



ANTI-DOPING
NORWAY

What is efficient doping control?

A study of procedures and their justification in the
planning and carrying out of doping control in sport

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What is efficient doping control?
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Acknowledgement

This is a report from a study among anti-doping organisations on what constitutes efficient doping control.

The study was initiated and is financed by Anti-doping Norway (ADN) and conducted by researcher Dag Vidar Hanstad and Professor Sigmund Loland, Department of Cultural and Social Studies, The Norwegian School of Sport Sciences (NSSS). Professor Loland has been project manager, and researcher Hanstad has been responsible for data collection and interviews. Loland and Hanstad have cooperated in the interpretation and discussion of data and in the writing of this report.

The report is intended to serve as a working document for discussions at a Symposium on efficient doping control to be held in Oslo, May 26-27 2005. The organisers of the Symposium are ADN in cooperation with the World Anti-Doping Agency (WADA). In addition, the authors hope that the report will be of more general value and of interest to all those engaged in anti-doping activities.

The national anti-doping organisations (NADOs) and the international federations (IFs) interviewed in this study have been selected by ADN and NSSS. Most of the research interviews were carried out in the period between January 24 and February 8. The interviews in Norway and France were done in March.

We are grateful to the organisations and the individuals involved. Sincere thanks go to Richard W. Pound, Chairman of WADA, Rune Andersen, Director Standards and Harmonization of WADA, Anders Solheim, Chief Executive Officer of ADN, and Anne Cappelen, Head of Quality Affairs of ADN. We would also like to thank the participants we interviewed for their kind cooperation and we hope they find their efforts worthwhile. Possible mistakes and other shortcomings are the responsibilities of the authors alone.

Oslo, May 2005

Dag Vidar Hanstad

Sigmund Loland

Abstract

The mandate of this report has been to

1. describe organisational and financial terms for carrying out efficient doping control
2. describe different procedures and the justification in planning and carrying out doping controls
3. discuss critically the procedures in relation to the intention of detecting, deterring and preventing the use of doping

The mandate is interpreted as a quest for answers to the question 'What is efficient doping control?' The goal has been to find and discuss what seem to be key elements of best practice.

Information is collected from qualitative interviews with representatives from five national anti-doping organisations (ADOs) and two international sport federations (IFs) that are considered to function well, and with representatives from WADA. In addition, information is gathered from relevant documents and web pages on the Internet.

Based on an extended cost-benefit analysis, efficient doping control is seen to depend upon

- close coordination and cooperation between ADOs, primarily between NADOs and IFs
- ADO independence at the operational level from sport organizations and governments.
- good procedures for recruiting DCOs and strong DCO programs for education and accreditation
- clear and operational definitions of target and random testing, and of no-advance notice and advance notice testing
- the clear priority of no-advance notice testing
- clearly defined registered testing pools and reliable and simple systems for whereabouts information

Actions can be taken immediately that can improve the situation considerably:

- a key means to reach the goals of improved coordination and cooperation, and to make procedures linked to registered testing pools and whereabouts information more efficient, is the launching of WADA's ADAMS (Anti-Doping Administration & Management System)
- another key means is clear and operationable WADC definitions of target and random testing, and of no-advance notice and advance notice testing

The report is initiated and financed by Anti-doping Norway (ADN) with the support from WADA, and conducted by Dag Vidar Hanstad and Sigmund Loland, The Norwegian School for Sport Sciences (NSSS).

Abbreviations

ADAMS = Anti-Doping Administration & Management System
ADN = Anti-Doping Norway
ADO = Anti-doping organisation
COCADC = Chinese Olympic Committee Anti-Doping Commission
DCA = Doping Control Administrator *
DCO = Doping Control Officer
DCS = Doping Control Station
FISA = The International Federation for Rowing
IAAF = International Association of Athletics Federation
IC = In-competition (testing)
IF = International federation
IOC = International Olympic Committee
IPC = International Paralympic Organisation
IWF = International Weightlifting Organisation
NADO = National anti-doping organisation
NF = National federation
NOC = National Olympic Committee
OOC = Out-of-competition (testing)
RTP = Registered testing pool *
SAIDS = The South African Institute for Drug-Free Sport
TUE = Therapeutic Use Exemptions
USADA = United States Anti-Doping Agency
WA = Whereabouts information *
WADA = World Anti-Doping Agency
WADC = World Anti-Doping Code
WADP = World Anti-Doping Programme

* = Not an abbreviation used in the World Anti-Doping Code, only in this report

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1.0 INTRODUCTION¹

“Until we get to the point where everybody understands that it is wrong to use doping, it is very important that everybody knows that there are very reliable tests in existence. The tests are getting better and there are testing protocols that are better.”

RICHARD W. POUND, Chairman of WADA

In 2004 169,187 doping controls were carried internationally out of which 75 percent were in sports included in the Olympic Programme. A total of 1,72 percent of these tests are adverse analytical findings², a fact that seems to indicate that sports are practically clean. However, does these statistics represent a realistic picture of the situation? Can doping controls detect most of the offenders? Are doping controls in sports organised efficiently in order to reach the established goals in the anti-doping work, namely to detect, deter and prevent? (WADA 2003a, p.1.)

This is a study on what characterises efficient doping controls. In this chapter we will outline the background of the study, present the mandate and key questions as well as the structure of the report.

1.1 WADA – A Leap Forward

The establishment of the World Anti-Doping Agency (WADA) in 1999 and the Copenhagen Declaration of 2003 seem to be the most decisive steps in the fight against doping so far. As can be read on WADA’s website:

”WADA is a foundation under the initiative of the International Olympic Committee (IOC) with the support and participation of intergovernmental organisations, governments, public authorities and other public and private bodies fighting against doping in sport. The agency consists of equal representatives from the Olympic Movement and public authorities” (www.wada-ama.org)³.

¹All quotes in brackets are from the research interviews in this study

²The percentage of sanctioned cases are lower because the figures from the WADA statistic may contain findings that underwent the therapeutic use exemptions (TUE) approval process. There may also be multiple measurements on the same athlete.

³ www.wada-ama.org/en/dynamic.ch2?pageCategory_id=12

The World Anti-Doping Code (WADC) is the core document in the World Anti-Doping Programme (WADP). The programme comprises three levels and includes: The World Code (level 1), International Standards (level 2) and Models of Best Practice (level 3).⁴

The WADC defines a series of guidelines for anti-doping organisations (ADO). For example, all ADOs are expected to have routines for Registered Testing Pool (RTP), Whereabouts Information (WA) and Therapeutic Use Exemptions (TUE). These guidelines have several practical consequences for ADOs, among those the need for more employees and hence an increase in financial expenses.

By cooperating with the IOC, WADA has effective means of sanctions towards international federations (IFs) and National Olympic Committees (NOCs) by using possible exclusion from the Olympic Games for those who do not adapt to the Code.

1.2 ADOs' Role

An ADO is a signatory that is responsible for adopting rules for initiating, implementing or enforcing any part of the doping control process. The IOC, the International Paralympic Committee (IPC) and other sports organisations carry out controls during their own events, but on a daily basis, this is the responsibility of the IFs and national anti-doping organisations (NADOs).

ADOs on a national and international level have test distribution planning and doping control officers (DCOs), but only a few IFs have their own officers who carry out tests (e.g. the International Football Federation (FIFA), the International Cycling Union (UCI) and the International Weightlifting Federation (IWF)). WADA does not have their own doping control personnel, but goes through NADOs or independent commercial agents to have DCOs carrying out the desired tests.

The efficiency in the control work depends upon NADOs and IFs being able to work closely and efficiently together. Once and again, they test the same athletes without coordinating. As will be observed from the collected data, there is a trend that some NADOs and IFs do not seem to trust each other with regard to anti-doping work.

⁴ The WADC (2003a) p. 1-2.

1.3 The Athletes

Obviously, some athletes take drugs. However, the great majority have been spearheads in the fight against doping. There are athletes' commissions on both international and national levels (the Athletes' Commission in IOC was established in 1981, and as of 1999, fifteen athletes are members of the IOC), and they all take a firm public stand against doping. During the reform process in IOC and the development of WADA, the athletes were important collaborators. On its first International Forum in Lausanne, 2002, the Athletes' Commission presented a final recommendation⁵ and: "encouraged the Olympic Movement and all its partners to give full support to the acceptance and implementation of the WADA Anti-Doping Code. "

It was also claimed that athletes were to assume total responsibility for the consumption of all substances, including dietary supplements which could result in a positive doping test.

As is indicated by athletes' commissions' statements and positions, athletes consider anti-doping work as being in their own best interest. Hence, most athletes submit willingly to a test regime that is both time-consuming and troublesome. Some athletes even make extra efforts in demonstrating their clear anti-doping attitudes. The Norwegian paddler, Eirik Verås Larsen, World Champion (2002) and Olympic champion (2004) is among the athletes who have given the general public Internet access to all data from his doping tests (see appendix 2).⁶ Athlete transparency will become increasingly important in the future when the best athletes are placed in Registered Testing Pools and must hand in Whereabouts Information.

1.4 Current Status

The first doping tests were carried out in the 1950s. UCI started testing in the beginning of the sixties (Catlin 1987). According to Verroken&Mottram (2003), football was the first one to test during the World Championship (England in 1966), while IOC introduced their controls for the first time in Grenoble (winter) and in Mexico (summer) in 1968.

⁵ http://multimedia.olympic.org/pdf/en_report_568.pdf

⁶ According to Veraas Larsen's own statistics on www.veraaslarsen.com

Through the years, the justifications and the priorities regarding the control work have been shifting. The fight against doping started with a wish to detect use and later to detect and deter athletes from taking drugs. The idea of prevention gained momentum in the 1990s and indicates an important goal for anti-doping work in the future.

Today, anti-doping work seems to undergo a positive development. In the Olympic movement, where most of the tests are taken, there are 202 NOCs that all have accepted the WADC and are undertaking anti-doping work. Preferably, these operations are being carried out by an independent, national organisation; a NADO.

However, this ideal does not reflect the full reality. Among the NOCs, not even half of them test their own athletes for drugs. Among the approximately 90 that do test, not even half have programmes that meet the demands of the WADC. The remaining 40 have their own NADOs. When addressing WADC requirements of registered testing pool, whereabouts information and out-of-competition testing, even more committees must be left out.

If the requirement on a good NADO means ISO-certification or taking out-of-competition tests for WADA, or the following of WADP and conducting a reasonable number of efficient controls, we are down to about twenty NADOs that meet the requirements. Figure 1 is an attempt to describe these facts.

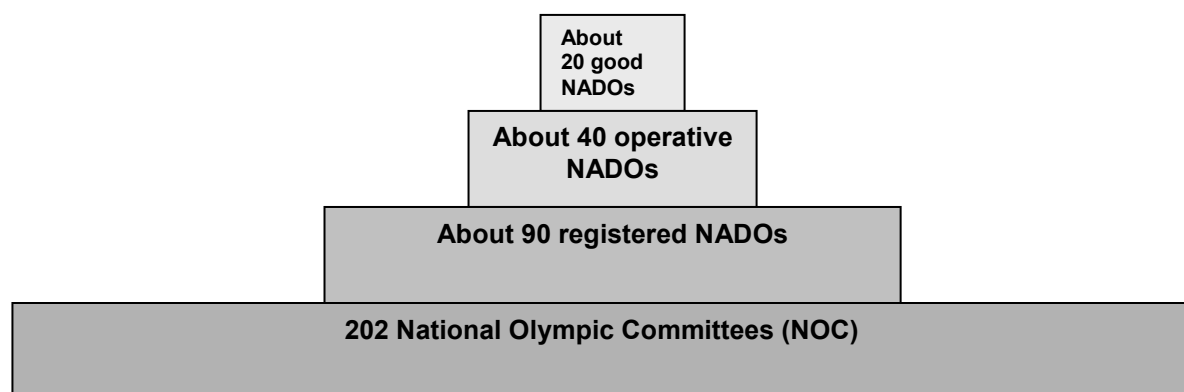


Figure 1: A tentative overview of NADOs with reference to good anti-doping work

Correspondingly, the 35 international Olympic sports federations must meet the following requirements of adopting and implementing "...anti-doping policies and rules which conform with the Code"⁷ (WADA 2003a). The fact is that the number of

⁷ WADA Code 20.3. Corresponding to IOC (20.1), IPC (20.2), NOC (20.4), NADO (20.5) Major Event Organisations (20.6) and WADA (20.7)

well-run ADOs is just as low as the case of NADOs. The situation is illustrated in figure 2.

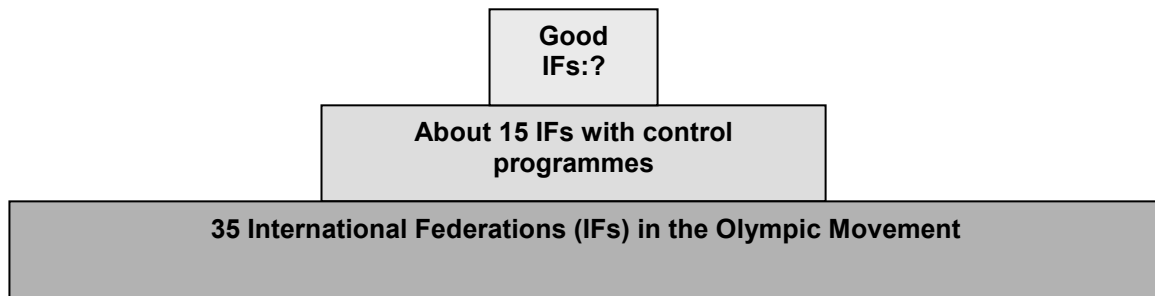


Figure 2. A tentative overview of IFs with reference to good anti-doping work

Considering this fact, is it really correct that only one to two percent of the athletes use performance-enhancing drugs? Perhaps the low number is due to the lack of efficiency in the doping control itself, or analysis methods that are not yet good enough?

It is, however, a fact that testing methods have improved from year to year. In the 1980s, in-competition tests became increasingly more common whereas during the 1990s, out-of competition testing was normal. During the last decade, to a great extent, focus has been on the development of methods on how to detect use of substances such as erythropoietin (EPO), tetrahydrogestrinone (THG) and human growth hormone (hGH). Internationally, the number of doping tests has increased the past few years and press releases on the Internet indicate that many ADOs want to present the number of tests taken each year.⁸ Still, the question can be posed on whether there has been too much focus on quantity rather than quality?

1.5 Cultural Differences

With the WADA, a global perspective was institutionalised in the struggle against doping. In sports, nations and continents where progress is slow, WADA has a particular engagement. It is a fact, however, that anti-doping work is not the number one priority in all countries. Several member nations of the IOC are very poor and for these nations it is more important to give priority to basic premises for sporting activities such as facilities and the education of coaches and leaders rather than an anti-doping programme. Nevertheless, measures are needed to follow up successful

⁸ See link to NADOS; www.wada-ama.org/endpointdynamic.ch2?pageCategory_id=10

athletes from these nations as well. There are examples where this has not happened, especially with regard to long-distance running. The establishment of regional offices is a result of a positive initiative organised by WADA.⁹

Moreover, there is a need for a discussion on whether and to what extent different attitudes towards anti-doping work should be accepted. There are different views on individual rights and obligations in different cultures and nations and there are different views on which types of controls that are acceptable.

In some parts of the world, getting caught using drugs leads to public condemnation, not only in elite sports but also on lower levels. In his book *Sport, Health and Drugs*, Ivan Waddington puts it like this:

”... a large majority of people in Western societies are strongly opposed to the use of drugs in sport, (...) can be seen in the often highly emotive and almost always condemnatory treatment of drug cheats”.

(Waddington 2001, p.177.)

Waddington refers to a survey on public attitudes towards doping in sport, carried out by the British Sports Council in 1994. More than half of the participants felt that athletes who used steroids should be given life bans.¹⁰

In local communities, a doping sentence also implies exclusion from other areas in society. Former Olympic champion and now a member of the IOC, the Norwegian skater Ådne Søndrål characterises the attitude to doping in his country like this:

”Getting caught in doping is the second-worst crime a Norwegian can commit. In my opinion, only child abuse disgust people more. Doping is a high treason against the nation.”¹¹

Other systems have a different outlook. The story of the doping regime of the former German Democratic Republic (GDR) is a frightening one. Systematic use of

9 WADA has regional offices in Europe (Lausanne in Switzerland), Asia og Oceania (Tokyo in Japan) and Africa (Cape Town in South Africa. In May 2005 WADA's Executive Committee announced that it will open a Latin American regional office in Montevideo, Uruguay.

10 Sports Council (1996): Doping Control in the UK

11 The Norwegian newspaper Aftenposten, 5 March 2002. For a review of attitudes toward performance-enhancing means in the general Norwegian population, see also Loland et al (2003).

doping was seen as legitimate in the quest for ideological prestige. Sport and individual athletes were considered means only towards this overall goal (Spietzer 2005). The GDR is gone, but as recent drug scandals in sport indicate, there may indeed be similar attitudes towards drug use in some sports subcultures and political regimes today.

In general, however, and in spite of more or less extreme views on the doping issues in marginal groups, the predominant view in the global sport culture seems to be that doping use is detrimental to sport and that it ought to be fought systematically and decisively while at the same time meeting basic requirements on the individual rights and duties. This is a study of what constitutes efficient doping control within this more general normative framework.

2.0 MANDATE AND REPORT STRUCTURE

2.1 Mandate

The mandate of this study as given by Anti-Doping Norway is to:

1. describe organisational and financial terms for carrying out efficient doping control
2. describe different procedures and justifications for planning and carrying out doping controls
3. discuss the procedures in relation to the intention of detecting, deterring and preventing use of doping

We have done the following interpretations:

- The WADC defines doping control as "... the process including test distribution planning, sample collection and handling, laboratory analysis, results management, hearings and appeals" (WADA 2003a). The main focus of the study is on test distribution planning and sample collection. The study ends when the urine or blood sample has been taken. In our view, the quality of the testing itself is a minimum requirement for good anti-doping work. If we were to analyse everything that pertains to the WADA's definition, the report would be too comprehensive.

- The report is based on document studies and interviews with ADOs. It has not been our mandate to describe and discuss the athletes' point of view. Athlete perspectives will be presented when advantages and disadvantages with regard to different aspects of the controls are evaluated. However, these reflections are not based on original interviews.
- The third item laid down in the mandate asks for a critical evaluation of different measures in anti-doping work with regard to WADA's objective to detect, deter and prevent. Based on our material, it is evident that the main focus so far has been on detection and deterrence, two objectives that in most cases are overlapping. In general, there is less emphasis on preventive measures. This, however, is likely to change.¹² To quote WADA's chairman Richard W. Pound:

"Later, in a generation or two, I hope that we have been able to educate athletes, parents, teachers, coaches and entourages in a way so that the number of tests can be reduced."

A thorough analysis of efficiency in terms of prevention measures is a complex and comprehensive task and is outside the scope of this study.

- It is important to underline that the mandate does not ask for a representative picture of anti-doping work internationally, a question that would have demanded a far more extensive study than this one. The idea here is to examine anti-doping work in nations and international federations where this work functions very or reasonably well. This report is based on case studies with a main intention of finding elements of *best practice* in the field.

The mandate can be summed up by asking:

What is efficient doping control?

¹² We must stress the fact that WADA and many other ADOs have come a long way in this work. There are educational programmes, lectures, stands, brochures and seminars. This work focuses on athletes on all levels. Nevertheless, organisations with little resources will probably give priority to elite athletes. NADOs hand out material to sports federations, organisers and schools in addition to athletes.

2.2 Structure

In the opening chapters 1 and 2, we give an account of the background and mandate/problem for discussion as well as delimitations and structure of the report.

In chapter 3, a brief account is given of the method used in collecting the data.

In chapter 4 we outline the analytical framework for the discussions. A model is presented for efficient use of resources in the form of an extended cost-benefit analysis.

Chapter 5 presents results and discussions. The first part of the mandate (question 1) focuses on issues regarding organisational and financial aspects of efficient doping controls. The main emphasis is on organisational aspects, which are discussed in 5.1-5.4.

In chapters 5.5-5.10, the emphasis is on points 2 and 3 in the mandate are discussed and not separately to avoid overlapping and repetition of points.

In chapter 6, an overall discussion of findings is presented. We develop the cost-benefit analysis and go through the discussed measures in anti-doping work one by one.

In chapter 7, we conclude by outlining what seems to be the most important measures in a scheme of best practice in efficient doping control.

3.0 METHOD AND SAMPLE

3.1 Method

The report is mainly based on interviews with key personnel in seven different ADOs and in WADA. The interview guide (see appendix 3) has been developed in cooperation with ADN and WADA. We have also examined a number of documents, mainly documents regarding the WADP, statistics from individual ADOs as well as other relevant literature on anti-doping work.

There are several potential weaknesses in a qualitative study such as this. For a full review of qualitative interviews as a research method, we refer to Kvale (1996). What follows here are a few points of particular relevance to this report.

In research on social phenomena such as anti-doping upon which there is strong, normative consensus, there is a potential risk of yes-saying, i.e. respondents answer what is politically correct, or in line with the WADC. We can control this to a

certain degree by asking follow-up questions and comparing with statistics and facts found in documents and on the Internet, but we will not know if we at all times are presented with realistic answers. The presented material has nevertheless provided nuances and differences that will stimulate discussion.

Information from each ADO has been anonymised in the report except for information considered to be "harmless". Since the report makes an effort in pointing at possible means of cooperation between ADOs in different sports, cultures and regions, ADOs can be identified in some cases. We would therefore like to emphasise that representatives from all ADOs participating in the study have read and approved of the content of this report. This also applies to quotes and other examples where the ADO or individuals can be, or are, identified.

3.2 Participants

With regard to the participating organisations, it is important to repeat that the report is not an attempt to give a representative idea of international doping work. The objective is to discuss key elements in efficient anti-doping work and assess elements of best practice. The interpretation of the mandate is decisive for the selection of respondents. We have not interviewed any "villains" in the fight against doping, but looked at what is assumed to be well functioning ADOs from different parts of the world. The goal has been to find strong aspects of their work, what separates them from each other methodically and organisationally, and what can be improved.

The ADOs participating in the study are:

National anti-doping organisations (NADOs):

- The South African Institute for drug-free sport (SAIDS): Daphne Bradbury, Chief Executive Officer and Fahmy Galant, Project Officer.
- Anti-Doping Norway (ADN): Anders Solheim, Chief Executive Officer, Anne Cappelen, Head of Quality Affairs, Lindbjørg Stølan, Doping Control Manager and Gunvor Aase Hole, Education and Information Manager.
- United States Anti-Doping Agency (USADA): Terry Madden, Chief Executive Officer, Larry Bowers, Senior Managing Director, Kate

Mittelstadt, Doping Controlling Director, Karen Casey, Education Director, Michelle Freddolino, Director of Legal Affairs.

- Chinese Olympic Committee Anti-Doping Commission (COCADC): Wang Xinzhai, Officer of Anti-Doping office, Chen Zhiyu, Deputy Director of Testing.
- France: Ministry of youth, sport and associative Life, Direction of Sports: Sophie Chaillet, head of the office of protection of sportsmen and public, and Dr Bernard Simon.

International federations (IFs):

- International Association of Athletics Federation (IAAF): Dr. Gabriel Dollé, Chief of the Medical Anti-Doping Department and Huw Roberts, General Counsel.
- The International federation for Rowing (FISA): Matt Smith, Executive Director.

World Anti-Doping Agency (WADA):

Richard W. Pound, Chairman, Rune Andersen, Director Standards and Harmonization, Rob Koehler, Deputy Director Standards and Harmonization.

The anti-doping work is in constant development. This especially applies to organisational work. When working with our study, we experienced that at least two organisations are in the progress of changing structure. France is facing a restructuring with an emphasis on independence from the state bureaucracy. On April 6 this year, the lower chamber of the French parliament passed a new anti-doping act. A new organisation will be in place in February 2006 at the latest. Also China may change structure.

4.0 EFFICIENT DOPING CONTROL – AN ANALYTIC SCHEME

The main question of the report is what constitutes efficient doping control? As have been mentioned above in the WADC, ‘doping control’ is defined in a direct, operational manner. Although there are complex physiological, medical, social, cultural and philosophical aspects of such controls, its definition as a practical enterprise should be clear and uncontroversial¹³. As previously mentioned, we understand doping control, taken in terms of a urine or blood sample, as a control of whether athletes have used substances or methods that are banned on the WADA doping list, or not.

The term “efficient” refers to a theoretical concept and is open to interpretation. According to dictionary definitions, “efficiency” refers to “...the ability to do something well or achieve a desired result without wasted energy or effort, or the degree to which this ability is used”.¹⁴ To act efficiently implies choosing the best and most rational means to reach a goal. However, in many circumstances this is a difficult matter. In matters of social control, for instance, whether we talk about control of traffic, crime, or of drug abuse in society or in sport, there are many different opinions with regard to the goals of such control and how they are reached in the most efficient way. If these views are elaborated and articulated in systematic and critical ways, they form theories of efficient control in the fields examined. We will now sketch an analytic framework for the systematic and critical discussion of efficiency with regard to doping control in sport.

4.1 Cost-Benefit Analysis

An extensive discussion about the goals of doping controls is beyond the scope of this report. Here we simply adopt WADA’s position. In the WADC, there is a series of references to the ethical concern for individual athletes’ rights and health, and concern for fair and good sport (WADA 2003a, p.1, 3, 50). Doping control is a means to meet these more general, ethical concerns. The more specific goals of doping control are to detect, deter, and prevent doping (ibid, p.1). The report focuses on how to reach these more specific goals in efficient ways.

¹³ For a historical overview of the development of doping, see Houlihan (2002).

¹⁴ Encarta World English Dictionary, 1999 Microsoft Cooperation.

A zero-vision is that doping is eliminated. Goal realisation would probably imply a constant and continuous monitoring of all athletes. Although such a solution would satisfy a naïve account of efficiency, this is deeply problematic from practical, financial and ethical perspectives. What is needed here is a more realistic and critical account of efficiency under scarce resources.

Such accounts can be found within the theoretical framework of welfare economics, decision theory and ethics. In welfare economics, individual welfare (not group or society welfare) is the key unit of measurement. A basic condition is that individuals are the best judges of their own welfare, and that they will prefer greater welfare to less welfare.¹⁵ Hence, the terms of welfare economics cohere with WADA's concern for the welfare and fair treatment of each individual athlete.¹⁶

Moreover, within welfare economics there is a long tradition of examining the most efficient distribution of resources to maximize individual welfare. Such distribution schemes usually take the form of cost-benefit analyses. In discussion of efficient doping control, a cost-benefit analysis can go as follows:

A first step would be to outline total expected costs and total expected benefits of doping controls. A second step is to compare costs and benefits and develop control schemes so as to reach the optimal balance between the two.¹⁷

Below we will sketch a framework for such an analysis. It should be emphasised that evaluation of costs, benefits, and optimality cannot be done in exact, mathematical manners. We deal with complex social systems here and can only estimate approximate costs and benefits. However, the systematic cost-benefit approach serves as an ideal for the analysis and facilitates critical and systematic discussion.

4.2 Expected Costs

Doping control has costs of many kinds. Key costs can be systemised as follows:

Individual costs: Elite athletes in Registered Testing Pools are tested regularly,

¹⁵ For a good introduction to decision theory linked to ideals in welfare economics, see Hammond et al 1999.

¹⁶ See e.g WADA Code, article 8, "Right to a fair hearing"

¹⁷ Within welfare economics, 'optimality' usually refers to Pareto-optimality (named after Vilfred Pareto, an Italian economist). Simplistically speaking, an economical system, or a policy system such as doping control, is Pareto-optimal if no individual can be made better off without making anyone else worse off. In an efficient doping control system, there are no measures that can improve one individual's situation without making other individuals worse off. Or, contrary, in a sub-efficient or inefficient doping control scheme, (Pareto) improvements can be made that make at least one individual better off without making anyone else worse off.

and some of them are tested more than 20 times a year.¹⁸ Extended testing schemes might represent reduction in athlete welfare. The time needed, the stress involved, and the potential insecurity felt by athletes of positive tests (justified or not), should be kept at a minimum as compared to the benefits of the tests. However, as said above, most athletes are willing to endure quite rigorous testing regimes to help realise anti-doping goals.

Financial costs: The cost of one doping control, including control officers, travels, analyses of samples, etc. is by the USADA estimated to be approximately 300 USD.¹⁹ With as many as 169 000 tests a year world wide, this will cost 50m USD. Adding operational costs, costs linked to research, etc. a modest estimate would be about 100m USD global expenditure annually on anti-doping activities. One critical perspective could be to examine how much sport infrastructure (facilities etc) could be built for the same amount of money to provide improved conditions for mass sport.²⁰ There is probably a limit in which the costs of doping control overrun the benefits of alternative use of resources in sport.

Socio-political costs: With socio-political costs, we refer to costs concerning the social and political trust in and support of the anti-doping work. Socio-political costs are costs to the public image of anti-doping. Since its arrival in the public sphere in the 1960s, the use of performance-enhancing drugs has tarnished the moral image of sport. The negative image is in part due to athletes' use of drugs, and in part to what some see as sports organisations' lack of will and ability to do something with the problem. As mentioned in the introduction, in most parts of the world, positive doping cases are considered a disgrace and embarrassment, not just for the athlete involved, but for the sport organisation and the nation to which the athlete belongs. The establishment of the WADA as an independent and transparent global anti-doping body has contributed significantly to improving this image. However, requirements of registered testing pools and rules for whereabouts information might give negative images of sport as an Orwellian 'Big Brother Society'

¹⁸ The world's best female cross-country skier in the 2004/2005 season, Marit Bjørgen, was, according to her coach, tested about 40 times during the nine months prior to the World Championship in Oberstdorf 2005. He made this statement to the Norwegian newspaper, Adresseavisen, 5.februar 2005. We will not look any closer at this particular example, but so-called health tests (taking blood samples before competitions) are in some cases incorrectly considered to be a doping test. Blood and urine samples are also by some incorrectly considered to be two tests.

¹⁹ Cost controls vary. The estimated cost of 300 USD includes analysing costs, DCO costs, equipment, freight, insurance, etc. It does not include payment/administrative costs to full-time employees.

²⁰ Another even more general calculus could be to reflect on the use of resources in anti-doping work as compared to other worthy needs in global society; the struggle against famine and poverty, against environmental problems and political suppression, etc. These more general discussions cannot be taken here. Our task is to concentrate on the costs of doping control for the sporting community per se.

in which individual freedom and responsibilities are overrun. Again, due to socio-cultural ideals of individual freedom, at least in the Western world, there are socio-political limits to the extent which anti-doping means are acceptable.

4.3 Expected Benefits

Doping control has benefits of many kinds. The key benefits can be systemised as follows:

Individual benefits: Above, we mentioned that individual costs in terms of time, energy and insecurity linked to doping controls should be estimated carefully. The number of tests should be kept at a minimum without decreasing significantly the possibilities to detect, deter, and prevent. On the other hand, the benefits of efficient doping control in terms of individual welfare are immense. This point concerns the very rationale of the anti-doping work: fair sport and the health of individual athletes. Drug use has a coercive effect: If one athlete uses performance-enhancing drugs and is considered by other athletes to get a competitive edge, other athletes are coerced into using drugs to be able to compete and hence expose themselves unwillingly to the risk of being caught and to health risks (Murray 1983). Hence most athletes are strongly in favour of efficient and reliable testing systems. Empirical data supports the idea of athletes being willing to submit to quite rigorous doping control regimes as they consider this in their own interest (Loland et al 2003).

Financial benefits: Intuitively, it can be assumed that the more tests taken, the more cheaters are detected, the more athletes are deterred from doping, and the stronger prevention is achieved. In a long term perspective, it can be assumed that the financial potential of sport depends upon its being clean of drugs. Surveys demonstrate that the majority of the public wants clean sport, that is, sport without drugs (ibid). Investment in anti-doping is the morally right thing to do in terms of human welfare, but is probably financially the right thing to do as well. However, as indicated above, there are limits to resources to be poured into control systems. Critical examination is needed on where to draw the line in terms of increasing the numbers of test.

Socio-political benefits: With socio-political benefits, we refer to benefits concerning the social and political trust in and support of the anti-doping work. Socio-political benefits are benefits in the public image of anti-doping. The very role of elite sport in modern society is built on views of athletes as role models, on sport as a

means in local, regional, and national identity construction, and on its entertainment values. A certain investment indicates moral responsibility and it can be assumed that it pays off in the long run. Hence, socio-political benefits are the stabilisation/enforcement of the social and moral values of sport in society.

5.0 RESULTS AND DISCUSSION

“If we are going to win the fight against doping in sport we need to carry out effective test planning that encompasses no-notice target testing based on an in-depth knowledge of the sport, scientific research, statistical analysis and information received about possible suspicious behaviour.”

RUNE ANDERSEN, Director Standards and Harmonization WADA

What is efficient doping control? Or, more precisely, how can the anti-doping work reach an optimal balance between costs and benefits?

The empirical basis of this report consists of interviews and text analyses in a search for good measures in efficient doping control. Presentation of results and discussion will be linked to the framework of a cost-benefit analysis in which each anti-doping measure is systematically discussed in terms of individual, financial, and socio-political costs and benefits. In a final, concluding discussion, we will give an overall review of the results and suggest what we consider to be key elements and proposals for best practice in efficient control.

This main part of the report has been divided into sub-categories that are structured thematically. We will start by looking at organisational factors (5.1–5.4), in particular how they affect efficiency in doping control, before studying the planning process and looking at how doping controls are carried out (5.5 – 5.10).

The structuring of topics coheres with the structure of the interview guide (see appendix 3). Each sub-chapter starts by illustrating the subject matter and bringing up important issues that we will describe and discuss. In each chapter we will outline a preliminary conclusion on how each specific measure affects cost-benefit and efficient doping control. We will also present recommendations in grey boxes.

5.1 The Independency of ADOs

Organisational relationships in anti-doping work have been an introductory theme in the interviews. Independency is one of WADA's core values. This is stated in the strategic plan 2004-2009: "We are impartial, objective, equitable and balanced." (WADA 2004c, p.4). The entire work is imbued with such objectives. To what extent is the ADOs sufficiently independent of the sport it is controlling, and what about the relationship to the government upon which most ADOs are dependent?²¹

It was public authorities and not the sports world that increased the momentum in the anti-doping work in 1998-99. This happened after the doping scandal in Tour de France in 1998 where the French police got involved and detected extensive abuse of drugs. The incident was followed up and governments all over the world got involved when WADA was established.

Nevertheless, the goal is that NADOs all over the world shall be independent from their governments in their respective countries²². Even though many NADOs are partly or fully financed by the government, and even if government representatives can be members of executive committees or foundation boards, the operative anti-doping work is to be carried out with no external interference from either from sport or from public authorities.

Such independence is the current situation for many NADOs, at least formally. Since all the participating organisations in our study pointed at the significance of such independency, we do not pursue the value of independency here. Instead, we will take a look at how things work at the level of doping controls. This is the operative level on which the independency ideal is tested out in practice.

Can NADOs plan and carry out doping controls without sport organizations being informed?

All NADOs in our sample state that they are independent from sport. When organising doping controls, however, the set up of doping control stations often requires cooperation with sport organizations, for instance by using facilities in the sports club that are at the federation's or the organiser's disposal. The NADOs must check the availability of the facilities in order to set up a control station. This applies both to in-competition testing (IC) and out-of-competition testing (OOC).

²¹ The chapter will focus more on NADOs than ADOs in international sports federations.

²² WADC article 22, comment: "Most governments cannot be parties to, or be bound by, private non-governmental instruments such as the Code."

In this respect, sports organisations will be informed about the control even though they do not know which athletes will be picked out for testing. But in these practical matters, independency in the sense of NADO operating totally on its own seems hard to achieve.

Is it problematic that NADOs are used by sport as a clearing house?

Most national sports federations ask or employ NADOs when they need out-of-competition testing. Some NADOs decline as matter of principle. They carry out tests based on their own planning only.

Other NADOs carry out testing based on enquiries made by the national federations. However, they still claim their independency. One of our sources says:

“If there are eight athletes whose identity is not known and who are requested to be tested, we decide if we take the tests on target basis or random basis and when we do it. They don’t have anything to say at all. And they don’t pay for it so they can’t request any special time.”

Enquiries from the national federations will probably increase in the years to come, especially from smaller federations. This may be due to the desire to prevent doping as well as a pressure from their international federation which seeks to document as many tests as possible worldwide.

The United States Anti-Doping Agency (USADA) is in a special situation because the agency must act in accordance with a new American anti-doping regulation: Within 120 days prior to the Olympic Games, each candidate to the American Olympic team must have been tested at least one time. USADA decides who will be tested, when and how. A certain share of these tests will be OOC tests, others will be given no notice. Some of the tests will be carried out during training camps, in competition, etc. How these tests are carried out has not been specified in the regulations. During the period of 120 days, athletes do not know at what time they will be tested. Some of them will be tested four or five times depending on particular sports’ risk profile.

It may be claimed that this system is being introduced by the NOCs in order to avoid or reduce the risk for doping scandals during the Olympic Games. Whether the

anti-doping organisation is comfortable with this kind of practice or not, is an interesting issue which ought to be discussed further.

Can independency be a disadvantage with regard to prevention?

All anti-doping work is now being permeated by the requirement of independency. To move doping control authorities away from sport is considered to be of major importance in order to have controls that truly detect and consequently deter. This also gives the anti-doping work socio-political legitimacy. However, the quest for independency could be a disadvantage in realising measures of prevention. If NOCs/NFs consider their anti-doping work to be NADOs' responsibility and stay away from preventative work, the close contact with and influence on athletes from easily decrease. Sport organizations have the closest contact with the athletes, and are as such the proper instruments in order to influence and educate athletes from an early stage on.

Cost-benefit:

Organisational independency is a key benefit from the individual and the socio-political perspective. In this respect, independency has only advantages. In addition to possible problems with the practicalities of prevention measures, the main cost is of a financial character. ADOs cannot be expected to be financially self-supportive and there is a need for sport and state financial support. Here, then, independency ought to be clearly operationalized by the WADA as full public transparency when it comes to funding and as no direct influence from funding parties on the anti-doping work. If so, costs are more than compensated.

RECOMMENDATIONS:

1. ADOs ought to be independent from sport organizations and public authorities.
2. Independency can be questioned if the ADO is financed/receives financial support from sport and/or public authorities. However, without such funding, ADO activities become difficult. The key criterion ought to be full public transparency of, and clear restrictions on influence from funding parties on the operative level.

5.2 Cooperation between NADOs and IFs

“The importance of coordinating between NADOs and international federations is that many of the international federations have no idea of where all the athletes at the national level are training and what they are doing.”

RICHARD W. POUND, Chairman of WADA

NADOs as well as IFs work with anti-doping. Should cooperation between NADOs and IFs be developed any further? One example is the testing that is performed on athletes out of competition in registered testing pools (we will get back to this topic in chapter 5.5). Is it efficient use of resources to have IFs carrying out these tests with their own doping control officers or control officers from private, commercial agents in a country where a well-organised NADO already exists? Is it not the case that there will be inefficient double testing here?

How is the cooperation between NADOs and IFs today?

Before suggesting an answer, we have to take a retrospective look. The relationship between NADOs and IFs has been characterised by a lack of trust. NADOs have suspected IFs to have protected their own sports and athletes with the main purpose of avoiding doping scandals. Doping scandals can ruin any sport's image and scare off sponsors.

The same argument can be used when discussing anti-doping work on a national level, particularly in countries where the NADO has strong formal and informal links to sport or government. Even though the use of sport in reaching ideological and national prestige was much more obvious in the 1970s and 1980s (e.g. GDR and the Soviet Union versus the West, in particular versus the US), sport is still very important in this sense. It can be speculated that national bodies have an agenda to avoid the most efficient tests and thus avoiding doping scandals.

A current argument these days from some IFs is that NADOs are not operating efficiently enough. IFs are concerned that NADOs are not able to carry out no-notice tests in a satisfactory manner. Hence, some IFs are recruiting their own doping control officers. We have also noted that financial costs are important. NADOs must be financially competitive.

Requirements from the WADC on a registered testing pool and whereabouts information (see chapters 5.5 and 5.6) press for better cooperation between IFs and

NADOs, and for better communication with athletes. Athletes' motivation to contribute depends at least to a certain extent upon efficient procedures. Let us give an example: It would be a waste of resources and very annoying for an athlete in athletics to be tested both by the international federation, WADA and the NADO in the course of two to three days. This actually happens from time to time

Correspondingly, it is a waste of resources for both the ADOs and the athletes to provide whereabouts information to more than one ADO. For the time being, there are NADOs represented in this study that do not know how many athletes in their own pool who are also in a pool organised by others. A NADO source states the following:

“In some sports we have started to work with the IF, but formally I only have knowledge of seven IFs. It's very confusing. All athletes in an IF pool is also in our pool.”

And an IF source told us this:

“We don't have this approach from country to country. It is something that we would try to introduce especially in order to know which athletes from our pool that are in a systematic international testing programme.”

Obviously, this should be coordinated, perhaps in the sense that NADOs with good and efficient procedures in these respects could do whereabouts information and out-of-competition tests for IFs with less resource.

How can WADA contribute in order to improve cooperation?

According to WADA's Chairman Richard W. Pound

“...the importance of coordinating between NADOs and international federations is that many of the international federations have no idea of where all the athletes at the national level are training and what they are doing. So the NADOs, in fact, are their agents in each country and I hope that those relationships will improve over time as the mutual confidence increases.”

WADA intends to contribute to improving the cooperation through the Anti-Doping Administration & Management System (ADAMS). This is a web-based system to which, according to WADA, all participants will have access in the course of 2005.²³ All relevant information will be entered into a system consisting of four platforms; whereabouts information, therapeutic use exemptions, clearing house and doping control platform. The establishment and implementation of this system seems to be of crucial importance to efficient anti-doping work.

What about cooperation in other fields?

So far we have discussed cooperation with regard to the control work. What then about the role of cooperation between NADOs and IFs when it comes to preventive measures?

During visits to various ADOs, we have registered high quality information and educational material for athletes. Much of this information is available on the Internet. In terms of web pages, however, the quality varies. Some ADOs have very informative web pages with an educational agenda including, among other things, short video clips. This is something which requires considerable resources and it will be a waste if all ADOs were to produce their own material. In other words: When for example USADA has an excellent video clip that describes the procedures in doping control, this should also be used on other ADO web pages. If copyright is a problem, other ADOs could list a link directly to the USADA's web site. The whole thing could be coordinated by WADA.

The ideal would be to create a data base with ideas from which each ADO could download information material for use on their own web pages.

Cost-Benefit:

It is hard to see anything but benefits when it comes to increased cooperation between NADOs and IFs. Individual athletes would avoid double testing but still experience serious anti-doping work. Improved coordination requires no significant financial costs. On the contrary, financial efficiency can be improved. Socio-politically, the reputation of anti-doping work will only be strengthened. Increased cooperation of

23 From WADA's website the following can be read: "The ADAMS system is at the heart of WADA's mission - that of accelerating compliance of countries and sporting organisations to the World Anti-Doping Code. Over a period of time, over one million individuals and up to 400 organisations will have access to this system."

Read more: www.wada-ama.org/rtecontent/document/ADAMS_QA_Eng.pdf

detecting, deterring and preventing the use of doping in sport would be in everyone's interest.

RECOMMENDATIONS:

1. WADA ought to have ADAMS installed as soon as possible in order to contribute to better coordination between IFs and NADOs.
2. Due to differences in ability and quality among NADOs, WADA ought to identify the NADOs that are capable of doing whereabouts information and out-of-competition testing for IFs.
3. Cooperation with regard to prevention ought to be strengthened. WADA ought to make information material available for all ADOs, for example by establishing a data base with open ADO access to good programs.

5.3 Prioritising between Detection, Deterrence and Prevention

" In the future I hope that prevention through education will be the most important. But until then we have to detect and deter. There will always be some who will be ready to cheat, and we have to find them and kick them out. The main question is to find the right methods for detection. Here I am thinking of methods for analysing and controlling."

RICHARD W. POUND, Chairman of WADA

In addition to protect what has been defined as the athletes' fundamental right to participate in a doping-free sport, and thus promote health, fairness and equality for athletes worldwide, the WADC states that the purpose of the anti-doping programme is to:

"... ensure harmonised, coordinated and effective anti-doping programmes at the international and national level with regard to detection, deterrence and prevention of doping." (WADA 2003a, p.1)

In what follows, we take a closer look at the relationship between these three goals.

What has been emphasised the most?

There has been a significant development since the control work started in the 1960s (Houlihan 2002). Figure 3 is a tentative sketch of what has been provided during this period.

	Detect	Deter	Prevent
1. Anti-doping work in the 1960s	(X)		
2. Anti-doping work in the 1970s	X	(X)	
3. Anti-doping work in the 1980s	X	X	
4. Anti-doping work in the 1990s	X	X	(X)
5. Anti-doping work in the 2000s	X	X	X
6. Objectives for anti-doping work in the future	(X)	(X)	X

Figure 3: Reasons for anti-doping work from 1960s up until today. A tentative outline of main reasons

This study focuses on the current. Our interviews show that views on the significance of these three goals vary in various countries. Some say they carry out anti-doping work and doping controls with the sole purpose of detecting athletes who cheat, while others are mainly focusing on how to prevent and deter. Some say they do it to protect athletes' health.

There may be several reasons for this variation. ADOs that are largely controlled by public authorities are more likely to have a wider perspective than only to detect elite athletes that are taking drugs. Prevention of athletes' health (at all levels of performance) will be in focus. This is the situation in France.

A similar view may apply to situations where the ADO is independent but still receives public funding. This is the situation in Norway where ADN conducts a relatively high percentage (20%)²⁴ of doping controls at performance levels below international and national elite athletes. The Norwegian government spends 18m NOK (almost 3m USD) on anti-doping work annually, and a key objective is to fight doping in all areas in sport. In this way it makes sense to talk about prevention as the main objective.

Reasons for control work can also be based on experience with the prevalence of doping in the sport or country under examination. If doping seems to be a significant problem, it would probably be efficient to increase the number of tests

²⁴ Anti-Doping Norway has this division: International elite athletes (35%), national elite athletes (45%), other competition athletes (15%), and people who exercise and train in private studios (5%).

in order to detect a higher number of athletes who cheat, and to deter other athletes from trying. Weightlifting and professional cycling are examples of sports where increased quantity and quality of tests have been necessary to "awaken" the athletes. In sports and nations where doping seems to be a marginal problem, it would be sensible to focus on prevention work with a view to the next generation of athletes.

Moreover, different priorities can also be related to the history and degree of institutionalization of the ADO. In nations or sports where ADOs have been doing testing for years, elite athletes are aware of the potential risk of getting tested and detected if they take drugs. In these cases, the ADO has been successful and deterred people from taking drugs and may thus probably reduce the number of tests, perhaps by making an increased effort to prevent or carry out targeted testing in particular groups or with particular athletes.

A less established agency must demonstrate its existence, which could be done by focusing on testing.

In figure 4 we have made a rough outline on how different ADOs make priorities. This is an attempt to indicate priorities between detecting, deterring and preventing. Obviously, all NADOs have certain focus on all three goals of the anti-doping work.

	Detect	Deter	Prevent
1. NADOs run by the government			X
2. NADOs with strong ties to the government		X	X
3. NADOs with no ties to the government	X	X	X
4. ADOs with many cases of doping	X	X	
5. ADOs with few cases of doping			X
6. ADOs being established	X		
7. ADOs with small resources	X		

Figure 4. The priorities between detection, deterrence and prevention in different ADOs

In order to be efficient, most of the drug cheats must be detected. This does not necessarily mean a high number of tests. A source states: "It is a very small percentage that you need to detect, but they are the ones that you really have to use your time and energy on."

WADA Chairman Richard W. Pound touches upon similar point in his quote that introduced this chapter. According to Pound, the most important task today is to

find the right means for detection and he is thus thinking of methods for analyses and controls. However, Pound adds the following:

“Later, in a generation or two, I hope that we have been able to educate the athletes, and their parents, teachers, coaches and entourages in a way so that the number of tests can be reduced. But there will always be someone who will attempt to cheat. We need to have systems to detect and deal with them, just the same as society has its police forces, court systems and even penal systems.”

Cost-benefit:

Goals of detection and deterrence are minimum requirements for individuals and societies to recognize efficient doping control. Although there are financial costs, there is no doubt that up to a certain point, detection and deterrence are efficient in our cost-benefit scheme. Prevention requires greater and well-planned programmes with more competent personnel and financial resources. The efficiency of prevention programs are not easily measured and require a long-term perspective. However, if good programs are made accessible to the anti-doping world, financial and personnel costs will be reduced. Moreover, demonstration of a clear will to constructive prevention effort may have significant socio-political benefits in terms of social and political respect.

RECOMMENDATIONS:

1. All ADOs ought to have clear and rational strategies when it comes to prioritising between detection, deterrence and prevention.
2. All ADOs ought to develop strategies in terms of preventive and educational measures.
3. WADA ought to take responsibility for the development of data bases with good prevention programs and with open access for all ADOs.

5.4 The Doping Control Officer (DCO)²⁵

“A full time employed DCO is more flexible and can carry out testing at times and in situations that were previously avoided or more difficult to accomplish due to the DCO’s regular work.”

ANNE CAPPELEN, Head of Quality Affairs, Anti-Doping Norway (ADN)

Along with the quality of the doping test itself, the doping control officer (DCO) is the critical, operative element with regard to control work efficiency. S/he will contact the athlete during competition or training and inform the athlete that there will be a control. The DCO must be trained to handle different situations. The athlete may run away, try to manipulate the urine or blood sample, and so on. The key words for efficiency here are; education, training and experience.

In this chapter we will look at different factors related to DCO work. ADOs are asked about how DCOs are recruited, their conditions of employment and what responsibilities they have when carrying out a doping control.

In figure 5 the number of DCOs in our study is presented in proportion to the number of doping controls each NADO carries out.

	Number of DCOs	Number of controls	Adverse analytical find.
US	86	7630	43
China	273	5461	19
Norway	55	3650	36
France	539	8945	388
South-Africa (1)	54	2243	43

Figure 5: The numbers of DCOs from the NADOs participating in our study, the number of tests taken and the number of adverse analytical findings. Note that the number of adverse analytical findings is not identical with the number of doping cases as they may include cases that underwent therapeutic use exemptions (TUE) approval processes. Figures may also include multiple measurements on the same athlete. The two other ADOs in the study, the international rowing and athletics federations do not have their own DCOs. (1). April 2003-March 2004.

Who are recruited as DCOs?

The typical DCO is interested in sport and have usually been active as an athlete, coach or manager. When becoming a DCO, the candidate cannot have any ties to

²⁵ In this chapter we mainly discuss the DCOs in the NADOs.

the sports where s/he will carry out controls. However, not everyone has experience from sport. Several DCOs have their background from health services and/or universities. Motives among DCOs of increased income and financial reward are unproblematic but should probably not be the only motivation. Still, most DCOs seem to share a wish to contribute to the ideal of clean sports.

All ADOs try to increase their level of expertise. To become a good DCO, experience is required. A frequent turnover must therefore be avoided. DCOs start up as chaperones and can reach the top level as an international control administrator. ADOs could and should point towards the possibilities of a career as a doping control officer.

France differs from the other countries with regard to recruiting DCOs. Up to this point, only doctors have been recruited (539 in 2004). This is due to French legislation. In their new organizational form, doctors will still be recruited, but mostly with regard to blood testing. DCOs with other backgrounds may be used for getting urine samples.

How are DCOs recruited?

In our study, the number of DCOs per ADO varies from 50 to almost 300. They are recruited in various ways and each ADO operates with several methods:

- The candidate is recommended to the ADO by others, often other DCOs
- The ADO contacts hospitals, universities and other governmental authorities
- The ADO advertises in newspapers and journals
- Advertising on the ADO's web pages on the Internet

The last alternative seems to be the most productive. Here individuals are found who already have shown a certain interest for this work. A source tells us this:

“We have tried advertisements in e.g. professional journals for nurses or athletic trainers, but in our experience, people apply with no understanding of what they're applying for. They're just thinking this is a great part-time job.”

What is the appointment procedure like?

The appointment procedure is practically the same for all NADOs. After receiving regular application from the candidates the next steps are:

- Traditional job interview (some may use telephone interviews before they ask the candidates to come in for a personal interview)
- Training/course with a final exam²⁶
- Each ADO works differently with regard to the practice required before the authorisation is granted.

In some ADOs, the candidate must participate as an observer on at least one out-of-competition test and one in-competition test to be sure that the candidate understand the actual conditions they will experience in the job. Some ADOs employ several field observations. South Africa uses six in-competition tests and two out-of-competition tests. Chief Executive Officer Daphne Bradbury in The South African Institute for drug-free sport (SAIDS) says:

“The leader of the doping control officers evaluates them over a period of six months. In this period the candidate purely acts as support – not even as assistant. They learn to observe, sometimes as chaperons.”

In France, the doctors to become a DCO must be trained and take part in three doping tests with a doctor already approved. S/he must also take an oath before the Regional Court:

“I swear to carry out precisely and honestly all tests, investigations, researches, reports and operations forming part of my task. I also swear not to reveal or use anything I shall learn in the course of discharging that task.”

DCOs must be reaccredited at least every other year. The procedures vary. Some ADOs hold annual workshops for all the DCOs, whereas others have special

26 An example from the recruiting process, taken from the USADA: 1.Submit a statement of interest and résumé, 2.Complete a questionnaire, 3.Complete a phone interview, 4.Observe an Event Testing Session, 5.Observe an Out-of-Competition (OOC) Testing Session, 6.Submit an application and application fee of \$50, 7.Submit to and pass a background investigation, 8.Attend a formal training session, 9.Meet proficiency levels of the written and practical skills examinations, 10.Perform a successful doping control session in the field under supervision.
www.usantidoping.org/what/dco/recruitment.aspx

seminars where certain subjects are discussed, e.g. new doping regulations, etc. We have not discovered any great differences here, and it is evident that the ADOs follow the guidelines described in the WADC's International Standard for testing (2003b).²⁷

What are the conditions of employment?

In our study, all DCOs are paid in one way or the other, even if the work is voluntary. Some NADOs do not refer to this as payment, but coverage for lost earnings and expenses for room and board. Some DCOs are paid for each test that is taken, while others are compensated based on daily rates.

It appears that most DCOs have a full-time job or studies in addition to the job they do for the ADO. Thus, they must do most of the testing in the afternoons and evenings and weekends. In times with an increased number of out-of competition testing of athletes, it will also be necessary for DCOs to carry out the testing during daytime. In our study, all participants believe it is a good idea to have full-time DCOs, especially when focus is put on quality rather than quantity. Anti-doping Norway has tried this out with one full-time employed DCO. Anne Cappelen, Head of Quality Affairs at ADN, says:

“There is an increased focus on target testing of top athletes who are listed in the ADO's testing pool. These top athletes are generally full-time athletes and will have scheduled their training sessions during the day. It is necessary and also required to test these athletes during training periods. The need for a DCO who can test during day time is therefore obvious. We have successfully employed and used a full time DCO for one year. The benefits have been so great that our NADO has decided to continue with a minimum of one full-time DCO. A full-time employed DCO is more flexible and can carry out testing on times and in situations that were previously avoided or more difficult to accomplish due to the DCO's regular work.”

This works in Norway, but may be a problem in other parts of the world where for example travel distances are longer. It could also be a problem to find the appropriate people and rate of pay.

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USADA does not have a full-time DCO. Some DCOs in Los Angeles are carrying out more than 200 tests annually and this provides their main income. But they are nevertheless not employed on a full-time basis. USADA sees certain advantages by having some DCOs that will be available at any time, but because of the great geographical area, it would be impractical for a small number of full-time DCOs to cover it all. However, as is indicated in the interviews, full time employment may be a possibility in the future in some densely populated areas, for example in Los Angeles.

In what way can DCOs select athletes for testing?

It is the DCO who meets the athlete. S/he is experienced and knowledgeable of the field, perhaps more than the personnel at the ADO's head quarters. Should DCOs therefore also have the authority to select the athletes they want to test? No DCO in our study has full liberty to do such a selection, but some ADOs give considerable responsibility to the DCO or the doping control administrator (DCA)²⁸. There seems to be two alternatives here:

- DCO freedom of selection: The headquarter decides where the DCO is carrying out the controls, but s/he decides to a certain point who is going to be tested. The headquarters may order six tests to be taken in a certain sport at a certain time. One name on the list may be given, for example an athlete on the national team. When the DCO arrives at the scene where the testing will be conducted and s/he sees another athlete from the same team, it is up to the DCO if s/he wants to test this athlete. The same applies if s/he sees an athlete that acts suspiciously.
- No DCO freedom of selection: The headquarter decides exactly which athlete should be tested. The DCO can under no circumstances test other athletes than those stated on the list. This is not necessarily due to the fact that the headquarters do not trust the DCO, but they consider the system to be under better control and being more 'fair' if the selection is made by the office. A source says: "If you get in a situation where the DCO can pick anyone he feels like, there might be a situation that challenges her/his judgement. One could claim that s/he is upset by

²⁸ There are differences in procedures for the controls. Some NADOs send one or two DCOs for carrying out a control, while others more often use a whole team of DCOs and one DCA.

someone and there can be rumours of various kinds. It gives them (DCOs) much more independence not to have to do that choice.”

Another ADO argues that it may be hard to pick athletes. A lot of information is required and this information is found at the headquarters.

In the future, DCO freedom of selection will most likely be reduced. This is due to the fact that more tests are taken on target basis. When an athlete in the registered testing pool is tested out-of competition, the DCO cannot be instructed to ”go to the camp and pick ten”. DCOs need a list of athletes who will take an out-of-competition test. If these athletes are unavailable, the DCOs cannot pick other athletes as a substitute.

Kate Mittelstad, Doping Controlling Director at USADA, says on this issue:

“I know that other ADOs have DCOs that go to the training camp and pick five from a priority. We have had cases that the DCO runs into someone. Then they contact us and ask if we want them to test him or her. They cannot do that on their own. They don’t know if other DCOs are out there or when the athletes were tested the last time.”

International federations only have their own DCOs in some cases. Most of the IFs with anti-doping programmes use private, commercial agents or NADOs. In the commercial programmes the DCO must comply with all the instructions given by the employer and/or IF at any time. This implies that DCOs have a list of athletes who are to be tested within a certain time perspective.

Most IFs normally do not allow DCOs to choose other athletes but may approve of this if the athlete is in the IF's testing pool. This could be the case when a DCO is sent to a training camp and discovers that there are foreign athletes in the IF's testing pool who are there on a training camp as well. Other IFs give their DCOs much independence. DCOs are given a list of names but have the flexibility to test other athletes (on national level) if they cannot find the athletes they were supposed to test.

Cost-benefit:

DCOs make up a critical, operative level in the anti-doping work. Technically weak or insecure DCOs will cause doubts about the work and have a negative impact on the athletes and the anti-doping work reputation. Good training is extremely important in this context. The cost of providing the best education and development seems to be more than compensated by benefits gained. Like most other initiatives, the costs can be reduced if good plans for DCO training can be standardised and adjusted for more ADOs with the help from WADA.

RECOMMENDATIONS:

1. ADOs ought to give high priority to the selection, education, and accreditation criteria of DCOs.
2. WADA ought to develop a standardised procedure for selection, education and accreditation criteria of DCOs.
3. ADOs with resources to employ full-time DCOs are encouraged to do so in order to test its efficiency.

5.5 Registered Testing Pool (RTP)

“We still have too many athletes in the registered testing pool and the whereabouts programme. In 2004 we had something like 450, this year about 300, and we hope to go down to 150 next year without having it look like we are reducing our commitment to doping controls. We will again revise our rules so that we have a manageable number of athletes to monitor.”

MATT SMITH, Executive Director of FISA

The WADC states clearly that:

“Each international federation and national anti-doping organisation shall plan and conduct in-competition and out-of-competition testing on its Registered Testing Pool” (WADC 5.1.1). The following chapter deals with some implications of this principle.

A registered testing pool (RTP) is defined by WADA as “the pool of top-level athletes established separately by each IF and NADO who are subject to both in-competition and out-of-competition testing as part of that International Federation's or

Organisation's test distribution plan". RTP makes it possible to have efficient test programmes for all athletes on top level. Many athletes appear on two lists, and, as discussed in chapter 5.2, this requires coordination between ADOs on national and international levels. It is even more important that athletes in nations or sports without a registered testing pool are taken care of by other ADOs. WADA has an important task here when the agency notices that some athletes are not on any lists. However, due to the ADAMS, this is not supposed to happen once the practice has been established.

Which athletes should be in RTP?

WADA has asked each ADO to define and document the criteria for athletes who will be part of RTP. As a minimum requirement, IFs will include athletes who compete on a high level in international competitions. The requirements on NADOs are "...athletes who are part of the national teams in Olympic and Paralympic sports and recognised national federations."²⁹ (WADA 2003b)

Almost all NADO representatives in our study believed that the number of athletes in the RTP would be too big if the WADA definition was to be followed accurately. By accepting all candidates for national teams in Olympic sport (also sports where national athletes are not likely to qualify), the number would be unmanageable. The control would be much more efficient if NADO selected a smaller number of athletes where focus was put on the best, as well as athletes in so-called national sports and in sports where the risk of doping was the greatest. A source says:

"We had more than 1200 (in the RTP) last year, but this is too big for us because it is difficult to control the information from all the athletes. So we will reduce the number considerably this year. That will make it more effective."

IFs can be more flexible, something which is quite obvious because of differences in size and international range. In one IF, the 20 best athletes in the world in each discipline could be included, whereas others could include medal winners in the last championship. All athletes with outstanding performances during a season ought to

²⁹ International Standard for Testing, version 3.0 June 2003, 4.3.1.

be in the RTP automatically. Elite athletes who are returning after injuries could also be included.

Obviously, as the Olympic Games is a gathering of elite athletes in most sports from all over the world, Olympic athletes ought to be in a registered testing pool. Some ADOs have drawn practical consequences of this. In the US there is a 12 month rule that ensures all athletes to be followed-up. Kate Mittelstadt, Doping Controlling Director in USADA explains:

“The USOC policy is that every athlete going to the Olympics must be added to the list 12 months before The Games. If there are some dark horses who came out of nowhere to qualify for the team, they have to receive special exceptions from USOC in order to be clear for the team. Before Athens, there were 5-6 examples. Because it was a new policy, they actually were a little more lenient on the standard than they will be from now.”

Athletes in the RTP are generally classified into risk groups. This poses certain challenges with regard to requirements on whereabouts information (see next chapter). Athletes in sports where the risk of doping is relatively small, are reported by the ADOs to be less careful in handing in their forms to ADOs and cannot see the point in using much time on anti-doping as they are tested so rarely. What can ADOs do about this?

There are two alternatives: Athletes can be given a warning for not handing in the form (it usually helps), or ADOs can make cuts in the list of athletes in sports that can be categorized as low risk, even if these athletes may be on the international level in Olympic sports. To avoid critique on unequal treatment, the latter seems to be less relevant. A source says: “When the athletes get one warning, they realise what is going on and change their behaviour.”

How are other athletes followed up?

RTP is for elite athletes, preferably in Olympic sports. In our study, we have asked for testing regimes for other athletes, e.g. young athletes who may be candidates to participate in the Beijing Olympic Games in 2008. Even if the ADO priority is elite athletes, efforts are being made even here. Several IFs carry out tests at World Championships for junior athletes and the best of them enter the RTP automatically

before the next season. The same happens in NADOs. Some qualify for the national teams and are thus included in the RTP.³⁰

Some ADOs operate with two lists. One is the official, according to WADA's requirements, while the other comprises more athletes, e.g. "coming men and women". They do not have to meet the same requirements with regard to whereabouts information as do elite athletes, and they are not tested as often as the athletes in RTP.

One group of ADOs does not have any RTP at all.

Cost-benefit:

The establishment of RTPs has certain financial costs. Nevertheless, the individual and socio-political benefits are overwhelming. Being part of an RTP provides a certain safety and legitimacy for the individual athlete. An RTP is also very convincing in socio-cultural terms and communicates to the larger society systematic and rational planning of the anti-doping work.

RECOMMENDATIONS:

1. All athletes at international levels in their sport ought to be part of a RTP.
2. All ADOs ought to establish an efficient RTP according to WADA criteria.
3. Each ADO ought to consider the establishment of an additional RTP with other athletes (i. e. young and aspiring athletes) for detection, deterrence, and prevention purposes.

³⁰ Ivan Waddington, sport sociologist with long experience into doping and anti-doping research, has on several occasions suggested a tracking system for young athletes in an RTP in which the rate of improvement is monitored. Extraordinary improvement rates indicate need for frequent doping tests. The idea seems fertile and such a practice could have significant effects both in terms of detection, deterrence, and prevention. (Source: Personal communication with Waddington)

5.6 Whereabouts Information (WA)

” It’s an important system. It’s an obligation which can be hard for the athletes who are not in a situation to systematic provide such info. We know they can’t plan for the next three months. But for the moment, this is what we could find as a proper mechanism.”

DR. GABRIEL DOLLÉ, Chief of the medical anti doping department of IAAF

WADC clearly states what is being required by ADOs:

“Athletes who have been identified by their International Federation or National Anti-Doping Organisation for inclusion in an out-of-competition testing pool shall provide accurate, current location information. (WADC 14.3)

The implementation of whereabouts information (WA) varies. Some ADOs have not yet managed to establish RTPs, other ADOs are well organised in this field. Independent of RTP status, however, they are all waiting for WADA’s Anti-Doping Administration & Management System (ADAMS) to be able to implement efficiently requirements on WA. Hence, it can be said that WADA is the weaker link in this process. A database where it is possible to use an online solution would make it much easier to meet RTP and WA requirements.

Routines for athletes’ self-reports are similar in most ADOs.³¹ Athletes must fill out a location form with their home address, training site address, calendars for camps and competitions, etc, on a quarterly basis. Some ADOs have location forms where athletes must state where they are for each single day for the three months to come. For athletes in other ADOs it is enough to write the location when this differs from the places stated in the location form.³²

31 International Standards for testing 4.4.2: As a minimum, the following Athlete Whereabouts Information shall be collected: a) Name, b) Sport/discipline, c) Home address, d) Contact phone number, e) Training times and venues, f) Training camps, g) Travel plans, h) Competition schedule, i) Disability if applicable, including the requirement for third party involvement in notification.

32 One example can be taken from USADA “Athlete location form” 2. quarter 2005. Special exceptions: “Please list singular activities that are not previously identified on this form and that will alter the schedule provided by your Regular Quarterly Schedule and/or Exceptions to Quarterly Schedule. Examples could include a conference or seminar for work; Graduation, Wedding or other special occasion; or other activity that would change your schedule for a single day making it difficult to locate you at one of the locations identified elsewhere on your athlete location form. This should be considered for exceptions only, and is not for regularly scheduled days off from training or other regularly scheduled activities.

Some athletes leave the job of filling out the WA (including changes) to coaches and other personnel in the supporting system. It should be emphasized, however, that according to the WADA Code this is an athlete's responsibility.

How and when do athletes report changes of plans?

This is done by fax, e-mail, the Internet and text messages. Some ADOs do not accept changes over telephone and the use of text messages is still at an early stage. In spring 2005, NADOs in Norway and Sweden are doing a pilot project on SMS communication.

In this area, there are challenges related to infrastructure and economy that must be considered. In many nations, athletes do not have access to a computer, the Internet or a telephone. For some, it is even a question of having electricity.

There are variations in deadlines for athletes to report changes in their schedule. Some ADOs expect their athletes to report changes in their whereabouts of more than two days, at least 48 hours ahead. Other ADOs accept far less. If the athlete is not where s/he has stated s/he should be and is not back within two hours, the changes will be reported.

To exemplify with practical cases, we asked about athletes' obligations if s/he changes her/his plans and go to the cinema and perhaps a party afterwards. The athlete will then be out of ADO's control for a certain number of hours. A source says: "Athletes must update if they change location. The question of the cinema is a bit far-fetched but it happens. Two times we have got messages about visiting a movie."

What is the procedure if the DCO cannot find the athlete?

This is a critical question with respect to equal treatment and harmonisation of the WA system. Currently, there is varying practice which is unfortunate as there are sanctions when the rules are violated according to WADC.³³ It will be considered unfair if athletes in some nations or sports are penalized for violations of the rules while others do not even get a warning. According to WADC10.4.3, "...three warnings after missed test/no show within 18 months give 3-24 months of ineligibility."

The procedures according to WADA's "Guideline for whereabouts information"³⁴ is that the DCO will "...complete a detailed Unavailable Athlete Report

³³ WADA Code 10.4.3

³⁴ "Guideline for Athlete Whereabouts Information", version 2 June 2004, 7.1-7.12.

that shall include the times, locations and all other details of the DCO's attempt to locate the Athlete" (7.3)

This will be used as evidence and the responsibility will be put on the athlete. S/he must present in writing a credible explanation of why the DCO could not find her/him. A panel then decides whether a warning should be issued or not. Three warnings in the course of 18 months result in an opening of a doping case and procedures are followed according to the WADC's Article 2.4 and 8 (Right to a fair hearing).

In this study, we are primarily interested in what happens prior to the report from the DCO. When all the listed locations have been examined, some ADOs use the telephone to get in touch with the athlete, coach or support network. S/he will be told to report immediately for testing. Other ADOs stop the process and continue the next day or at a later time. There are several alternatives. We quote:

- "We (DCO) call the athletes and tell him/her to arrive at the test station within two hours."
- "We are not calling the athlete, but we call the coach or other support personnel to inform them that the athlete must be back within 24 hours at the latest – preferably as soon as possible."
- "We do not call the athlete or the coach. After searching for some hours we try again the next day or the day after because we want a no-advance notice."

The ADOs consider the test to be 'no-advance notice' in examples 1 and 3, while they in example 2 consider it to be 'short notice'. This will be discussed in chapter 5.7.

What do ADOs think about the system for WA?

The quote at the introduction of this chapter from IAAF's Chief of the Medical Anti-Doping Department, Dr. Gabriel Dollé, represents most ADOs' view of the measure. Everyone agrees that the system for WA will have positive impact in the future with regard to the efficiency in doping control work. It will also be good for the athletes because they will be available for testing at any time, and this would probably mean a reduction in tests.

Besides, this is also a deterring factor for athletes because they will be sanctioned if they do not send in information and keep this information updated. In many countries there have been attempts to gather information about athletes, but without sanctions, the efficiency has been poor.

So far, experiences with the WA-system vary. Some NADOs point out that the pressure put on the athletes by IFs is of major importance in order to "teach" athletes to do their duties. A source says:

"It's an incredible job to follow up athletes. They want everything to be as easy as possible. Actually they don't want to do this job at all. But they are positive to be available for doping controls".

It is not in our mandate to interview athletes about this topic. Another study should consider the WA-system from athletes' point of view. For now, we will only refer to the responses a couple of ADOs have received from athletes:

- "The Athletes Commission agrees with the principle. Sometimes they ask for stronger interpretation of the rules. There has been a proposal to reduce three missed tests to two, to be more deterrent."
- "Our athletes say they are glad that we operate with the standard we do, but they ask: What about my competitors in other countries? That is a very common athlete response."

Cost-benefit:

With regard to efficiency, the individual benefits of a good WA system can be considered so great in terms of deterrence and prevention that its financial costs are more than balanced. This also appears to be the attitude among most athletes. However, noticeable protests from a few profiled athletes and critics from the outside have given the impression that the WA-requirement works like a surveillance system and is a threat against individual freedom. This implies a socio-political cost that WADA and ADOs must take into consideration. Good and clear public information about the system and its purposes is thus very important.

RECOMMENDATION:

1. WADA should develop clear and operational routines and dead lines for what kind of and when changes in WA are to be reported.

5.7 No-Advance Notice and Advance Notice

“I think one day we should worry less about what is considered in and out of competition and focus all testing to be no advance notice.”

Rob Koehler, Deputy Director Standards and Harmonization WADA

The definition of no-advance notice (no-advance notification and no-notice test are other terms being used) leaves no room for doubt.³⁵ This type of testing will, according to WADA, be given priority. “No-advance notice shall be the notification method for out-of-competition sample collection whenever possible.” (International Standard for Testing 5.3.1)

When ADOs in our study were asked how they understood the term ‘no-advance notice’, they referred to the WADA definition. However, it can be discussed whether all the tests that are carried out under this category actually belong here.

When are tests real ‘no advance notice test’?

In what follows, a few scenarios are presented in which testing with no-advance notice and advance notice are up for discussion:

- When a DCO calls on an athlete out-of-competition, the athlete should be the first person who knows that this is a DCO and that s/he is reporting that a test will take place. The athlete must under no circumstances know that s/he will be tested that particular day. In reality, the DCO is often recognised by other people through a network which will report that the DCO has come and that a test will be carried out. There is time, then, for manipulation.
- In other circumstances, the ADO needs a doping control station when several athletes or an entire team will be tested (very common during training camps).

35 Definition in WADC: “A doping control which takes place with no-advance warning to the Athlete and where the Athlete is continuously chaperoned from the moment of notification through Sample provision”

The control may take place in the same facilities as the training camp. A possible factor for a leak is when the ADO calls to rent the facilities. Similarly, someone may recognise the DCO or doping control administrator (DCA) when s/he arrives to set up the doping control station. Again, there is time for manipulation.

- When a DCO calls on athletes at their home address, there are a number of factors that may complicate the 'surprise'. The athlete may for example live on the 10th floor in a flat where the DCO must use the doorbell and present herself/himself by using a calling system. The athlete will then have a few minutes available for manipulation before the blood or urine sample is taken.
- If individuals in a national sports federation is aware of the fact that an ADO (NADO or IF) is planning to carry out tests at a certain time, they may tip off the athlete in an attempt to avoid a doping scandal. This is one reason for why it is so important that the ADO is independent from sport at operative level.

When should the test rather be called 'advance notice'?

As we have seen, there are uncertainties with regard to the interpretation of the term "no-advance notice" the way WADA has defined it. A source states:

"To be true, no-notice testing probably makes a very small percentage of tests simply because it is very unlikely that the athlete is the first person the DCO comes in contact with."

Above we described and discussed the approach in cases when the DCO cannot find the athlete (according to whereabouts information). When does a test become an "advance notice" test?

WADA states this very clearly in "Guideline for out-of-competition testing" (2004b). When the DCO has called on and waited at least 30 minutes³⁶ on locations stated in the athlete location form, the DCO will:

- ... "reschedule a no-advance notice test for another time and/or date and/or;
- ... record and report the athlete as unavailable;
- ...proceed to attempt an advance notice test, according to (2.9.1-3)"

³⁶ Several ADOs operate with 45 minutes as a minimum.

Some ADOs/DCOs terminate the test and make another attempt at another time. This way they follow WADA's definition of no-advance notice. The question is whether the later test will be of a no-advance kind since it is very likely that the athlete knows about the doping control officer's "hunt" for him/her.

The alternative is to make a phone call to the athlete's primary contact or the athlete himself/herself and inform about the attempt to make an out-of-competition test. S/he will then be given a deadline for attendance. A source says:

"Phone calls in 2004 were used just in ten percent of completed test so it is not happening all that often. Our position is that it's still a no-notice test. Within two hours there is little, if any, opportunity for manipulation. That's our opinion. We track phone calls so we know how often phone calls take place. We can go back and search and say "OK, of the last four attempts on you, this is how many times phone calls were made."

The statement that it is hard to manipulate the testing in the course of two hours does not cohere with information provided by WADA in which the following examples are given of what could be done when an athlete is given two-hour notice.³⁷

- Possibility to manipulate some blood parameters (Hematocrit / concentration in Hemoglobin)
- Super hydration (Possibility to pee and drink a lot, which will make the detection of substances harder as the urine will be very diluted (we had a few of those cases for EPO)
- Obtain a urine sample from somebody else and substitute

In order to avoid the problems with no-advance notice, some ADOs use the term short advance notice when it obviously is not a no-advance notice. We cannot find this term anywhere in the WADA code, but it has been used in connection with the ISO standardisation.

There is general agreement that no-advance notice is the most efficient way to detect doping use but also the most complicated way to carry out tests. ADOs all

³⁷ E-mail from Olivier Rabin, Director Science Department WADA

over the world are facing a tough challenge in the years to come. Rob Koehler, Deputy Director, Standards and Harmonization, WADA, says:

” We can still use the menu screen for in-competition and out-of-competition but we can test athletes anywhere, any time, no-advance notice, regardless whether they are competing or training.”

Cost-benefit:

For the honest athlete, no-notice tests are of significant value. The cost of being tested away from a sports scene is marginal compared to the safety of efficient and good tests and their deterrence and prevention effects in the athletic community. The financial burden is not greater than advance notice testing. Socio-politically, i.e. related to the public image of and trust in anti-doping work, there is much to be gained on systematic and clearly defined no-notice testing which will give the anti-doping work increased credibility and legitimacy.

RECOMMENDATIONS:

1. All out-of-competition tests ought to be taken as no-advance notice tests.
2. WADA ought to operationalize no-advance notice tests in a way that gives no room for interpretation.

5.8 In-Competition (IC) and Out-Of-Competition (OOC) Testing

“We sometimes have problems tracking down an athlete for out-of-competition testing, as there are areas where the streets are not indicated on street maps and, in fact, may not even have street names or house numbers. In this respect, it is probably a lot easier to find someone in a country in Europe than it is in a country in Africa.”

DAPHNE BRADBURY, Chief Executive Officer of SAIDS

What is an ideal distribution between out-of-competition testing (OOC) and in-competition testing (IC)? During the first years of doping tests, focus was on IC in order to detect the abuse of narcotic analgesics and stimulants (anabolic steroids

from mid 1970s). These programmes could be efficient but eventually drug using athletes discovered that the solution was to stop the intake a few weeks prior to the competition. This way, they would not be detected, and the performance-enhancing effect would still be there.

In the course of the last 10-15 years, attention has therefore been directed to OOC. Based on experience, several ADOs have established a distribution of 60% OOC and 40% IC as an optimal balance.

What is most efficient/appropriate?

Answers seem to depend upon sporting contexts. Below, some examples are given of the rationale for IC and OOC controls in different sports. Figure 6 can form a basis for discussion. First and foremost, it indicates tentatively how important it is to be aware of what kind of tests is being taken.

			Doping method	% OOC	% IC
1	Endurance sports with short-term championships (1-3 days)	The probability of detecting an athlete who has abused drugs with IC is small. Doping takes place during a longer period prior to championships	EPO, AAS	80	20
2	Endurance sports with long-term championships Football World Cup/Tour de France	The athlete abuses drugs prior to the championship but can also take supplements during the championship	EPO, Blood doping, AAS	60	40
3	Explosive sports Sprint, athletics, weightlifting	The athletes abuse drugs prior to and during the championship	AAS	60	40
4	"Concentration sports" Shooting	Tranquilizers that are mostly taken during the championship	beta blockers	20	80
5	Sports in which body size and weight have significant impact on performance. Wrestling, skijumping	Athletes struggle to gain/lose weight.	diuretics, stimulants	60	40
6	Typical technical sports	As in category 4.	beta blockers	40	60
7	So-called national sports (independent of type)	Each ADO must assess what is most appropriate.	Various		

Figure 6: Tentative plan for how to distribute out-of-competition testing and in-competition testing (in percent). AAS: Anabolic agents, EPO=Erythropoietin.

As implied in the figure, it is more important to do IC of football players during the World Cup (which lasts for more than one month) than of an athlete who will only participate in the 10 000 metre run in the World Championship. The probability of detecting a drug using long-distance runner with a strong bio-medical support system during a World Championship, seems minimal (with the analyses used today).

In our study, almost all the participating NADOs stated that their objective was to have 60% OOC. At the same time, it is a fact that it is easier and cheaper to carry out IC. For ADOs that are newly established or have little resources, it would be sensible to focus on IC. This way, athletes, coaches and people in general will become aware of the fact that tests are being taken.

The quote from Chief Executive Officer Daphne Bradbury at SAIDS, that introduced this chapter, describes this fact. Around the world, there are different logistic challenges. On the background on problems linked to lack of infrastructure and technology of a few South American, African and Asian nations (mentioned in a previous chapters), it is easy to understand their difficulties in carrying out OOC.

Is EPO testing IC useless?

As indicated in figure 6, detection of EPO is an area that requires OOC. Several sources state that testing IC is as good as useless until methods of analysis have improved. This form of testing must be based on a 'window' during the time it is expected that athletes use the substances in question. Comprehensive research is in the process both with regard to methods of analysis and to the timing of tests. A source says:

“We learnt last year that the athletes use EPO in a 7-21 days period right before an event. We want to give ourselves some wider windows of time to do testing and see what will happen. We are still exploring what, when, why and how.”

The following quote describes the situation as felt by a source:

“When we started EPO-testing the lab told us we were so close on so many that it hurts. Still the use is much more rapid than the detection.”

Obviously not all ADOs have the necessary knowledge to be able to plan efficient controls in order for EPO to be detected. However, there is a certain comfort in that research is being done with regard to analysing methods and that EPO use will be easier to detect in the near future.

Does it really matter that the athletes are "clean" during championships?

Among many of the people pointing out the importance of efficient OOC is WADA Chairman Richard W. Pound. At the same time, he focuses on the importance of having a combination that includes IC:

"This is to deter, but also because it is fair to ensure that the medallists in an event are clean, at least for that moment. That is why we at the Olympic Games test the first four competitors in each event plus other athletes selected at random."

It is easy to approve of this statement. This can also be viewed on the background of a strong public pressure on tough testing during championships. As we have touched upon earlier, there are some sports in which IC testing has an effect. However, medal winners in some sports may be cleared as "clean" in a doping control ICs even if they have cheated. The problem is that some illegal substances cannot be traced even if the effect is still there. This is probably the reason for Pound's formulation that athletes are clean "...at least for that moment". However, taking OOC while illegal substances may still be traceable is crucial in effective anti-doping work and IC is not good enough in itself.

Cost-benefit:

Both IC and OOC have significant and constitutive benefits at the individual and socio-political level, even though there are financial costs involved. IC scores primarily on the socio-political level as the general public is assured that medal winners are clean. OOC has larger socio-political costs but has the most important individual and socio-political benefits.

RECOMMENDATIONS:

1. Both IC and OOC are efficient and a tentative balance ought to be outlined by WADA with an emphasis on OOC.
2. Each ADO ought to have a clear strategy as to under what conditions and with what emphasis IC and OOC should be conducted.

5.9 Distribution between Random and Target Testing

"Target testing is the main mechanism for detecting doping. However, also the term target can be interpreted in different ways. We have therefore used the term pursued target testing to avoid misunderstanding and to reach athletes potentially using doping"

ANDERS SOLHEIM, Chief Executive Officer of Anti-Doping Norway

According to WADA (2003a), target testing has to be carried out.³⁸ In the annotation to paragraph 5.1.3 in the Code that "...Target Testing is specified because random Testing, or even weighted random Testing, does not ensure that all the appropriate Athletes will be tested (for example: world class athletes, athletes whose performances have dramatically improved over a short period of time, athletes whose coaches have had other athletes who have tested positive, etc)."

The establishment of RTP implies that there will be more focus on target testing. Some ADOs combine target testing of an athlete in the RTP with for example five tests on a random basis. As pointed out above, this solution has become harder to carry out because of the procedures that must be followed if the DCO cannot find the athlete.

What is the difference?

In some cases it may be hard to distinguish between target and random testing even if the definitions are very clear. Target testing is defined in WADC as "selection of athletes for testing where specific athletes or groups of athletes are selected on a non-random basis for testing at a specific time" (WADA 2003a, p.78). One NADO, for instance, selects the athletes who are being tested. A computer will subsequently select athletes for testing based on programmed criterias. With this type of system there are no guaranties that all athletes in the registered testing pool will be subject to target testing.

This is also the case when the ADO tells the DCO to do a control in a certain sport within a certain amount of time. If an athlete in RTP in this sport is present and called in, this is a randomised control. Or would some define it as target testing? In figure 7 we have looked at a few examples of which some seem easy to categorize

³⁸ WADA Code 5.1.3

while others are highly questionable. (The model has been tested out on experienced anti-doping personnel, and their answers varied significantly.)

	Target	Random
1. Eight athletes are drawn from the start/result list.		X
2. The best four + two random athletes are selected after a competition.	X	X
3. All athletes from a team/nation who participate in the discipline are selected.	X	
4. All athletes in the final heat are selected.	X	
5. Two named athletes from the RTP are selected for out-of-competition testing.	X	
6. Three athletes in a particular sport are drawn from the RTP.		X
7. IF/WADA draws two athletes from a nation without an anti-doping programme.		X
8. IF/WADA selects two athletes with a known identity from a nation without an anti-doping organisation.	X	
9. All elite athletes in a particular sport or club are selected.	X	
10. One athlete from a team sport is drawn for testing		X
11. One athlete from a team sport is selected for testing	X	

Figure 7: Examples of doping controls that are target, random or both. Answers are tentative and ought to be debated.

A source says:

“There is a conjunction with random and target testing. We just pick out the tested athletes by random from the target group. But for training camps we are conducting target testing.”

Could target testing imply more than selecting athletes?

In the WADC, target testing applies to athletes or groups. However, the term has a wider meaning in relation to doping controls. It could also include priorities of sports where the risk of doping is high. Moreover, it could involve target testing of athletes from particular nations. This applies to controls carried out by or implemented by IFs and WADA. IFs ought to look at the work being done by NADOs and ask themselves: “...how many nations have strong internal testing programmes within their ADO?”

This will give IF/WADA an idea of when they should plan out-of-competition tests, annually or within more limited time frame. If there are nations that do not have a national programme, elite athletes must be target tested.

Even though WADA points out that target testing should be used, some ADOs report that more than 80 per cent of the tests carried out are random. This type of testing is less complicated and has a significant deterring effect, particularly for athletes below the top level. For instance, when DCOs carry out tests on football players at lower levels and even detect abuse of drugs, all football players will know that they can be tested.

Which type of target testing should be given top priority? (athletes or sports?)

NADOs vary in their responses to this question. Some state that they definitely focus their testing in disciplines and/or sports while others are just as categorical and focus on athletes. In the latter category, however, there is still a ranking of sports based on hypotheses of high, medium and low risk for abuse of drugs.³⁹

It seems as if the planning of target tests must focus on both sport and athletes. Or, as a source said:

”The plan is made in most part by sport, but then if you look under the bench and at the selection criteria, it means the athletes.”

For IFs it is of course not about giving priority to sports, but to disciplines. For example, within a sport some disciplines may be more exposed to blood doping/EPO than others. Athletes from these types of sports are therefore target tested in periods when the risk of abuse is at its highest. They may for example be tested two, three and/or four weeks prior to important competitions.

Cost-benefit:

Both random and target testing have benefits and must be a part of the testing programme. The probability for detecting drug abusers by random testing is less than by targeted testing while random testing probably has a considerable deterrence effect. The message is that everyone in organised sport can get caught, not only elite athletes! Target testing has higher financial costs, but it is also more efficient in detecting certain athletes/groups that are in the risk zone and it has a decisive function in demonstrating efficiency in the anti-doping work.

³⁹ The definitions for high, medium and low risk sports vary from country to country.

RECOMMENDATIONS:

1. Target testing ought to be given priority, especially in countries without NADOs and in IFs without ADOs.
2. ADOs ought to develop testing programs according to the risk of doping in various kinds of sports and sport disciplines.

5.10 Investigation and Tip-Offs

“If we think the information is right, we will organise some people to go there. We have got positive tests. Most of the calls are true.”

Wang Xinzhai, Officer Anti-Doping Office of COCADC

Investigations and tip-offs have been very useful the past few years. The BALCO scandal in the USA in 2003 was a result of tip-offs and investigations. One year later, tip-offs resulted in Hungarian athletes being detected during the Olympic Games in Athens. These are only two out of many examples.

All ADOs do some kind of investigation. We will take a look at some of the things we discovered in this study:

The Internet:

This is a source which is used a lot more often than before. Kate Mittelstadt, Doping Controlling Director in USADA says:

“Sometimes it is just for finding more information. E.g. after a tips about a doctor providing EPO and HGH. What is he really doing? Sometimes they list that they are helping athletes! The Internet is actually very important. Then we contact/do follow-up calls.”

The Internet can also be used in order to search for schedules and results. There is a great deal of relevant information to be found here. For example, one source says that doping controls have been carried out after the person responsible for selecting athletes for testing has seen images of athletes who have developed suspiciously large muscle mass!

Systemising information:

There are ADOs that are now developing systematisation strategies to better cope with all relevant information. One of the ADOs has divided different sports between the employees, who monitor facts about injured athletes, athletes breaking records, etc. The employees must pass on this information to the DCO.

This is all in the initial phase and it looks as if this activity will become more important in the years to come. Some important steps have already been taken. Dr. Gabriel Dollé, Chief of the Medical Anti-Doping Department at IAAF says:

“Now I think there is a growing feeling among the athletic community that the testers are catching up. There has been intelligence in how they test, there is more information being shared, there is a network being filled up around the world.”

Receiving tip-offs:

Most ADOs encourage tip-offs. Tip-offs do not automatically result in tests, but nearly all NADOs in our study reported that they took tests that turned out to be positive after having received tip-offs.

The contact is normally anonymous. Usually, the tip-off points out particular athletes or sports that use doping. Wang Xinzhai, Officer in the anti-doping office in the Chinese Olympic Committee Anti-Doping Commission (COCADC), says:

“We try to confirm the situation. If we think the information is right we will organise some people to go there. We have got positive tests. Most of the calls are true.”

Others are more careful doing this type of testing, especially when the tip-offs are anonymous. One source tells us that anonymous tip-offs are consequently put aside or thrown away, while other tip-offs are examined and an attempt is made to find out the motive behind the tip-off. The informant could have a wish to ruin an athlete's reputation and throw suspicion on him/her. Target testing based on tip-offs from this kind of anonymous informants is not recommended.

System for receiving tip-offs:

Some have established an information system with a phone line where people can call in tips. USADA has a “Play Clean Line” which is a toll-free number used by “...individuals who are concerned about fair competition.”⁴⁰ The arrangement was new in 2004 and the USADA received about 15 phone calls. The agency believes they will receive important information once the system gets better known.

Cooperation between athletes, federations and coaches:

ADOs have experienced that athletes and coaches would like to talk about information they might have. This could happen by getting in touch with the headquarters, but, more commonly these issues are dealt with in connection with a doping control. It could be important, therefore, that the DCO acts as a conversation partner.

Cost-benefit:

Tip-offs are positive initiatives and they do not involve considerable financial costs the way the operation is run today. As is said by the Chinese representative above, most tip-offs are actually true and they often lead to detection. However, caution must be shown with regard to individual costs because athletes may feel that their individual rights are threatened. Many tip-offs advertisements on ADO websites may give sport the image of a surveillance society which again may lead to socio-political costs. However, used sensibly, tip-offs is a measure with marginal financial costs but with considerable effect primarily on both detection and thereby on deterrence.

RECOMMENDATIONS:

1. ADOs ought to utilize the possibilities of tip-offs as they have low costs and high value in terms of efficiency. ADOs ought to consider clear routines and good systems, for instance through information on web pages, for following up in this respect.
2. ADOs ought to emphasize tips off as part of the anti-doping work and in the interest of fair play and avoid images of surveillance.

⁴⁰ See: www.usantidoping.org/contact/

6.0 OVERALL DISCUSSION

We have outlined a cost-benefit framework for critical discussions of efficiency and presented and discussed a series of measures in this respect. We will now provide an outline and a comparative evaluation of relevant measures with reference to the efficiency of doping control in terms of optimal detection, deterrence and prevention effects (figure 8).⁴¹

In the right column, proposed measures are listed as discussed in the report. In the three following columns, an estimation of expected costs/benefits can be found. As stated in chapter 4, we deal mostly with non-quantifiable costs and benefits and the estimations are rough. We work here at an ordinal level of measurement, that is, we compare and rank alternatives but say nothing of the exact value intervals between them. In this way, the scheme indicates possible priorities and may stimulate further discussions.

For each measure, we have used the following evaluation scale:

- 2 benefits are significantly greater than costs
- 1 benefits are greater than costs
- 0 there are no real benefits or costs/benefits and costs are impossible to estimate
- 1 costs are greater than benefits
- 2 costs are significantly greater than benefits

Based on this, a scheme can be drawn in which each measure is given an evaluation in terms of efficiency at three levels and a sum score. See figure 8 next page.

⁴¹ For a discussion of the possibilities of dealing systematically with choices under uncertainty, and for qualifying "soft" values, see Hammond et al (1999).

Measure	Individual	Financial	socio-political	Sum
1. ADO independence	2	0	2	4
2. Cooperation NADOs – IFs	2	2	2	6
3. DCO/recruitment	2	0	2	4
4. DCO/full-time	2	-1	1	2
5. Registered Testing Pool	2	-1	2	3
6. Whereabouts Information	2	-1	2	3
7. No-advance notice	2	-1	2	3
8. Advance notice	2	0	0	2
9. In-competition testing	1	0	2	3
10. Out-of-competition testing	2	-1	2	3
11. Target testing	2	-1	2	3
12. Random testing	1	0	2	3
13. Investigations	1	-1	1	1
14. Tip-offs	1	0	1	2

Figure 8. An overview scheme of measures in terms of efficiency in anti-doping

Explanations for the estimations are as follows:

- Organisational independency of ADOs seems to have important benefits for the individual and from the socio-political perspective (2, 2). This does not necessarily exclude financial support from the governments/sport organizations and does not have significant costs (0).
- Improved cooperation between NADOs and IFs seems crucial in efficient anti-doping work, both in terms of costs and benefits on the individual level, (2), and in terms of finances (2) and the socio-political image (2). Individuals are tested more rationally and in more secure ways, fewer tests can be taken in spite of increasing the efficiency of the work, and the socio-political image of anti-doping work will improve.
- Resources put into the recruiting, training and updating of DCOs have a similar value profile. Rational recruitment procedures have significant benefits on both individual and socio-political levels (2, 2) and have marginal financial costs (0). Full-time DCOs has financial costs (-1) and professionalisation may have socio-political costs and lead to a reduction of the idealistic aspects of the anti-doping work (1).

- A registered testing pool has financial costs (-1) but is highly beneficial at the individual and socio-political levels (2, 2).
- Whereabouts information (WA) will serve individual athlete and socio-political interests (2, 2) but has financial costs (-1). There is a possible socio-political cost here as WA may give associations to a surveillance society. Socio-political cost can be reduced by good public relation work from ADO.
- No-advance notice testing requires financial resources (-1) as compared to advance notice (0), it is considered equal in terms of individual benefits (2), but no-advance testing has higher socio-political benefits (2 as compared to 0).
- Out-of-competition testing has higher individual benefits than in-competition testing (2 to 1), but it is higher on financial costs (-1 to 0). Both testing forms are considered important from the socio-political point of view (2, 2).
- Target testing has only benefits (2, 2) except on the financial level; they take a certain extent of resources (-1). Random testing is less beneficial on the individual level (1), cheaper (0), but has benefits at the socio-political level (2).
- Investigations and tip-offs differ in terms of financial costs (-1, 0) but are similar in terms of individual and socio-political benefits (1,1). Both are efficient when it comes to detection and deterrence but might lead to a sense of insecurity among athletes and give anti-doping work an image of surveillance that may hurt its socio-political image.

7.0 CONCLUSIONS

Our mandate has been to

1. describe organisational and financial terms for carrying out efficient doping control
2. describe different procedures and the justification in planning and carrying out doping controls
3. discuss critically the procedures in relation to the intention of detecting, deterring and preventing the use of doping

We have interpreted the mandate in terms of a key question:

What is efficient doping control?

Based on discussions in the chapters above, we can provide a tentative answer by pointing towards what seems to be the most important measures.

Efficient doping control seem to depend upon

- an improved and close coordination and cooperation between ADOs, primarily between NADOs and IFs
- ADO independence at the operational level from sport organizations and governments
- good procedures for recruiting DCOs and strong DCO educational programs and accreditation
- clear and operational definitions of target and random testing, and of no-advance and advance notice testing
- the priority of no-advance testing
- clearly defined registered testing pools and reliable and simple systems for whereabouts information

To be able to meet these requirements, the following means seem to be of key significance:

- to reach the goals of improved coordination and cooperation, and efficient registered testing pools and registration of whereabouts information, the implementation of WADA's ADAMS (Anti-Doping Administration & Management System)
- clear and operationable definitions of target and random testing, and of no-advance notice and advance notice testing. This ought to be the responsibility of a coordinative and global body such as the WADA

Final comment

This report deals with questions of efficient doping control and of best practice in doping control. The real, critical question in current anti-doping work is the lack of well functioning NADOs and ADOs in the international federations (see figures 1 and 2). This situation has many causes, among them a lack of resources and a lack of will to give priority to anti-doping activities. Discussion of such causes, and of measures for how to improve the situation, falls beyond the scope of this report.

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France: www.santesport.gouv.fr/

Norway, ADN: www.antidoping.no

South-Africa, SAIDS: www.drugfreesport.org.za

US, USADA: www.usantidoping.org

FISA: www.worldrowing.com/home/default.sps

IAAF: www.iaaf.org/antidoping/index.html

IOC: www.olympic.org

World Anti-Doping Agency: www.wada-ama.org

APPENDIX 1:

Key concepts

- according to WADC

Anti-Doping Organisation (ADO): A *Signatory* that is responsible for adopting rules for initiating, implementing or enforcing any part of the *Doping Control* process. This includes, for example, the International Olympic Committee, the International Paralympic Committee, other *Major Event Organisations* that conduct *Testing* at their *Events*, WADA, International Federations, and *National Anti-Doping Organisations*.

Athlete: For purposes of *Doping Control*, any *Person* who participates in sport at the international level (as defined by each International Federation) or national level (as defined by each *National Anti-Doping Organisation*) and any additional *Person* who participates in sport at a lower level if designated by the *Person's National Anti-Doping Organisation*. For purposes of anti-doping information and education, any *Person* who participates in sport under the authority of any *Signatory*, government, or other sports organisation accepting the *Code*.

Athlete Support Personnel: Any coach, trainer, manager, agent, team staff, official, medical or para-medical personnel working with or treating *Athletes* participating in or preparing for sports competition.

Attempt: Purposely engaging in conduct that constitutes a substantial step in a course of conduct planned to culminate in the commission of an anti-doping rule violation. Provided, however, there shall be no anti-doping rule violation based solely on an *Attempt* to commit a violation if the *Person* renounces the attempt prior to it being discovered by a third party not involved in the *Attempt*.

Code: The World Anti-Doping Code.

Competition: A single race, match, game or singular athletic contest. For example, the finals of the Olympic 100-meter dash. For stage races and other athletic contests where prizes are awarded on a daily or other interim basis the distinction between a *Competition* and an *Event* will be as provided in the rules of the applicable International Federation.

Consequences of Anti-Doping Rules Violations: An *Athlete's* or other *Person's* violation of an anti-doping rule may result in one or more of the following: (a) Disqualification means the *Athlete's* results in a particular *Competition* or *Event* are invalidated, with all resulting consequences including forfeiture of any medals, points and prizes; (b) Ineligibility means the *Athlete* or other *Person* is barred for a specified period of time from participating in any *Competition* or other activity or funding as provided in Article 10.9; [and (c) Provisional Suspension means the *Athlete* or other *Person* is barred temporarily from participating in any *Competition* prior to the final decision at a hearing conducted under Article 8 (Right to a Fair Hearing).]

Disqualification: See *Consequences of Anti-Doping Rules Violations* above.

Doping Control: The process including test distribution planning, *Sample* collection and handling, laboratory analysis, results management, hearings and appeals.

Event: A series of individual *Competitions* conducted together under one ruling body (e.g., the Olympic Games, FINA World Championships, or Pan American Games).

In-Competition: For purposes of differentiating between *In-Competition* and *Out-of-Competition* Testing, unless provided otherwise in the rules of an International Federation or other relevant *Anti-Doping Organisation*, an *In-Competition* test is a test where an *Athlete* is selected for testing in connection with a specific *Competition*.

Independent Observer Program: A team of observers, under the supervision of WADA, who observe the *Doping Control* process at certain *Events* and report on observations. If WADA is testing *In-Competition* at an *Event*, the observers shall be supervised by an independent organisation.

Ineligibility: See *Consequences of Anti-Doping Rules Violations* above.

International Event: An *Event* where the International Olympic Committee, the International Paralympic Committee, an International Federation, a *Major Event Organisation*, or another international sport organisation is the ruling body for the *Event* or appoints the technical officials for the *Event*.

International-Level Athlete: *Athletes* designated by one or more International Federations as being within the *Registered Testing Pool* for an International Federation.

International Standard: A standard adopted by WADA in support of the *Code*. Compliance with an *International Standard* (as opposed to another alternative standard, practice or procedure) shall be sufficient to conclude that the procedures addressed by the *International Standard* were performed properly.

Major Event Organisations: This term refers to the continental associations of *National Olympic Committees* and other international multi-sport organisations that function as the ruling body for any continental, regional or other *International Event*.

Marker: A compound, group of compounds or biological parameters that indicates the *Use of a Prohibited Substance or Prohibited Method*.

Metabolite: Any substance produced by a biotransformation process.

Minor: A natural *Person* who has not reached the age of majority as established by the applicable laws of his or her country of residence.

National Anti-Doping Organisation, NADO: The entity(ies) designated by each country as possessing the primary authority and responsibility to adopt and implement anti-doping rules, direct the collection of *Samples*, the management of test results, and the conduct of hearings, all at the national level. If this designation has not been made by the competent public authority(ies), the entity shall be the country's *National Olympic Committee* or its designee.

National Event: A sport *Event* involving international or national-level *Athletes* that is not an *International Event*.

National Federation: A national or regional entity which is a member of or is recognized by IF as the entity governing the IF's sport in that nation or region.

National Olympic Committee: The organisation recognized by the International Olympic Committee. The term *National Olympic Committee* shall also include the National Sport Confederation in those countries where the National Sport Confederation assumes typical *National Olympic Committee* responsibilities in the anti-doping area.

No-Advance Notice: A *Doping Control* which takes place with no advance warning to the *Athlete* and where the *Athlete* is continuously chaperoned from the moment of notification through *Sample* provision.

No Fault or Negligence: The *Athlete's* establishing that he or she did not know or suspect, and could not reasonably have known or suspected even with the exercise of utmost caution, that he or she had *Used* or been administered the *Prohibited Substance* or *Prohibited Method*.

No Significant Fault or Negligence: The *Athlete's* establishing that his or her fault or negligence, when viewed in the totality of the circumstances and taking into account the criteria for *No Fault or Negligence*, was not significant in relationship to the anti-doping rule violation.

Out-of-Competition: Any *Doping Control* which is not *In-Competition*.

Participant: Any *Athlete* or *Athlete Support Personnel*.

Person: A natural *Person* or an organisation or other entity.

Possession: The actual, physical possession, or the constructive possession (which shall be found only if the person has exclusive control over the *Prohibited Substance/Method* or the premises in which a *Prohibited Substance/Method* exists); provided, however, that if the person does not have exclusive control over the *Prohibited Substance/Method* or the premises in which a *Prohibited Substance/Method* exists, constructive possession shall only be found if the person knew about the presence of the *Prohibited Substance/Method* and intended to exercise control over it. Provided, however, there shall be no anti-doping rule violation based solely on possession if, prior to receiving notification of any kind that the *Person* has committed an anti-doping rule violation, the *Person* has taken concrete action demonstrating that the *Person* no longer intends to have *Possession* and has renounced the *Person's* previous *Possession*.

Prohibited List: The List identifying the *Prohibited Substances* and *Prohibited Methods*.

Prohibited Method: Any method so described on the *Prohibited List*.

Prohibited Substance: Any substance so described on the *Prohibited List*.

Provisional Hearing: For purposes of Article 7.5, an expedited abbreviated hearing occurring prior to a hearing under Article 8 (Right to a Fair Hearing) that provides the *Athlete* with notice and an opportunity to be heard in either written or oral form.

[Provisional Suspension]: See *Consequences* above.]

Publicly Disclose or Publicly Report: To disseminate or distribute information to the general public or persons beyond those persons entitled to earlier notification in accordance with Article 14.

Registered Testing Pool: The pool of top level *Athletes* established separately by each International Federation and *National Anti-Doping Organisation* who are subject to both *In-Competition* and *Out-of-Competition Testing* as part of that International Federation's or Organisation's test distribution plan.

Sample/Specimen: Any biological material collected for the purposes of *Doping Control*.

Signatories: Those entities signing the *Code* and agreeing to comply with the *Code*, including the International Olympic Committee, International Federations, International Paralympic Committee, *National Olympic Committees*, National Paralympic Committees, *Major Event Organisations*, *National Anti-Doping Organisations*, and WADA.

Tampering: Altering for an improper purpose or in an improper way; bringing improper influence to bear; interfering improperly to alter results or prevent normal procedures from occurring.

Target Testing: Selection of *Athletes* for *Testing* where specific *Athletes* or groups of *Athletes* are selected on a non-random basis for *Testing* at a specified time.

Team Sport: A sport in which the substitution of players is permitted during a *Competition*.

Testing: The parts of the *Doping Control* process involving test distribution planning, *Sample* collection, *Sample* handling, and *Sample* transport to the laboratory.

Trafficking: To sell, give, administer, transport, send, deliver or distribute a *Prohibited Substance* or *Prohibited Method* to an *Athlete* either directly or through one or more third parties, but excluding the sale or distribution (by medical personnel or by *Persons* other than an *Athlete's Support Personnel*) of a *Prohibited Substance* for genuine and legal therapeutic purposes.

Use: The application, ingestion, injection or consumption by any means whatsoever of any *Prohibited Substance* or *Prohibited Method*.

APPENDIX 2:

Listing of tests for the paddler Erik Verås Larsen 1993-2004

I have decided to publish all of the doping tests I have been through over the years.

Date	Location	Test	Tested by	Result
2004-12-13	Toppidrettsenteret, NOR	Urine	ADN ⁵	Negative
2004-12-13	Toppidrettsenteret, NOR	Blood	ADN ⁵	Negative
2004-08-28	Schinias, GRE	Urine	WADA ²	Negative
2004-08-27	Olympic Village, GRE	Blood	WADA ²	Negative
2004-08-27	Schinias, GRE	Urine	WADA ²	Negative
2004-07-27	Årungen, NOR	Urine	ADN ⁵	Negative
2004-06-19	Racice, CZE	Urine	IDTM ⁴	Negative
2004-06-12	Tysvær, NOR	Urine	ADN ⁵	Negative
2004-06-12	Tysvær, NOR	Blood	ADN ⁵	Negative
2004-06-07	Bærum, NOR	Urine	ADN ⁵	Negative
2004-06-07	Bærum, NOR	Blood	ADN ⁵	Negative
2004-05-22	Poznan, POL	Urine	IDTM ⁴	Negative
2004-05-15	Årungen, NOR	Blood	ADN ⁵	Negative
2004-05-15	Årungen, NOR	Urine	ADN ⁵	Negative
2004-04-20	Sandvika, NOR	Urine	ADN ⁵	Negative
2003-10-29	Sandvika, NOR	Urine	IDTM ⁴	Negative
2003-09-20	Kristiansand, NOR	Urine	ADN ⁵	Negative
2003-09-07	Gainesville, USA	Blood	WADA ²	Negative
2003-09-07	Gainesville, USA	Urine	WADA ²	Negative
2003-09-06	Gainesville, USA	Urine	IDTM ⁴	Negative
2003-08-27	Årungen, NOR	Blood	WADA ²	Negative
2003-08-27	Årungen, NOR	Urine	WADA ²	Negative
2003-08-02	Kristiansand, NOR	Urine	NIF ¹	Negative
2003-06-12	Årungen, NOR	Urine	NIF ¹	Negative
2003-05-13	Årungen, NOR	Urine	NIF ¹	Negative
2003-05-13	Årungen, NOR	Blood	NIF ¹	Negative
2003-04-11	Seville, ESP	Urine	WADA ²	Negative
2002-08-06	Årungen, NOR	Urine	NIF ¹	Negative
2002-08-06	Årungen, NOR	Blood	NIF ¹	Negative
2002-07-28	Årungen, NOR	Urine	NIF ¹	Negative
2002-07-28	Årungen, NOR	Blood	NIF ¹	Negative
2002-07-09	Årungen, NOR	Urine	NIF ¹	Negative
2002-07-09	Årungen, NOR	Blood	NIF ¹	Negative
2002-02-20	Bærum, NOR	Urine	NIF ¹	Negative
2002-01-04	Bærum, NOR	Urine	NIF ¹	Negative
2001-09-29	TIS ³ , NOR	Urine	NIF ¹	Negative
2001-09-02	Stockton, UK	Urine		Negative
2001-08-14	Årungen, NOR	Urine	NIF ¹	Negative
2001-07-15	Milano, ITA	Urine		Negative
2001-06-07	Oslo, NOR	Urine	NIF ¹	Negative

2001-05-13	Seville, ESP	Urine		Negative
2001-05-22	Årungen, NOR	Urine	NIF ¹	Negative
2001-05-22	Årungen, NOR	Blood	NIF ¹	Negative
2000-12-05	Oslo, NOR	Urine	NIF ¹	Negative
2000-08-22	Årungen, NOR	Urine	NIF ¹	Negative
2000-06-22	Duisburg, GER	Urine		Negative
2000-04-10	Oslo, NOR	Urine	NIF ¹	Negative
2000-01-26	Seisser Alm, ITA	Urine	NIF ¹	Negative
1999-07-05	Oslo, NOR	Urine	NIF ¹	Negative
1999-06-19	Årungen, NOR	Urine	NIF ¹	Negative
1999-01-14	Seisser Alm, ITA	Urine	NIF ¹	Negative
1997-03-23	Flekkefjord, NOR	Urine	NIF ¹	Negative
1995-03-15	Flekkefjord, NOR	Urine	NIF ¹	Negative
1993-11-29	Flekkefjord, NOR	Urine	NIF ¹	Negative

¹ » The Norwegian Confederation of Sport

² » World Anti-Doping Agency

³ » Toppidrettssenteret

⁴ » International Doping Tests & Management

⁵ » Anti-Doping Norway

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APPENDIX 3:

Interview Guide

PART 1: GENERAL

1. Organisational structure

- A. Who governs the ADO?
- B. How much staff was used in 2004 for planning doping controls?

2. Funding

- A. What was the budget for the ADO in 2004 and 2005?
- B. What percentage of your budget is spent on doping controls?
- C. Who funds the ADO?
- D. How is the doping control funded?

3. Organisational and personnel independence

- A. Do sport federations order tests/ask you for testing of their athletes (OOC)?
- B. Is the ADO independent of the sport?
- C. Can the ADO plan and carry out doping control without the knowledge or interference of the sport? (IC and OOC)
- D. How many DCOs do you have?
- E. Do DCOs receive salaries or is it voluntary work?
- G. Full-time DCOs can be more effective than volunteers or part-time DCOs. What are your thoughts on this issue?
- H. How do you recruit DCOs?
- I. How is the procedure of the employment?
- J. Are all DCOs working for the ADOs re-trained and re-educated before they are re-accredited? At what intervals does re-accreditation take place?
- K. Are all DCOs volunteers, contracted or employed by the ADO independent of the sport in which they carry out doping controls?
- L. Are the DCOs given the authority to select athletes for testing at any point? If so, how and when? How often does this occur annually?

PART TWO: PROCEDURES AND JUSTIFICATIONS

4. Main Questions

- A. Is the most important goal, if any, for the ADO to detect, deter or prevent doping?
- B. Is the focus of the controls on athletes or sports?
- C. Is the priority on top-level athletes or sport at lower levels of performance?
- D. What is the distribution of testing in-competition and out-of-competition?
- E. What is the distribution between Random and Target Testing?

5. Test Distribution Planning

(- Has the ADO identified a testing pool?)

- A. **Registered Testing Pool:** How many athletes are on the list?
- B. What are the criteria for having an athlete on the list?
 - What about athletes on lower level, e.g. candidates for Beijing?
 - Do you focus extra on some disciplines or nations?
- C. How is the testing pool maintained?
- D. How many athletes in your testing pool are also in testing pools for IFs?
- E. Do you work together with IFs or others on testing the athletes? Several bodies are authorised to do OOC-testing, WADA, IF, NADO. How does this work in your case?

- F. **Whereabouts Information**; How is the organisation of the athletes' duty to report?
 - Fax, internet, text messages
- G. What if s/he changes his/her plans? Goes to a cinema and then a party, or goes hiking for the weekend. Does s/he have to report it?
- H. If you/the DCO cannot locate the athlete; what are the procedures?
- I. How many Unavailable Athlete Reports did you receive in 2004?
- J. Do you feel the system for Whereabouts Information is good enough?

6. To detect:

Personnel knowledge, competence, responsibilities and authorities:

- A. Do you have systems for obtaining and maintaining detailed knowledge of the different sports and disciplines to be tested?

No-advance notice:

- B. What is the ADO's definition of no-advance notice?
- C. How is the DCO instructed to approach an event in order to locate an athlete/athletes?
- D. Do any sport federations get any information about upcoming tests?

Tip-offs/information:

- E. In what way do you receive tip-offs about doping?
- F. Do you have a system for tip-offs?

7. To deter:

- A. Are the trials/hearings open to the media?
- B. How are verdicts announced?
- C. Do athletes lose financial support from their federations?
- D. How are athletes who are caught doping considered outside of sport and in the public sphere?
- E. Who other, if any, than the athlete is punished?

8. To prevent:

- A. How much resources are used to inform the athletes and their support personnel? (*of the list of prohibited substances, rules and regulations related to doping infractions and general anti-doping attitudes and information?*)
- B. The WADA Code requires that the NADO should plan, implement and monitor information and educational programmes. What are the key issues? (*Substances and methods on the prohibited list? Health consequences of doping? Doping control procedures? Athletes' rights and responsibilities?*)
- C. What group of athletes are targeted (level/age) in this work?
- D. What do NADOs and/or NOCs do on ethics in general?

9. WADC

- A. What potential difficulties can arise in conjunction with the WADC?

10. Results Management

- A. Does the ADO carry out its own results management in accordance with the WADC? *If no, how is this organised and does the ADO have systems for monitoring that result management is carried out as defined in the WADC?*

11. Statistics

- A. How many no-shows in relation to number of planned tests does the ADO have?
- B. How many doping infractions related to other offences than positive samples have you registered the last year and the last three years?

12. Research

- A. Has the ADO been connected to a research programme related to doping control/testing?
- B. Has the ADO been connected to a research programme related to medical issues in relation to the use of prohibited substances?
- C. Does the ADO keep updated about other organisations' research programmes? How?