcotics Anonymous.
- 3) Wellness Advisory Committee. This group, consisting of students, faculty, administrators, health care professionals and community lay persons, would be the medium to air, discuss and suggest to the Athletic Department or the source of the management function, any noteworthy or supportive ideas and comments. The Advisory Committee would not be a governing board but a channel through which its members could contribute information, ideas and opinions to the project administration.

- 4) Informational workshops designed to help students become more aware of their own reasons for alcohol and drug use, to learn skills to resist peer pressure and to learn about assertiveness and stress/pressure reduction. These would be provided by counselors, faculty and community personnel with the aim of increasing the visibility of substance abuse programming and presentations on substance-related topics.
- 5) Substance abuse handbook. This can be a project of the Wellness Advisory Committee, the Athletic Department or substance abuse counselor. The handbook should be an educational model for responsible drug use. Ideally, it would include access to health, educational and social/psychological services.

### Sample Drug Education Course Outline

#### I. Descriptive Information

- A. Catalogue description: Introduction to psychoactive drugs and their effects; drug regulations; education and rehabilitation programs; psychosocial variables related to the decisions to use/abuse drugs.
- B. Credits: 3 semester hours
- C. Pre-requisites: None
- D. Specification of intended audience: For the general student population within the university.

## II. Specification of Course Goals and Objectives

- A. General goals: To provide the student with knowledge and skills to cope with the increasing problem of drug abuse in our society.
- B. Course objectives:
  - 1. To acquire skills in self-awareness, values and alternative education.
  - 2. To understand motivations involved in drug use, misuse or abuse.
  - 3. To develop self-reliance and individual responsibility for health.
  - 4. To identify the various types of drugs and their effects.
  - 5. To understand the legal implications and consequences of drug abuse.

## III. Course Content

- A. Drug Use: An Overview
  - 1. Analyze a discussion, article or presentation about a drug problem and determine how well it addresses a list of six questions.
  - 2. State four general principles about psychoactive drugs and understand how each of these principles relates to the effects of the drug.

3. Describe four pharmacological revolutions that have altered our thinking about drugs and how each influenced our thinking.
4. Discuss the cultural changes that have occurred in the United States since World War II and how those changes relate to drug use and abuse.
5. Describe at least two methods for gathering information about drug use, and point out some advantages and disadvantages for each of the methods.
6. Cite the approximate percentages of high school seniors and young adults reporting current use of alcohol, tobacco, marijuana and cocaine, and describe in general terms any recent trends in those figures.
7. Name several psychosocial variables that have been found to be correlated with marijuana use among adolescents, and know which are the most highly correlated.

B. Drug Use as a Social Problem

1. Explanation of what is meant by "laissez-faire" and "victimless crimes." Give three general motivations for society regulations on drug use.

2. Define four categories of toxicity and give an example of each.
3. Describe the DAWN system and the two basic types of information it collects.
4. Define each of the following terms: tolerance, physical dependence, and psychological dependence.
5. Describe the changes that have taken place in our views of the term addiction and explain why.
6. Give a few brief, factual statements about whether heroin addicts become criminals as a result of their addiction.
7. Discuss the ways in which alcohol contributes to violent crime.

C. Drug Regulations

1. Discussion of historical factors which led to the passage of the 1906 and 1914 laws that are the basis for our current federal drug regulations.
2. Explain how the rules governing pharmaceuticals in the United States have evolved since 1906 and what events led to major changes in those rules.

3. Describe the process by which a drug company works with the Food and Drug Administration to bring a new drug to market.
4. Explain how enforcement of the Harrison Act and subsequent federal laws have helped to shape our current illicit drug problem.
5. List the basic provisions of the current federal controlled substance regulations.
6. Describe the current federal approach to drug enforcement and some of its positive consequences and enormous difficulties.

D. The Nervous System

1. Explain the need for chemical communication within the human body, and know the similarities and differences between hormonal and neural communication.
2. Describe how neurotransmitter chemicals are released and understand their interaction and receptors.
3. Identify the major subdivisions of the nervous system and the functions of the two parts of the autonomic nervous system.
4. Name a few of the major structural parts of the brain and some of the chemical pathways along with the general functions served by each path or pathway.

5. Describe the "life cycle" of a neurotransmitter molecule and the various ways that psychoactive drugs can interact with it.

E. Chemical Commodities

1. Discuss the drug marketplace and distribution patterns for both legal and illicit drugs.
2. Explain the difference between a brand name and a generic name.
3. Describe the commonly used techniques to identify drugs.
4. Discuss the major issues in the current controversy over the detection of drugs in samples of body fluids.

F. The Actions of Drugs

1. Distinguish between specific and nonspecific drug effects.
2. Describe dose-response relationships and how they are interpreted to reveal specific drug effects, individual differences and multiple drug effects.
3. Explain how the route of administration, drug distribution and processes of drug removal are reflected in the time course of a drug's action.

4. Name three possible reasons for developing tolerance, and understand how one of them relates to physical dependence.

G. Stimulants

1. Discuss the history of the origin and early uses of both amphetamine and cocaine.
2. Describe the history and current status of illicit use of these drugs.
3. Explain how these drugs work in the brain and how their chemical structure relates to their mechanism of action.
4. State the previous and current medical uses of cocaine and amphetamine.
5. Discuss the potential for addiction to stimulants and the possible toxic reactions for each of these drugs.

H. Sedatives and Hypnotics

1. Distinguish among the barbiturates, benzodiazepines and other classes of depressant drugs and know something of the history of each major group.
2. Explain the mechanism of action of the barbiturates and the benzodiazepines in relation to the neurotransmitter GABA.

3. Describe the usefulness and some of the practical limitations of these drugs in treating anxiety, insomnia and epilepsy.
4. Describe the ability of these drugs to produce psychological and physical dependence and be able to describe the withdrawal syndrome.
5. Discuss the ability of these drugs to produce behavioral and physiological toxicity.
6. Describe at least two common patterns of sedative use.

#### I. Alcohol

1. Describe how alcohol is fermented and distilled and how these processes are used to produce various alcoholic beverages.
2. Discuss the history of regulation of alcoholic beverages and the current trends in sales of beer, wine and liquor.
3. Explain how alcohol is absorbed and broken down in the body, and how blood alcohol level relates to changes in behavior.
4. Describe some of the important medical and social problems caused by alcohol use.
5. Discuss the factors that go into describing an individual as an alcoholic.

J. Nicotine

1. State at least five facts about the history of tobacco and the spread of its use around the world.
2. Describe how cigarettes are made and how they have changed over the years.
3. Discuss the increasingly common use of "smokeless" tobacco and the recent fad involving clove cigarettes.
4. List some facts about the consequences of smoking for cancer, heart disease, obstructive lung disease and pregnancy.
5. Discuss the pharmacology of nicotine and evidence indicating that it is the dependence-producing agent in tobacco.
6. Describe drug and non-drug approaches to smoking cessation.

K. Caffeine

1. Describe three plant sources and several other dietary and medical sources of caffeine and approximately how much caffeine is obtained from each.
2. Discuss the time course of caffeine's action in the human body and the mechanism by which it acts.

3. Describe several psychological and behavioral effects of caffeine.
4. Explain the concerns that have been expressed about caffeinism and the potential toxicity of caffeine.

L. Over-the-Counter Drugs

1. Describe the process by which the Food and Drug Administration has reviewed OTC products for safety and effectiveness.
2. Discuss the effects of three types of OTC psychoactive drugs: stimulants, weight-control products and sedatives.
3. Explain how aspirin and related products work to relieve pain.
4. Describe the causes of colds and explain which symptoms are treated with which type of ingredient.
5. List eight chemicals that are the main active ingredients in all the OTC products.

M. Psychotherapeutic Drugs

1. Generally explain the medical model of mental disorders and how the model relates to drug therapy.
2. Describe the major symptoms associated with anxiety disorders, psychosis and the affective disorders.

3. Discuss some of the approaches to drug treatment that were used before 1950.
4. List the names of some of the antipsychotic and antidepressant drugs and know how they work and how effective they are.
5. Explain why lithium was so slow in being introduced to the U.S. market and for what conditions it is now used.

N. Narcotics

1. Discuss the opium poppy as the original source of narcotic drugs and the history of this important plant substance.
2. Describe how narcotic addiction has changed over the years up to the present.
3. Explain how the narcotics work in the nervous system and what their effects are.
4. List ways in which narcotic drugs have been used to benefit human health and well-being.
5. Discuss the dependence characteristics and the toxic properties of the narcotics.
6. Describe some of the behavioral patterns of narcotic abusers.

O. Hallucinogens

1. Explain why psychoactive drugs have played an important role in many religions.

2. Describe the history of the discovery and use of LSD.
3. Identify the psychological similarities among the indole hallucinogens and the current scientific attitude about how they work in the brain.
4. Describe several psychoactive plants, the chemicals contained in them, the class of hallucinogen to which they belong, and what their psychological effects are.

P. Marijuana and Hashish

1. List the various cannabis species and some of the ways the plant is prepared for use.
2. Describe the history of cannabis use.
3. Name those chemicals that are most active in marijuana, and describe the time course of their presence in the body.
4. Explain the basic physiological and behavioral effects of marijuana, and discuss its current status in medicinal use.
5. Identify the issues relating to dependence and toxicity with marijuana.

Q. Drugs and Athletes

1. Understand the historical development of the use of performance-enhancing drugs by

athletes, and of attempts to regulate drug use by athletes.

2. Be familiar with major concepts and terms such as ergogenic aids and anabolic androgenic steroids, and understand the importance of psychological factors such as the masking of fatigue in evaluating the performance-enhancing properties of drugs.
3. Understand what experimental research as well as the experience of athletes tells us about the effects of stimulant drugs on performance, as well as the side effects and dangers of stimulant drug use.
4. Understand what experimental research and experience tell us about the effects of anabolic steroids on muscular development and strength, as well as the side effects and dangers of anabolic steroids.

R. Drug Education and Prevention

1. Distinguish between the goals of drug education and drug abuse prevention.
2. Describe several approaches to drug abuse prevention that have been used in public school settings and how effective each approach has been.

3. Explain how approaches involving peers, families and other community agencies can be used to strengthen school-based approaches.
4. Explain why smoking prevention has been studied more than prevention of other drug use and describe some of the latest approaches used.
5. Discuss a rational approach to prevention programs in your own community.

S. Substance Abuse Treatment

1. Describe the history, current approaches and controversies involved in the treatment of alcoholism and narcotic addiction.
2. List the major characteristics that define typical therapeutic community and outpatient drug-free programs and explain the differences between these approaches.
3. Discuss approaches that are being used in the treatment of cocaine dependence.

T. A Rational Look at Drug Abuse

1. Discuss drug effects and the safety of drugs from the perspective of society-at-large.
2. Describe how changes in society have changed our drug using habits.
3. Describe the factors that go into labeling a particular type of drug use as drug abuse.

4. Give some examples of the functions of psychoactive drugs in meeting social needs.
5. Explain why drug abuse is a social, legal and political issue much more than it is a medical issue.

V. Required Text

Uppers, Downers, All Arounders: Physical and Mental Effects of Drugs of Abuse by Darryl Inaba and William E. Cohen, CNS Productions, Ashland, OR, 1992.

V. Instructional Procedures

Lecture, audio-visual aids, guest speaker, project and report, group discussion, and individual presentation will be used in the class.

VI. Academic Requirements and Grading

A. Academic requirements

1. For each guest speaker and film, students are required to write a brief (2-3 paragraph) summary of the content of the presentation and his/her personal evaluation of the session (how to apply the content to modify one's lifestyle should be stressed).
2. For a topic of the student's choice, he/she may write a paper which will include a review of the literature from recent publications, and/or interviews with experts on the topic. The paper, with a one-page

abstract, must be completely documented with the sources of information cited.

3. A short presentation of the paper to the class or smaller group (depends on the size of the class) is also required for every student in the class. Class members will participate in the evaluation of these presentations. Arrangement of these presentations will be made by the instructor.
4. Chapter exams will be given throughout the course of the semester.

B. Grading

1. % Grade:	<u>Points</u>	<u>% Grade</u>
Summaries	100	14.3
Paper	200	28.6
Presentation	100	14.3
Chapter exams	<u>300</u>	<u>42.8</u>
TOTAL	700	100.00

2. Grading plan

	<u>Accumulated Points</u>	<u>% of Total Possible Points</u>
A	595 or more	85 or higher
B	537 - 594	77 - 84.9
C	479 - 536	69 - 76.9
D	420 - 478	60 - 68.9
F	less than 420	lower than 60

### **Section 3: Evaluation of Drug Prevention, Education, Monitoring and Counseling of Intercollegiate Athletics**

In proposing this model, the philosophical commitment was to a dynamic system in which evaluation would play a prominent role. The model components are expected to be responsive to ongoing internal evaluation, independent outside evaluation, individual student participants and the Wellness Advisory Committee.

#### Formative Evaluations

There is acknowledged recognition that evaluation of programs or performances can yield considerable dividends. The results of such assessments, both short-term and long-range, can be used to identify problems, make improvements or establish the need to increase emphasis on particular areas within the broad program. With the Systems Model, the key questions of interest to its implementation are: 1) What are the goals or objectives of the Systems Model for Drug Prevention, Education, Monitoring and Counseling for Intercollegiate Athletics? 2) What evidence indicates that these goals are being attained and 3) How does one determine overall program effectiveness?

From a formative evaluation standpoint, feedback would be garnered concurrent to implementation of the model. It is considered a vital provision, one with particular relevance to measuring incremental achievement and progress. It is expected that short-term indicators, especially in a

developing model, will provide timely information that can be critical to administrators for correcting problems as they occur. Another purpose for ongoing outcome review is to work continually toward the model's overall goals. The evaluation determiners then become both processual as well as aggregative.

While evaluating each component of the model separately would provide an orderly and targeted approach to assessing objectives, the impact of the model on the student-athlete is premised to be best guided by its integrative effectiveness. Therefore, the guidelines for formative evaluations will embrace this same perspective.

Topically, the first guideline centers on the subjects themselves, the intercollegiate athletes. In accordance with NCAA regulations, they will be given pre-participation drug tests, followed by periodic reviews. Related to these pre- and post-assessments of athletes, there will be specific, consequential provisions in place for those whose reviews are questionable, ranging from meetings to suspensions to penalties. The prospect that coaches, faculty and administrative support staff such as trainers and equipment managers would have input is a second guideline. Because their contacts with the athletes are frequent, their observations would be most enlightening and viewed as a viable dimension of this enterprise.

As Girdano and Dusek (1980) noted, successful drug programs use a team approach, many with a counselor as a primary member. These findings both reinforce the appropriateness of an ongoing counseling perspective in program improvements activities and suggest the need for direct involvement in the model's evaluation by the student participants themselves. The rationale for putting forth a Student Advisory Group or Drug Awareness Education Committee confirms the model's commitment to student empowerment and also to the likelihood that self-sustained learning and behavior occur when participation is direct. It is anticipated that providing students with service roles and responsibilities will increase collaborative links with the community-at-large. The potential exists for collaboration with local government agencies such as other institutions, courts, health and human service and law enforcement organizations; self-help groups such as Alcoholics Anonymous and Narcotics Anonymous; community service groups such as YMCA, YWCA and social service groups such as Lions Clubs and Junior Chamber of Commerce.

#### Summative Evaluations

There are a number of reasons why programs such as the Systems Substance Abuse Model should be assessed for its overall effectiveness. Certainly any redevelopment or modification prompted during the span of program

administration necessitates reevaluation. It is also necessary to ferret out the logistical arrangements of a program for its "newness" by reviewing quantitative and qualitative assessments. This phase is viewed as a comprehensive attempt at tracking the athletes' progress and envisioned to occur every five years. A comprehensive program will include:

- A review of intercollegiate athletics policies that include sanctions on drug use and drug abuse. Changes that may need addressing will be those implicated by amended national and state laws, the altering of institutional priorities and exigency of the model.
- A longitudinal assessment of drug and alcohol use to measure change. Findings from evaluation efforts are also expected to motivate program improvement in addition to influencing program development and fine-tuning policies and activities. They will also generate specific findings about patterns in individual differences and corresponding strategies. In particular, longitudinal student data files will be collected by following the student-athlete cohort over time. Such files are important for research on changes in student behaviors and attitudes. They are also significant for data on

attrition, college experiences, effectiveness of resources and for other follow-up measures.

- A representative cross-section of appropriate people from the campus community involved in the overall review of goals and objectives.
- Surveys and questionnaires that solicit and analyze self-study information from internal and external reviewers.

In establishing a "Center" for Drug Prevention, Education, Monitoring and Counseling within the Department of Intercollegiate Athletics, consideration must be given to the following: mission statement, the population to be served, the desired outcomes, organizational structure and staffing of the unit, physical facilities and budget. Responses to these considerations will vary from institution to institution, as each will have to perform an analysis of its needs in this area and subsequently determine priorities and resource allocations. A sample set of responses for a typical National Collegiate Athletic Association Division I-A institution with a student-athlete population of 450-500 participating in 15 intercollegiate sports follows:

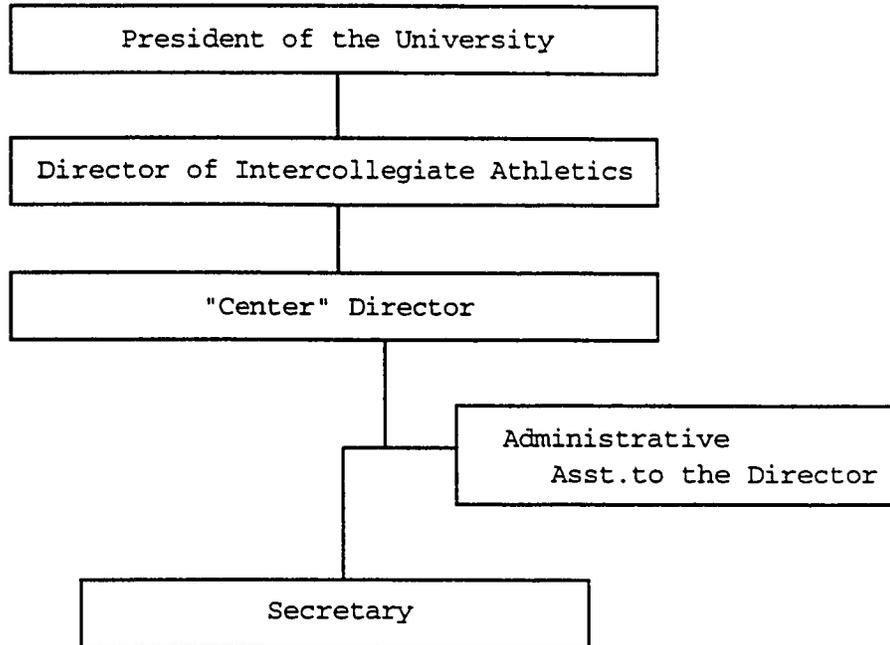
Mission statement: "To promote a nurturing and healing environment in intercollegiate athletics to empower all to experience health, well-being and quality of life"  
(Fukunaga, 1994).

Population to be served: The "Center" will initially serve only the student-athlete population at the institution with the recognition that demand for services may require program expansion, but that is clearly beyond the scope of this dissertation.

Desired outcome: Each student-athlete will have assimilated enough pertinent information on the subject and gained other necessary experiences to attain a personal belief in his or her ability to make informed judgments and execute a desired performance.

Organizational structure and staffing: It is recommended that the organizational structure of the unit reflect the importance of its mission in its line relationship to the Director of Intercollegiate Athletics (see Figure 5 on page 127).

Since the "Center director" will have the responsibility for implementing the paradigm, the position may be best served by a sports psychologist who is also a certified drug counselor. Due to the size of our sample student-athlete population, an administrative assistant in charge of procurement and budget in a staff relationship to the "Center director" will significantly increase the efficiency of the work by "freeing" the director to focus more on student-athlete needs. It goes without saying that the appropriate secretarial support will be provided the unit.



**Figure 5. Organization of Center for Drug Prevention, Education, Monitoring and Counseling**

Physical facilities: While not a difficult requirement to satisfy on most college campuses as it relates to the unit itself, it may take some creativity and discussion to free up existing conference rooms, auditoriums, locker room facilities and classrooms as the unit fully operationalizes the paradigm below. At the very least two private offices with an adjoining secretarial area should initially serve these positions well.

Budget: As institutions of higher learning across the nation deal with decreases in government support in relation to our dwindling economy, a response to this consideration becomes not much less than "flexible." Personnel costs

traditionally make up 75 percent of the budget in higher education with the remaining 25 percent in equipment and supplies. The following represents reasonable budgetary estimates for personnel salaries considering the current economic conditions: Director \$55,000, Administrative Assistant to the Director \$35,000, Secretary to the Director \$25,000 and \$12,480 allotted annually for student-assistants. These figures are estimates based upon current State of Hawaii personnel classifications and subject to changes as articulated in collective bargaining agreements.

In concluding this chapter it may be useful to the reader to review a diagrammatic representation of the student-athletes Drug Prevention, Education, Monitoring and Counseling program experiences (see Figure 3 on page 86).

### **Conclusion**

It is anticipated that increased governmental regulation of intercollegiate sports will make more pervasive the prevention and monitoring aspects of drug abuse models, perhaps at the expense of the more creative venues of counseling and education. While tighter regulations may not bode well for collaborative initiatives, they address timely dedication to ensuring that evaluative measures are in place.

In the short term, the key questions would be: How would one evaluate the extent to which each component or

strategy was effective? What, if any, are the outcomes that evolve out of each component, and how will they be measured? In the long term, how will the athletic department evaluate the extent to which the overall paradigm or collection of programs made a difference to student-athletes and their self-efficacy?

Beyond the formative and summative evaluations, there is this dilemma: To what extent should the college or university take active responsibility for students who are experiencing serious personal, psychological and physical difficulties due to substance abuse? Another dilemma is: Does the higher education institution have the responsibility or the capacity to function as a quasi-residential treatment center? This is of particular concern because a large segment of the student-athlete population resides in on-campus student housing. Lastly and perhaps most importantly, how does one balance the legal rights of the substance abusive student with the needs of others in the campus community?

Integrating the guidelines of this model to actual practice, future implementations will need to design interventions and programs, effectively manage them and modify them based on systematic evaluation. If one message can be derived from a holistic institutional Model of Drug Prevention, Education, Monitoring and Counseling, it is that singular approaches serving their own self-defined purposes

cannot contribute as effectively and as efficiently to the institution's broader goals as a comprehensive model can.

As discussed in Chapter I, this study is undergirded by the philosophy of pragmatism, which views the universe by accepting the world of science impressions and scientific study. The pragmatist believes that humans are a part of nature, not separate from it, and continuous with nature. Each human organism has individual traits and capacities and is in fact a unique organism within the general species.

Douglas McGregor and Rensis Likert were behavioral pragmatists and humanists whose work promulgated the "optimistic view of the nature of man." As such, both men also believed that the behavior of individuals can change and does change in accordance with changes in the environment in which they are immersed. This concept subscribes to Lewin's Field Theory which may be articulated as  $\text{Behavior} = f(\text{PXE})$ , or behavior is a function of the person and his (her) environment. Although the environment exhibits strong influences on human behavior, people can also contribute to the modification of the environment in accordance to their role in that environment. We therefore have a framework to discuss the function of self-efficacy of the individual as a means of determining behavior. The paradigm displayed in Figure 1 (on page 6) represents a systems approach to problem solving and contains causal, intervening and end-result variables. The systems approach

is important to this study as the interdependence and interrelationships of the components of the paradigm exert a greater influence on the desired outcome than if they stood alone. The totality is far greater using this interdependent model. When seeking change, the efforts should be focused on the causal variables, for change here will result in changes in the intervening and end-result variables. Attempts to initiate change first in any other variable will usually result in disappointment and failure.

The model for drug prevention, education, monitoring and counseling is designed to enhance the self-efficacy of the student-athlete. Self-efficacy as discussed in the study refers to a personal belief in one's capability to attain a goal or execute a performance. This represents the end-result variable in our paradigm.

Therefore, in seeking a change in the end-result variable represented by self-efficacy, changes must first occur in the causal variables represented by drug prevention, education, monitoring and counseling. This study has detailed discussions on the elements of change, but the process should be subjected to ongoing review and evaluation in the spirit of improving rather than proving. In the words of Thomas Paine, "That which we obtain too early, we esteem too lightly. It is dearness only which gives everything its value. Heaven knows how to put a proper price on its goods" (Covey, 1989, p. 62).

Appendix

INTERNAL MANAGEMENT REGULATION AND PROCEDURES FOR DRUG  
EDUCATION AND TESTING OF STUDENT-ATHLETES AT THE UNIVERSITY  
OF HAWAII AT MANOA

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August 7, 1987

INTERNAL MANAGEMENT REGULATION AND PROCEDURES  
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I. STATEMENT OF PURPOSE OF THIS REGULATION

Due to the physical demands of intercollegiate competition, potential physical and emotional damage to student-athletes may occur. The student-athlete using prohibited substances may harm himself or herself by doing so and may distort his or her own athletic abilities, possibly harming the student-athlete, his or her team members and opponents, by participation in athletic competition and practice. The University of Hawaii at Manoa's (University") concern for the health and well-being of its student-athletes, as well as for the integrity of its intercollegiate athletic program, forms the basis or the implementation of this drug testing program.

The purpose of this Internal Management Regulation and Procedures for Drug Education and Testing of Student-Athletes at the University of Hawaii at Manoa ("Regulation") is to protect and benefit the student-athletes of the University of Hawaii at Manoa without undue interference in their private lives.

Student-athlete, for purposes of this Regulation, means all students at the University who appear on the University's official National Collegiate Athletic Association ("NCAA") squad list for any sport.

The specific objectives of the University's education and drug testing program established by this Regulation include the following:

1. To educate the student-athletes about substance use and abuse.
2. To prevent the use of substances described in schedule A, attached to this Regulation, ("prohibited substances") by the student-athletes.
3. To identify any student-athlete that may be using prohibited substances and to identify the prohibited substance(s).
4. To educate any student-athlete so identified regarding prohibited substances as it affects the student-athlete and others, and the competition.

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5. To require student-athletes who test positive for prohibited substances to participate in drug assessment and/or education and/or counselling and/or treatment as directed by the University.
6. To provide reasonable safeguards to assure that student-athletes are medically competent to participate in athletic competition.
7. To attempt to assure that student-athletes are fit for the rigors of intercollegiate athletic competition in an effort to minimize the risks of serious injury to the student-athlete and others.
8. To encourage discussion about questions the student-athletes may have about use of prohibited substances or other drugs.
9. To help to assure that the University's intercollegiate athletic teams will be in compliance with NCAA drug testing rules, so that the University's student-athletes and/or teams will not be disqualified from participating in NCAA-sponsored playoffs and/or bowl games.
10. To uphold and safeguard the integrity of the University's athletic programs for intercollegiate competition and practice.

II. EDUCATION

All student-athletes shall:

- A. attend a presentation by the University Athletic Department staff and others to occur each time testing procedures are administered to the student-athlete's squad, and
- B. enroll in, and successfully complete HPE 484 (Mood and Behavior Modification), a class focusing on the identification of substances used by people to modify mood and behavior; problems resulting from their use or abuse, and an analysis of motivations involved in their use or abuse. Skills in self-awareness, values and alternate training will also be taught.

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This class shall be taken by all student-athletes as an elective. The University shall indicate to students when this course shall be taken by the student-athlete, and the University shall take all steps practical to ensure that the scheduling of this course does not conflict with student-athletes' schedules, including their academic schedules in other course work.

This class shall be repeated by student-athletes until a passing grade is obtained.

- C. A student-athlete's failure to comply in parts II.A. and II.B. shall be cause for immediate suspension from all intercollegiate competition and practice until such time as the student-athlete comes into compliance with the requirements of this part II. Prior to such suspension, the Athletic Director or his designee shall notify the student-athlete of such immediate suspension. If, within 72 hours of such notification, the student-athlete makes a written request to the Athletic Director for a meeting to review his or her suspension, the Athletic Director or his designee shall meet with the student-athlete to discuss the situation and to allow the student-athlete to provide any pertinent facts or mitigating circumstances.

A student-athlete making such a written request to the Athletic Director for a meeting shall not be suspended until following the meeting, unless the Athletic Director establishes a different time or lesser sanction, or decides that no sanction is in order under the circumstances presented.

III. PROHIBITION

Except as provided in part VIII.E. of this Regulation, proof of the presence of prohibited substances in the urine of a student-athlete in such quantities established in part VII.N. of this Regulation which has been tested in the manner provided by part VIII.A.2. of this Regulation, is a violation of this Regulation that shall subject the student-athlete to the provisions relating to consequences in part IX of this Regulation. In addition, except as provided in part VIII.E. of this Regulation, failure by a

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student-athlete to provide a urine sample to the University upon the University's request shall subject the student-athlete to the provisions relating to consequences in part IX of this Regulation.

In addition, the practice of blood doping (the intravenous injection of whole blood, packed red blood cells or blood substitutes) is prohibited.

IV. ADMINISTRATION OF THIS REGULATION

- A. This regulation shall be administered by the Athletic Department of the University.
- B. It is the intention of the University to implement this Regulation in such a way as to recognize and protect, as much as possible, the dignity and privacy of its student-athletes.
- C. Prior to testing, the University will make presentations to the University's athletic squads with official NCAA squad lists about the purpose and procedures of this Regulation. A copy of this Regulation will be given to each student-athlete. A copy of this Regulation will also be mailed to the parents(s)/legal guardian(s) of those student-athletes who are under eighteen (18) years of age. The student-athletes will have an opportunity to ask questions about this Regulation.
- D. The University's Athletic Director or his or her designee ("Athletic Director or designee") will compile all written laboratory reports for analysis and review, sharing these reports and the information contained in the reports only with the following persons: Head Coach of the student-athletes' team, the Team Physician, the Head Trainer (or Head Women's Trainer, as appropriate), and other persons authorized by law. A student-athlete who has a positive test result shall be permitted to obtain a copy of his/her laboratory reports upon request by the student-athlete.

The University will use its best efforts to prevent the information regarding the drug testing results of a student-athlete from being

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released to any person other than the persons identified in this part IV.D. unless the release is authorized by the student-athlete's written consent or is otherwise pursuant to law.

All persons in the employ of the University with knowledge of the test results will use their best efforts to protect the confidentiality of such test results.

V. CONSENT FORM

- A. After the University's presentation about the purpose and procedures of this Regulation, each student-athlete will be asked to sign an Agreement, Consent and Receipt form ("consent form") provided by the University.
- B. The consent form shall provide, among other things, that the student-athlete has been informed of and understands this Regulation and voluntarily consents to submit to testing for prohibited substances and that the student-athlete agrees to be bound by all of the terms of this Regulation. Further, by signing the consent form, the student-athlete will consent to a release of the testing information to a limited group of people responsible for the administration of this Regulation, his or her parent(s) or guardian(s) and to other persons authorized by law. The University shall provide sufficient time for the student-athlete to review this Regulation and the consent form, and to ask questions that the student-athlete may have. The University will use its best efforts to answer all questions asked by the student-athletes.
- C. The signed consent form shall be submitted to the Head Athletic Trainer (including Head Women's Trainer, where applicable) or his or her designee ("head trainer or designee").
- D. Any student-athlete who does not wish to sign the consent form may choose not to do so. Student-athletes who do not sign the consent form will not

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be permitted to participate in intercollegiate competition or practice.

- E. As used in this Regulation, "intercollegiate competition or practice" means all NCAA-sanctioned intercollegiate competition and all University-sponsored practice or training for NCAA-sanctioned intercollegiate competition.

VI. GENERAL STANDARDS

- A. Evidence of the presence of prohibited substances will be obtained by analysis of the student-athlete's urine by gas chromatography, thin layer chromatography, mass spectrometry, radio immunoassays, the enzyme multiplied immunoassay technique, high pressure liquid chromatography, bonded phase absorption/thin layer chromatography, any reliable combination of these methods, or any other reliable method.
- B. Laboratories will be selected by the University to analyze urine specimens from student-athletes.
- C. When the University may test urine samples of its student-athletes:
1. At the time of their pre-season physical examination, all student-athletes will provide the University with a urine sample in the manner described in part VII of this Regulation.
  2. In addition, prior to any athletic squad's participation in NCAA-sponsored post-season athletic events, all student-athletes on that athletic squad who are subject to participation in the NCAA's drug testing program will provide to the University a urine sample in the manner described in part VII of this Regulation.
  3. The University may retest those student-athletes who previously tested positive only during the time for intercollegiate competition and practice of the student-

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athletes' squad and for a period of no more than 18 months after the last prior positive test result. The frequency of retesting shall be as follows:

- a. For marijuana and/or THC: a retest for marijuana or THC shall not occur less than 30 days after a prior positive test result for marijuana or THC. However, a student-athlete with a prior positive test result for marijuana or THC may be retested in the time limits established in part VI.C.3.c. of this Regulation, for substances other than marijuana or THC.
  - b. For anabolic steroids: a retest for anabolic steroids shall not occur less than 180 days after a prior positive test for anabolic steroids. However, a student-athlete with a prior positive test result for anabolic steroids may be retested in the time limits established in part VI.C.3.c. of this Regulation, for substances other than anabolic steroids.
  - c. For all other prohibited substances: a retest shall not occur less than 5 days after a prior positive test result.
4. The University may test a student-athlete at such other time that the University has a reasonable suspicion or belief that the student-athlete in question may be using prohibited substances during intercollegiate competition or practice of the student-athlete's squad.

"Reasonable suspicion" or "reasonable belief" on the part of the University justifying a urine test means those circumstances where the University reasonably believes, based upon specific and articulable facts together with rational inferences from those facts, that a student-

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athlete may be consuming prohibited substances in violation of this Regulation. Based upon this standard, "reasonable suspicion" or "reasonable belief" may include, but is not limited to:

- a. specific evidence of the use of a prohibited substance by a student-athlete, including hearsay evidence that is deemed as reliable by the Athletic Director;
  - b. evidence of a rapid and/or marked change in the athletic performance of a student-athlete;
  - c. evidence of a student-athlete exercising obviously impaired judgment or thought processes; or
  - d. evidence of apparent drug-induced impairment, vacuousness or intoxication on the part of the student-athlete, such as slurred speech, glassy or blood-shot eyes, problems with equilibrium or other gross motor coordination, drowsiness, inappropriate suspiciousness or garrulousness (talkativeness), that is not explained by the student-athlete to the appropriate University official in a satisfactory manner.
5. In any event, notwithstanding the foregoing, the University may not test any student-athlete's urine after the student-athlete totally ceases to participate in the University's athletic programs for intercollegiate competition and practice.

VII. DRUG TESTING PROCEDURE

- A. The head trainer or designee shall be responsible for the custody of all urine samples given by student-athletes, and shall surrender those samples to the laboratory testing the samples.

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- B. At the collection site, the student-athlete will select a container that is sealed in a plastic bag. The student-athlete will be in reasonably close proximity to the Head trainer or designee until the student-athlete provides a urine specimen of between 100 milliliters to 200 milliliters in the container selected. This container is referred to as the "original container" in this Regulation. The Head trainer or designee shall be of the same gender as the student-athlete being tested. The proximity of the Head trainer or designee to the student-athlete during the time specimen is rendered shall be consistent with the student-athlete's interest in privacy and the University's interest in preventing adulteration of the specimen. In no event, however, shall the Head Trainer or designee observe the student-athlete urinating.
- C. Fluids given student-athletes who have difficulty voiding must be approved by the head trainer or designee and must be consumed at that time at the collection site.
- D. If the specimen is insufficient, the student-athlete must remain at the collection site in reasonably close proximity to the head trainer or designee until a sufficient sample is provided. During this period, the original container must be kept covered and controlled by the head trainer or designee.
- E. The head trainer or designee will check the temperature, specific gravity, and the ph of the urine in the original container, and will test for the presence of blood in the urine. If the urine has a temperature lower than 93.6 degrees F., or more than 103.6 degrees F., has a specific gravity below 1.004 or is alkaline, the student-athlete will remain at the collection site until another specimen is provided. These findings will be recorded on the verification form.

If the presence of blood is detected in the urine, the urine will be tested by method other than the enzyme multiplied immunoassay technique. The

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presence of blood in the urine will be noted on the verification form.

- F. The student-athlete, under the direction of the head trainer or designee, will select two additional bottles that are sealed in a plastic bag(s) and will pour approximately two-thirds of the contents of the original container into one of the bottles ("bottle A" and the remaining one-third into the other bottle ("bottle B"), leaving a small amount (approximately 5 milliliters) of the sample remaining in the original container.
- G. Under the observation of the student-athlete, the head trainer or designee will then seal bottle A and bottle B (but not the original container).
- H. The student-athlete will select a personal code number ("code number") from a list provided by the University. This code number will be recorded by the head trainer or designee on the student-athlete's verification form, on all three specimen containers and on the drug test roster for that student-athlete's athletic squad, under the observation of the student-athlete.
- I. When additional specimen(s) are provided, new code number(s), selected by the student-athlete, will be applied to the new bottles. All specimens provided by the student-athlete will be sent to the laboratory for testing.
- J. The student-athlete will sign the verification form, certifying that there were no irregularities in the entire process, or identifying all irregularities and deviations from this Regulation observed by the student-athlete. If the student-athlete refuses to sign the verification form, the head trainer or designee may sign for the student-athlete, and this shall be noted on the verification form.
- K. The head trainer or designee will sign the verification forms, give the student-athlete a copy and secure all remaining copies.

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- L. The head trainer or designee will deliver all the sealed bottles A and B to the designated laboratory and receive a signed list from the laboratory, indicating those bottles, identified by code numbers, that have arrived into their custody intact and sealed. The head trainer or designee shall complete a chain of custody document for each set of specimens. Chain of custody protocol shall be followed by the laboratory.
- M. All urine collected becomes the sole property of the University.
- N. A positive finding for prohibited substances shall occur as follows:
1. For testosterone--if the ratio of the total concentration of testosterone to that of epitestosterone in the urine exceeds 6.
  2. For marijuana or THC--when the ratio of (THC-COOH) to urine equals or exceeds 100 nanograms to 1 milliliter of urine.
  3. As to substances described in category E on Schedule A (diuretics): if the student-athlete provides the University with a documented medical history which demonstrates the need for use of such substances, then no positive test for such substance shall have occurred.
  4. For caffeine--when the ratio of caffeine to urine exceeds 15 micrograms to one milliliter of urine.
  5. As to certain substances included within category B on schedule A (sympathomimetic amines)--the use of terbutaline, salbuterol and biltolterol for the treatment of asthma or exercise-induced bronchospasm are not prohibited so long as the student-athlete provides the University with a documented medical history demonstrating the need for the use of these substances. Otherwise, the

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standard for sympathomimetic amines is set forth in part VII.N.6 of this Regulation.

6. For other prohibited substances (as listed in schedule A): any presence, no matter how slight.
- O. The laboratory will use the urine in bottle A for its initial analysis.
- P. If the initial analysis is positive for a prohibited substance, further testing for prohibited substance(s) will be by way of another test of the urine from bottle A, utilizing the same or an alternate testing method. If this test is positive for the same prohibited substance(s), a preliminary positive test shall have occurred. The alternate test method shall be at least as sensitive for the prohibited substance testing positive as the original test method. For all preliminary positive tests, the laboratory will report all its test results and laboratory findings, recorded for each code number, to the Athletic Director or his designee.
- Q. Upon receipt of the test results and the laboratory findings for urine in bottle A, the Athletic Director or his designee will match the code numbers for preliminary positive test results with the code numbers on the verification form or drug test roster to identify those student-athletes with preliminary positive test findings.
- R. A laboratory shall promptly test the urine in bottle B for those student-athletes whose urine in bottle A received a preliminary positive test. The laboratory shall test bottle B by the gas chromatography/mass spectrometry method of analysis. The test, and the tests set out in part VII.P., shall be conducted by a person qualified to conduct such a test, and the test results shall be interpreted by a person qualified to interpret the results.

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- S. The laboratory shall promptly freeze and retain for at least 30 days all urine specimens for which positive test findings, as defined in part VIII.A.2. of this Regulation, are obtained. Upon request by the student-athlete who tests positive, the University shall make the specimen so preserved available to the student-athlete.

VIII. POSITIVE TEST RESULT

- A. A "positive test result", for purposes of this Regulation, shall occur:
1. When the student-athlete fails to provide a urine sample to the University upon the University's request pursuant to part VI.C. of this Regulation; or
  2. When, under the drug testing procedure described in part VII above, both laboratory tests of the urine in bottle A and the laboratory test of the urine in bottle B confirm positive results for the same prohibited substance(s). (If any of these three tests are not positive for the same substance, no "positive test result" shall have occurred for purposes of this Regulation.)
- B. Whenever a positive test result occurs, the student-athlete will be immediately verbally notified of the positive test result by the Athletic Director or designee.

The Athletic Director or designee shall promptly provide to the student-athlete a written notification of the positive test result and the consequences to be imposed under part IX of this Regulation. The written notification may be left at the residence of the student-athlete if the student-athlete cannot be located within a reasonable period of time.

- C. The student-athlete who is notified of a positive test result may, within 72 hours from the time of receipt of the written notification of the positive test result, request a meeting with the

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Athletic Director to review the test procedures used, to discuss the situation of the student-athlete and to allow the student-athlete to provide any pertinent facts or mitigating circumstances, including medical justification for the use of the prohibited substance.

All requests for the meeting must be in writing. The meeting with the Athletic Director or designee will occur as soon as reasonably possible following the student-athlete's request for a meeting.

- D. The consequences imposed by the Athletic Director set forth in the written notification of the positive test result shall take effect 72 hours after the time of delivery of the written notification to the student-athlete unless the student-athlete has requested a meeting with the Athletic Director under part VIII.C. above. If a meeting with the Athletic Director is requested, consequences imposed by the Athletic Director shall take effect immediately after the meeting with the Athletic Director, unless the Athletic Director establishes a different time.
- E. If, following the meeting between the Athletic Director and the student-athlete, the Athletic Director is satisfied that the positive test result is based upon a defective testing procedure, that the student-athlete was not properly subject to testing at the time the urine specimen was provided to the University (as established in part VI.C. of this Regulation), or that the positive test result is otherwise improper under this Regulation, the Athletic Director shall nullify the positive test result and no consequences under part IX of this Regulation shall occur and no record of the positive test result shall be made.

IX. CONSEQUENCES OF POSITIVE TESTS

- A. Upon being verbally notified of a positive test result, the student-athlete will be immediately prohibited from further participation in

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intercollegiate competition and practice unless the team physician(s) determines that the health and safety of the student-athlete and others will not be jeopardized.

- B. All student-athletes who test positive shall be subject to the following consequences:

1st positive test result--30 day suspension from all intercollegiate competition and practice.

2nd positive test result--60 day suspension from all intercollegiate competition and practice.

3rd positive test result--one year suspension from all intercollegiate competition and practice.

Any prior positive test result of a student-athlete under this Regulation, (except those nullified under part VIII.E. of this Regulation) regardless of when it occurred, shall count as a prior positive test result for purposes of this part IX.B. of this Regulation.

- C. In addition to the other consequences set forth in this part IX, the student-athlete with a positive test result must actively participate in such drug assessment and/or education and/or counselling and/or treatment programs designated by the University for such duration as the Athletic Director may from time to time decide. The drug assessment and/or education and/or counselling and/or treatment programs designated by the University shall be certified programs relating to substance abuse within the meaning of 321-193(10), Hawaii Revised Statutes.

The student-athlete's failure to actively participate in designated drug assessment and/or education and/or counselling and/or treatment programs shall be an independent basis for ongoing suspension of the student-athlete from all intercollegiate competition and practice and, in the manner set forth in part IX.D. of this Regulation, may cause the loss of the student-athlete's athletic grant-in-aid or scholarship.

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The student-athlete's participation in drug assessment and/or education and/or counselling and/or treatment programs shall be closely monitored by the Head Coach of the student-athlete's team. The Head Coach shall report such progress to the Athletic Director for informational and decision-making purposes.

- D. In addition to the other consequences set forth in this part IX, for each positive test result, the student-athlete could possibly face the loss and/or non-renewal of his/her athletic grant-in-aid or scholarship in accord with the terms of the financial aid agreement between the student-athlete and the University (as set forth in the University of Hawaii at Manoa Financial Aids Office Athletic Agreement) and in accord with University rules (including but not limited to the Student Conduct Code) and the NCAA Constitution, By-laws and Rules.
- E. In addition to the other consequences set forth in this part IX, for each positive test result, the student-athlete may also be subject to other sanctions in the manner and on the terms set forth in the Student Conduct Code.
- F. In addition to the other consequences set forth in this part IX, all student-athletes who have a positive test result may be required by the Athletic Director to undergo a physical examination, conducted by a physician, prior to any further participation in intercollegiate competition or practice. The Team Physician(s) may prohibit participation in intercollegiate competition or practice by any student-athlete for such time as deemed medically appropriate should it reasonably appear that the student-athlete's condition would present a health or safety danger to the student-athlete or others.
- G. Positive test results will be made part of the student-athlete's record and kept by the University, except as provided in part VIII.E. of this Regulation.

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X. STUDENT-ATHLETE DUTY TO REPORT

Student-athletes shall report to the University, in writing, his or her use of growth hormone (human, animal or synthetic) and/or local anaesthetics and/or corticosteroids, and such other substances proscribed by the NCAA Constitution, Bylaws or Rules, and shall provide to the University such other information about such substances as required by the NCAA Constitution, Bylaws or Rules.

XI. GENERAL

This Regulation is severable. If any part of this Regulation is found to be invalid, the remaining part of it remains valid.

This Regulation and its administration is subject to change at any time. However, any change will only be implemented by action of the Athletic Director or President of the University of Hawaii at Manoa, and will not be applied retroactively if that would adversely affect a student-athlete's rights.

XII. EFFECTIVE DATE

This Regulation shall take effect on August 7, 1987.

-----  
ALBERT J. SIMONE  
President, University of Hawaii

CONCUR:

-----  
STAN SHERIFF  
Athletic Director  
University of Hawaii, Manoa

A. PSYCHOMOTOR STIMULANTS:

amphetamine	methylphenidate
benzphetamine	norpseudoephedrine
chlorphentermine	pemoline
cocaine	phendimetrazine
diethylpropion	phenmetrazine
dimethylamphetamine	phentermine
ethylamphetamine	pipradol
fencamfamin	prolintane
meclofenoxate	AND RELATED COMPOUNDS
methylamphetamine	

B. chlorprenaline                      methoxyphenamine  
ephedrine                              methylephedrine  
etafedrine                              phenylpropanolamine  
isoetharine                              AND RELATED COMPOUNDS  
isoprenaline

C. MISCELLANEOUS CENTRAL NERVOUS SYSTEM STIMULANTS:

amiphenazole	ethamivan
bemigrade	leptazol
caffeine	nikethamide
cropropamide	picrotoxine
crolethamide	strychnine
doxapram	AND RELATED COMPOUNDS

D. ANABOLIC STEROIDS:

clostebol	norethandrolone
dehydrochlormethyl- testosterone	oxandrolone
fluoxymesterone	oxymesterone
mesterolone	oxymetholone
methenolone	stanozolol
methandienone	testosterone
nandrolone	AND RELATED COMPOUNDS

SCHEDULE A

E. DIURETICS:

bendroflumethiazide	hydroflumethiazide
benzthiazide	methyclothiazide
bumetanide	metolazone
chlorothiazide	polythiazide
chlorthalidone	quinethazone
cyclothiazide	spironolactone
ethacrynic acid	triamterene
flumethiazide	trichlormethiazide
hydrochlorothiazide	

F. STREET DRUGS:

amphetamine	methamphetamine
cocaine	THC
heroin	(tetrahydrocannabinol)
marijuana	

Dear Doctor:

I am participating in the University of Hawaii's Drug Education and Testing Program for Student-Athletes. Enclosed are parts of the drug testing program that you need to be aware of.

If you know that I am presently taking any prohibited substances, please let me know right away so we can discuss this matter.

Please retain this material with my medical records for your future reference.

Thank you.

Very truly yours,

TO: UNIVERSITY OF HAWAII STUDENT-ATHLETE'S PHYSICIAN(S):

PROHIBITED SUBSTANCES UNDER THE  
UNIVERSITY OF HAWAII'S DRUG EDUCATION AND  
TESTING REGULATION FOR STUDENT-ATHLETES

A. PSYCHOMOTOR STIMULANTS:

amphetamine	methylphenidate
benzphetamine	norpseudoephedrine
chlorphentermine	pemoline
cocaine	phendimetrazine
diethylpropion	phenmetrazine
dimethylamphetamine	phentermine
ethylamphetamine	pipradol
fencamfamin	prolintane
meclofenoxate	prolintane
methylamphetamine	AND RELATED COMPOUNDS

B. SYMPATHOMIMETIC AMINES:

chlorprenaline	methoxyphenamine
ephedrine	methylephedrine
etafedrine	phenylpropanolamine
isoetharine	AND RELATED COMPOUNDS
isoprenaline	

C. MISCELLANEOUS CENTRAL NERVOUS SYSTEM STIMULANTS:

amiphenazole	ethamivan
bemigrade	leptazol
caffeine	nikethamide
cropropamide	picrotoxine
crolethamide	strychnine
doxapram	AND RELATED COMPOUNDS

D. ANABOLIC STEROIDS:

clostebol	norethandrolone
dehydrochlormethyl- testosterone	oxandrolone
fluoxymesterone	oxymesterone
mesterolone	oxymetholone
methenolone	stanozolol
methandienone	testosterone
nandrolone	AND RELATED COMPOUNDS

E. DIURETICS:

bendroflumethiazide	hydroflumethiazide
benzthiazide	methyclothiazide
bumetanide	metolazone
chlorothiazide	polythiazide
chlorthalidone	quinethazone
cyclothiazide	spironolactone
ethacrynic acid	triamterene
flumethiazide	trichlormethiazide
flurosemide	AND RELATED COMPOUNDS
hydrochlorothiazide	

F. STREET DRUGS:

amphetamine	methamphetamine
cocaine	THC
heroin	(tetrahydrocannabinol)
marijuana	

G. Blood doping is also prohibited

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A positive finding for prohibited substances shall occur as follows:

1. For testosterone--if the ratio of the total concentration of testosterone to that of epitestosterone in the urine exceeds 6.
2. For marijuana and THC--when the ratio of (THC-COOH) to urine equals or exceeds 100 nanograms to 1 milliliter of urine.
3. As to substances described in category E (diuretics): if the student-athlete provides the University with a documented medical history demonstrating the need for use of such substances, then no positive test for such substance shall have occurred.
4. For caffeine--when the ratio of caffeine to urine exceeds 15 micrograms to one milliliter of urine.
5. As to certain substances included within category B (sympathomimetic amines): the use of terbutaline, salbuterol and biltolterol for the treatment of asthma or exercise-induced bronchospasm are not prohibited so long as the student-athlete provides the University with a

documented medical history demonstrating the need for the use of these substances. Otherwise, the standard for sympathomimetic amines is set forth in part 6. below.

6. For other prohibited substances: any presence, no matter how slight.

-----

Student-athletes shall report to the University, in writing, his or her use of growth hormone (human, animal or synthetic) and/or local anaesthetics and/or corticosteroids, and shall provide such additional information about his or her use of growth hormone, local anaesthetics and/or corticosteroids as required by NCAA by-laws or regulations.

AGREEMENT, CONSENT, AND RECEIPT  
("CONSENT FORM")

I. DEFINITIONS

"Consent Form" means this document entitled Agreement, Consent, and Receipt.

"I" means the student-athlete signing this Consent Form and includes student-athletes under the age of 18 who sign this form through their parents or guardians as well as on their own behalf.

"Prohibited Substances" means the substances described in Schedule A attached to the Regulation (as it may from time to time be amended).

"University" means the University of Hawaii at Manoa.

"Regulation" means the Internal Management Regulation and Procedures for Drug Education and Testing of Student-Athletes at the University of Hawaii at Manoa.

II. UNDERSTANDINGS

- A. I understand that I do not need to sign this Consent Form.
- B. I understand that if I do not sign this Consent Form, I will not be eligible to participate in the University's athletic programs for intercollegiate competition and practice.
- C. I understand that any positive test result (as defined in part VIII.A of the Regulation) will become part of my records at the University and will not be available to other persons except those authorized below and except as provided by Family Education Rights and Privacy Act, 20 U.S.C. 1232g, Hawaii Rev. Stat. Ch. 92E, and other applicable laws.

III. AGREEMENT AND CONSENT

- A. I consent to be tested for evidence of the presence of prohibited substances in my body through the analysis of my urine in the manner and at such times as specified in the Regulation.
- B. I have been given a complete copy of the Regulation and this Consent Form and have read them.

- C. I have been given the opportunity to ask questions about the Regulation and this Consent Form, and have my questions answered by the University of Hawaii officials.
- D. I understand the Regulation and this Consent Form and agree to be bound by ALL the terms of the Regulation. I also agree to cooperate with respect thereto.
- E. I know and accept that the Regulation contains consequences if tests show forbidden amounts of a prohibited substance in my body. These consequences include: being suspended from the team, participation in a drug assessment, education, counselling and/or treatment program, loss of scholarship or other financial aid and other consequences as spelled out in Part IX of the Regulation.
- F. I know and accept that the Regulation prohibits me from taking prohibited substances, including illegal drugs, drugs prescribed by my doctors, and non-prescription drugs.
- G. I know that I can suffer consequences under the Regulation even though I know I was violating the Regulation. To minimize this possibility, I agree to inform the team physician of ALL drugs or medications I take or intend to take. I also will send copies of Schedule A of the Regulation and parts VII.N. and X of this Regulation (identifying the prohibited substances) to all of my doctors so my doctors will know which substances are prohibited by the Regulation.
- H. I agree that all urine provided by me under the Regulation will then become the sole property of the University.
- I. I consent to my parent(s) and/or guardian(s) being notified in the event that a test of my urine sample exhibits the presence in my body of a prohibited substance.
- J. I consent to the release of all drug test results based upon analysis of my urine to the Athletic Director or his designee, the Head Coach of my team, the Team Physician, the Head Trainer (or Head Women's Trainer, as appropriate), and other persons authorized by law.

IV. FOR STUDENT-ATHLETES UNDER THE AGE OF 18

I will notify the University in writing, within 7 days after my 18th birthday, if I do not wish to agree to this Consent Form and the Regulation.

By my failure to so notify the University and by my continued participation in an intercollegiate athletic program (competition or practice) after I attain the age of 18, I understand that I will continue to be bound by this Consent Form and the Regulation.

V. GENERAL

1. This Consent Form is severable. If any part of this document is found to be invalid, the remaining parts remain valid.
2. This Consent Form, together with the Regulation, is the entire understanding I have with the University in regards to testing for prohibited substances. Neither I nor the University can, in any way, alter the terms of this Consent Form except in writing, signed by me, and my parents or guardian if I am under the age of 18, and by the University.

DATED: Honolulu, Hawaii,-----

-----  
Student-Athlete

-----  
Parent/Guardian of  
Student-Athlete under the  
age of 18

-----  
Parent/Guardian of  
Student Athlete under the  
age of 18

RECEIPT

I acknowledge receipt of a copy of (1) this consent form and (2) the regulation.

DATED: Honolulu, Hawaii, \_\_\_\_\_

\_\_\_\_\_  
Student/Athlete

\_\_\_\_\_  
Parent/Guardian of  
Student-Athlete under the  
age of 18

\_\_\_\_\_  
Parent/Guardian of  
Student-Athlete under the  
age of 18

VERIFICATION FORM

\_\_\_\_\_  
Date

I, \_\_\_\_\_, verify as  
student-athlete  
follows:

1. I have delivered a sample of my urine to the head trainer or designee today.

2. I have selected a code number ( \_\_\_\_\_ ), and I have observed the head trainer or designee mark all the containers containing my urine sample with the code number I selected.

3. I have observed the head trainer or designee seal specimen bottles A and B containing my urine sample.

4. I have observed the following irregularities or unusual circumstances (e.g. container was soiled; container possibly switched with another urine sample; wrong code number applied or anything else that might appear suspicious to you):

If no irregularities, write NONE.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. I have received a copy of this verification.

\_\_\_\_\_  
Student-Athlete

\_\_\_\_\_  
Head Trainer or Designee

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