



Report of the Independent Observers

XXI Olympic Winter Games, Vancouver 2010

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INTRODUCTION AND ACKNOWLEDGEMENTS

The Independent Observer (IO) Program is an important program that was developed to provide credibility and confidence to an event's anti-doping program. The International Olympic Committee (IOC) has invited an IO Team to each Summer and Winter Olympic Games since Sydney, Australia in 2000.

The IO Team in Vancouver was a multinational group made up of representatives possessing expertise from different areas; legal, medical, laboratory, a former athlete, and several experienced anti-doping experts within the 10-member team. This wide range of experience and expertise permitted the mission to cover all areas of the doping control program.

The IO Team was well received by athletes, coaches, physicians, and doping control staff. The success of the IO Team's mission relies on the cooperation of all parties involved in an event of this magnitude and the IO Team wishes to thank all those involved for their support. In particular, the IO Team would like to acknowledge:

- Vancouver Organizing Committee (VANOC) Doping Control Staff - the professionalism and dedication of the entire Doping Control Staff including Chaperones, Doping Control Officers (DCOs) and Station Managers;
- International Federations (IFs) - the cooperation of these organizations and their venue representatives;
- Laboratory Staff – the professionalism and quality of the work provided by Prof. Christiane Ayotte and her dedicated staff at the INRS – Institut Armand-Frappier Laboratoire de contrôle de dopage - satellite laboratory in Richmond;
- VANOC Volunteers - the commitment and enthusiasm of all of the volunteers involved in the Olympic Winter Games, including the transportation coordinators, drivers and in particular the two VANOC volunteers assigned to assist the IO Office during the Games;

The IO Team would also like to specifically acknowledge and thank the VANOC Doping Control Department for their hard work, dedication and cooperation. Several years of planning and effort, led by the Director of Doping Control, Mr Jeremy Luke, resulted in a doping control program of the highest quality.

Finally, the IO Team would like to thank the IOC, and in particular IOC Medical Commission Chairman, Prof Arne Ljungqvist and Medical Director, Dr Patrick Schamasch, for their support of the IO Program and their close cooperation during the Vancouver Games. The IOC's commitment to doping free sport is evident in the resources and emphasis it places on the doping control program at each Games. This commitment and close cooperation in Vancouver resulted in what the IO Team believes was a successfully implemented doping control program of the XXI Olympic Winter Games.

Executive Summary

For the 2010 Olympic Winter Games in Vancouver Canada, held 12-28 February, a ten-member Independent Observer Team (IO Team) was invited by the International Olympic Committee (IOC) to observe all aspects of the doping control process. This included: test distribution planning, athlete selection, notification, sample collection procedures, transport and chain of custody of samples, Therapeutic Use Exemptions, laboratory analysis and results management processes. At these Games an audit style IO Program was utilized, resulting in daily IO Reports being submitted to the IOC and corrective actions, where necessary, being implemented. The cooperation received by the IO Team from both the IOC and Vancouver Organizing Committee (VANOC) ensured that this approach was effective. The IO Team recommends that this audit style approach is implemented for all future IO missions.

Given the wide scope of the Games' anti-doping program and the hundreds of hours spent by the IO Team observing that program, it is not surprising that the IO Team came forward with a number of suggestions. For the benefit of future Olympic Games, International Federations, major event organizations, other anti-doping organizations as well as the general public, many of the IO Team's observations and suggestions have been included in this report. The IO Team wants to emphasize that these suggestions should not be viewed in any way as detracting from the IO's conclusion that the doping control program at 2010 Olympic Winter Games was well-run and very effective.

The decision by VANOC to work closely with the established National Anti-Doping Organization in Canada, the Canadian Centre for Ethics in Sport, and invite international Doping Control Officers from throughout the world contributed significantly to the quality of the doping control program. This approach should be utilized for future Games.

During the course of the Games the IO Team observed and reported on some issues to the IOC and VANOC. It is important to note that none of these issues brought into question the integrity or validity of the doping control process and the high quality of the entire doping control program should be evident throughout this report.

One area that brought upon many challenges to the doping control process was the Doping Control Protocols signed by the IOC and each International Federation (IF). These protocols outlined the details related to the doping control program for each sport and discipline, including athlete selection and notification. For most events the selection criteria was very predictable (i.e. top five place finishers and three random selections). In addition the random selections were often by finishing position. Therefore the doping control officials did not know which athlete was a random selection until the end of the competition. This led to many difficulties for the chaperones when trying to locate and properly notify the athletes. The IO Team believes the need for these individual protocols should be evaluated and the process improved for future Games.

Another matter was the amount of time it took for an athlete to complete the doping control process (i.e. from the time the athlete signed into the Doping Control Station to the time the athlete signed out of the Doping Control Station). The IO Team strongly encourages the IOC, with the support of the World Anti-Doping Agency, to develop an electronic system for doping control. This electronic system could be used for each part of the process, including notification, entry/exit of the Doping Control

Station, sample collection processing and chain of custody. All information could be linked to ADAMS through the scanning of bar codes on the athlete accreditation, sample collection kits and the doping control documentation.

Finally the IO Team would like to commend the IOC and VANOC for implementing an effective high quality anti-doping program. We hope that the good practices implemented at the 2010 Olympic Winter Games, along with the recommendations in this report will assist future Games organizers in implementing effective anti-doping programs.

SCOPE OF THE IO PROGRAM

The International Olympic Committee (IOC) and the World Anti-Doping Agency (WADA) signed an agreement in 2009 outlining the framework for the Independent Observer Program for the 2010 Olympic Winter Games in Vancouver, Canada.

The observation period commenced on the date of the Opening Ceremony of the Olympic Winter Games (12 February 2010) and was formally completed on the day of the Closing Ceremony (28 February 2010). *Special note: In order to complete its report however, the IO Team continued to monitor results management and other administrative processes post-Games.*

The IO Team was granted full access by the IOC to observe all areas of the doping control program, including:

- Test Distribution Planning
- Athlete selection
- Notification of doping control
- Sample collection procedures
- Transport and chain of custody of samples
- Therapeutic Use Exemption (TUE) procedures
- Laboratory analysis
- Results Management, including hearings

The scope of the IO Team did not include a review of the IOC anti-doping rules as these had been reviewed in advance and deemed Code Compliant by WADA. In addition, some IFs (FIS, IBU, and ISU) conducted blood screening programs at the Games. These were not part of the Olympic Games doping control program and therefore outside of the scope of the IO Team.

The IO Program implemented at the 2010 Olympic Winter Games was different than that in previous Olympic missions. Traditionally the IO Team observed the doping control program throughout the event and then presented their observations in the final report published at the end of the Games. For these Games in Vancouver, an audit style approach was applied. This allowed for regular communication and feedback between the IO Team, the IOC and VANOC.

Given the wide scope of the Games' anti-doping program and the hundreds of hours spent by the IO Team observing that program, it is not surprising that the IO Team came forward with a number of suggestions. For the benefit of future Olympic Games, International Federations, major event organizations, other anti-doping organizations, as well as the general public, many of the IO Team's observations and suggestions have been included in this report. The IO Team wants to emphasize that these suggestions should not be viewed in any way as detracting from the IO's conclusion that the doping control program at 2010 Olympic Winter Games was well-run and very effective.

The IO Team was invited by the IOC Medical Commission Chair to attend all relevant meetings being held in regards to anti-doping. The communication channels were open at all times and the IO Team was invited to contact the IOC Medical Commission should any concerns require immediate attention.

The Medical Director convened daily meetings with VANOC where issues were raised and corrective actions, if any, could be taken by the IOC and VANOC. The process during the Games was as follows:

- The IO Team met every morning to discuss the observations from the field and any other issues observed;
- The IO team, represented by its Vice Chair, then met daily with the IOC Medical Director and VANOC, to verbally report on the IO Team's observations. Issues were discussed and possible corrective actions determined, where required;
- Based on the discussions at this meeting, the IO Team then submitted a daily written report outlining what was reported verbally. This was submitted via email;
- VANOC provided a timely response in writing, to the issues outlined in this daily report as necessary; and
- The IOC and VANOC reported to the IO Team any corrective actions taken on the issues reported.

Each IO Team member was assigned to observe a different venue each day (see Appendix 1). The overall strategy was to make certain that every aspect of the doping control program was thoroughly observed and reported on.

In addition to the daily observations, various members of the IO Team attended several meetings including:

- One of the two IO Vice Chairs and the Team Manager met with the IOC Medical Director and VANOC on 8 February 2010;
- An IO Vice Chair and the Team Medical Expert attended the NOC Chef de Missions meeting on 11 February 2010;
- The IO Chair and a Vice Chair met with the Court of Arbitration for Sport on 11 February 2010;
- The IO Chair and two Vice Chairs met with the IOC Medical Commission Chairman on 11 February 2010;
- An IO Vice Chair and Team Laboratory Expert met with the Laboratory Director on 12 February 2010;
- The IO Team Medical Expert met several times with the IOC TUE Chairman; and
- The IO Vice Chairs met several times with the IOC Medical Director and other staff responsible for anti-doping within the IOC and VANOC throughout the Games.

Recommended Area/s of Improvement:

1. The IO Team recommends that the audit style IO Program be used for all future IO missions, from smaller events to large events like the Olympic Games. The daily communication and feedback between the IO Team and the event organizer allows for continuous improvement of the doping control program throughout the event.

DOPING CONTROL PROGRAM

Based on the IO Team's observations throughout the Games, the overall planning and execution of the doping control program by the IOC and VANOC was very effective. All aspects of an effective program appeared to be well thought out and procedures had been developed to ensure proper implementation. It takes a significant time and effort to develop and implement procedures for all areas in a doping control program. It would be useful to have a process whereby those responsible for the Doping Control program for future Games can fully benefit from the experience of previous Games.

Recommended Area/s of Improvement:

1. To ensure a proper legacy for future event organizers, the IOC should consider engaging the doping control staff from previous Olympic Games to develop a Model of Best Practice for Olympic Games Doping Control Programs which would outline all of the details one must consider when implementing a doping control program at a major games.

Taskforce

Based on the model established at the 2002 Olympic Winter Games and refined at subsequent Olympic Games, the IOC created a Taskforce consisting of the IOC, VANOC and WADA to plan and coordinate out-of-competition testing program¹ at the Games. This Taskforce worked closely together in the months leading up to, and throughout the Games, to implement an effective out-of-competition testing program including: developing a Test Distribution Plan (TDP); collecting whereabouts information; liaising with International Federations (IFs), National Anti-Doping Organizations (NADOs) and National Olympic Committees (NOCs); and coordinating testing.

Test Distribution Planning

As mentioned above, the Taskforce developed a TDP for the out-of-competition testing program; while the IOC and VANOC worked with the IFs to determine the TDP for in-competition testing. Upon review of the overall TDP, it appears that the Taskforce did a commendable job in identifying the high risk sports and allocating a sufficient amount of out-of-competition tests to them. The in-competition program was also thoroughly planned well in advance.

The IOC's plan was to collect the most samples at an Olympic Winter Games to date – over 2000 (urine and blood). Pending the publication of the final statistics by the IOC, it appears that their planned testing numbers were reached. The IOC has reported to the IO Team that a total of 2149 samples were collected, including 1742 urine samples and 407 blood samples. In addition the IOC collected blood samples (36) for Athlete Biological Passport purposes.

¹ Out-of-competition testing during the Games period 4-28 February 2010 was subject to the full in-competition analytical menu outlined in the International Standard for the Prohibited List 2010.

Out-of-Competition Testing

Between 4 and 28 February, the IOC reported that it collected 642 urine samples and 253 blood samples out-of-competition. This number compared very favorably to the 428 samples that were collected at the Turin Olympic Winter Games in 2006 (as reported in the IO Report for those Games).

It should be noted that since the IOC designates the entire period of the Games as “in-competition” with regard to application of the full analytical menu used by the laboratory, the term “out-of-competition” tests described all samples collected during the period of the Games except those collected immediately after a competition, which were called in-competition tests. The overwhelming majority of the out-of-competition tests were target tests on specific athletes before their first competition. A portion of the samples were collected after an athlete had already competed.

Out-of-competition testing took place at Olympic venues in Vancouver and Whistler and at other locations around the world where Games participants were training. The IOC reported that a total of 71 out-of-competition samples were collected outside of the Games venues.

The Taskforce’s out-of-competition TDP reflected input from IFs and others through sport specific intelligence and information. In developing the TDP, the Taskforce first allocated the planned number of out-of-competition tests between the various sport disciplines based on the risk factors identified in the International Standard for Testing. The Taskforce then allocated each sport and discipline into high, medium and low risk categories. The Taskforce then selected specific athletes within those disciplines for target testing based on a number of factors, including: recommendations from IFs, prior testing data on an athlete available in ADAMS and/or provided by other Anti-Doping Organizations (ADOs), doping history in the athlete’s sport or country, the effectiveness of the athlete’s NADO in accomplishing Code-compliant no advance notice testing, “no start” blood testing information provided by the athlete’s IF, reports by the Games cleaning personnel of suspicious waste material found and other intelligence information, and the likelihood that the athlete would achieve competitive success during the Games. There was also an agreement in place between the IOC and Canadian Customs regarding doping-related information, however, the IO understands that no circumstances occurred that would have lead to the customs agency needing to share information under this agreement during the Games.

The IO observed that in most cases, when all risk factors were considered, the appropriate athletes were identified and tested before their first competition in the Olympic Games. For example, all but two of the 18 medalists in the individual Cross-Country events were tested out-of-competition before their first race by the IOC. In Biathlon, 15 of the 24 medalists were tested out-of-competition before their first race by the IOC. When out-of-competition and in-competition tests are considered together, approximately one-half of the individual medal winners in Cross-Country Skiing and Biathlon were tested at least three times during the period of the Olympic Games.

The IO also reviewed the out-of-competition testing data with respect to the type of sample collected (urine/blood) and the type of supplemental laboratory analysis requested for the sample (EPO/insulin). It was apparent to the IO that, in hindsight, too few of the urine samples in the disciplines that are considered at higher risk for

EPO abuse had been designated by the Taskforce for EPO analysis. The Taskforce came to a similar conclusion, and toward the end of the Games made a specific request to the laboratory identifying 121 out-of-competition samples in the disciplines of Cross-Country Skiing, Biathlon and Speed Skating to be further analyzed for EPO. The laboratory was scheduled to conduct these analyses during the period of the Paralympic Games and to date all those samples analyzed have been reported as negative.

The IOC conducted a limited number of follow-up target tests on athletes between competitions or after they had finished competing in the Games. Some target tests were conducted at the request of the IFs (based on information from their blood screening programs). The IOC did itself however have access to very useful information in the comments section of the laboratory test reports of samples analyzed during the Games. There were several instances where unusual patterns appeared when multiple sample results from a single athlete were viewed together. For example, several athletes had significant differences in their T/E ratios during the Games (with the sample with the highest ratio being IRMS negative). Other athletes produced samples that were too dilute to analyze. The IOC, like the IO, has all of the necessary information to connect sample numbers to athletes and therefore could have reviewed multiple sample reports from the same individual to detect unusual patterns that might have warranted the collection of further samples from that individual.

Recommended Area/s of Improvement:

1. The IOC should develop a process whereby it reviews all relevant information provided by the laboratory, IFs, etc and conducts intelligent target tests on athletes at the Games.
2. The IOC's Medical Commission includes some of the foremost medical and laboratory experts in the world. These experts should be used to review all information provided by the laboratory, IFs, etc in order to recommend effective target testing.
3. The IO Team recommends that for sports which have a high risk of EPO use, all samples collected, both in-competition and out-of-competition should be analyzed for EPO.
4. For the out-of-competition Games testing, 100% of the EPO analysis was allocated to the high risk sports as identified by the IOC. The IOC should consider increasing the total number of EPO analysis conducted, including allocating some EPO analysis to the medium risk sports it identified. There are some sports which the Taskforce identified as medium risk which would have also benefited from out-of-competition Games EPO analysis (these sports did have EPO analysis conducted during post competition testing).

Athlete Whereabouts Information

The primary purpose of requiring athletes to provide whereabouts information is to ensure that athletes can be located for no advance notice out-of-competition testing. Since virtually all of the athletes whom the IOC targeted for out-of-competition testing within the Olympic venues were in fact located for out-of-competition testing, any deficiencies in the whereabouts information provided by athletes in Vancouver

did not cause major issues with the quality of the IOC's out-of-competition testing effort.

The IOC's anti-doping rules for the Games provided that "each NOC is required to ensure that each *Athlete* participating on its behalf in the *Olympic Games* provides to the IOC by no later than the date of the opening of the Olympic Village for the *Olympic Games*, namely, 4 February 2010; all of the whereabouts information specified in Article 11.3 of the *International Standard for Testing* for each day of the period of the *Olympic Games* so that the IOC can locate each such *Athlete* at any time during that period." (Article 4.5.1) The rules go on to describe whereabouts requirements that are more comprehensive than the International Standard for Testing (IST), specifically the requirement that the athlete include in his or her whereabouts filing the time and place where the athlete will take his/her breakfast, lunch and dinner or attend any media or press conference. The IO's review of whereabouts filings by Games participants reflects that this additional whereabouts information was generally not supplied by athletes. Further, the IO understands that the additional information was not used by the IOC for locating athletes or necessary for effective testing.

In late 2009, the IOC asked IFs and NADOs to expand their Registered Testing Pools (RTP) to include athletes on the long list of Games participants. After the expansion of these International and National RTPs, there remained approximately 160 Games participants who were placed in a special Olympic Games Whereabouts Pool. Not surprisingly, many of these athletes and their NOCs had little or no prior experience with whereabouts requirements. Also not surprisingly, quite a few of them missed the 4 February deadline for participants in the Olympic Games Whereabouts Pool to file whereabouts information. Rather than declare a substantial number of apparent filing failures, the IOC extended the deadline for filing whereabouts information through 6 February, then worked with the NOCs to get the delinquent forms filed. After 6 February, approximately 50 apparent filing failures remained. Twenty-one (21) athletes were ultimately assessed filing failures, and these decisions have been reported to the respective International Federations. The remaining apparent filing failures were resolved through an administrative review process that identified a variety of reasons for the apparent failure, including determinations that the athlete had not been negligent, misplaced paperwork, and several instances where the IOC could not establish that the athletes had ever been notified of their whereabouts filing obligations in accordance with the IST.

The IOC reported to the IO that, other than some initial confusion when some teams first checked into the Village, it was able to locate most athletes for out-of-competition testing. For those athletes who chose to live and train outside of the Olympic venues between 4 February and the date of their first competition in the Games, the IOC was able to successfully use the RTP whereabouts information provided by the athletes in most cases. To locate the large majority of athletes who chose to live and train within the bubble of the Olympic venues, the IOC relied primarily on the unique information available in the Olympic setting, such as assigned training times, transportation schedules, and individual room numbers in the two Olympic Villages. Because the IOC was usually able to successfully conduct out of competition testing on the athletes selected for testing, there was only one instance where the IOC declared a missed test in accordance with the IST because the athlete was not available during the one-hour testing window identified by the athlete or on the athlete's whereabouts form.

The IOC has also reported to the IO Team that there are four (4) pending reviews of possible Filing Failures / Missed Tests.

Recommended Area/s of Improvement:

1. The IO suggests that, for future Games, whereabouts information requirements as specified in the IST should suffice and the IOC need not to require additional information from the athletes. The IOC rule could be appropriately amended.
2. For those athletes who are not already included in a NADO or International Federation RTP, the IOC should consider not requiring whereabouts information from athletes while they are living and training within the bubble of the Olympic venues.
3. Implementation of a 'whereabouts' education program for all NOCs should be considered to ensure they understand their obligations related to the IST and the Games and the potential consequences of not fulfilling these obligations.
4. The IOC should consider implementing a process whereby it can confirm that the NOCs have followed up with their respective athletes and informed them on all information related to the Olympic Games, including the whereabouts requirements.
5. The IOC should continue to follow up with those NOCs who do not fulfill their obligations related to the provision of whereabouts information.

In-Competition Testing

The in-competition TDP that was developed by the IOC, VANOC and the IFs was based on the IF Protocols and corresponding selection criteria (see IF Protocol section below) which were agreed to in advance of the Games. Tests were planned in all competitions, including qualification rounds. While the selection criteria are often outlined by the IFs, the IO Team observed some areas that may be considered for improvement.

Recommended Area/s of Improvement:

1. Increase the number of EPO analysis in some of the high risk sports identified by the IOC. While all urine samples collected in sports such as Cross Country Skiing and Nordic Combined were analyzed for EPO, in other sports such as Biathlon and Long Track Speed Skating, only half of the urine samples were analyzed for EPO. In sports such as these it may be advisable to increase the number of EPO analysis.
2. The IO Team suggests that the IOC consider reallocating some tests that were conducted in low risk sports (as identified by the IOC) such as Curling to other higher risk sports. Conducting tests during every round of a Curling event may not be necessary; some of these tests may be better used as target tests for other higher risk sports.

International Federation Protocols

For every Olympic Games the IOC, Local Organizing Committee and each IF sign a Doping Control Protocol that outlines the anti-doping processes and procedures for in-competition testing in that particular sport. This includes the selection and notification policy for each sport. For these Games the selection criteria were fairly consistent across the IFs – the top five placed athletes plus three random selections during medal events and four (4) random tests during qualification rounds. There were sports such as Curling and Ice Hockey where this approach was not adopted. Overall, the selection criterion was reflective of previous Winter Games and thus very predictable to officials and athletes.

It is to be noted that in the development of the out-of-competition program, the IFs have accepted that the IOC Taskforce would take responsibility for and make decisions in regards to the TDP.

Despite the considerable work put into formulating and formalizing the in-competition protocols, some IF procedures made it impossible to notify athletes immediately following the completion of their competition. The agreed protocol with the International Skating Union for example, stated that all random selections would be done on a finishing position, using the official competition results. In practice, the IO observed significant difficulties because notification was not permitted to occur until the final results were determined at the end of the event. This effectively meant that some athletes had up to three hours after competing to do whatever they liked, unchaperoned, before they were notified. The IO Team considers this to be a serious risk that could possibly undermine the doping control process as it permits any athlete who has taken a prohibited substance with an opportunity to do what they can to mask the presence of that substance prior to their notification.

By comparison, the protocols in place with the Ski, Biathlon, Ice Hockey, Bobsleigh, Curling and Luge Federations stated that all random selections would be done based on the athlete's start number using the official start list. These random selections were notified immediately following their competition. In all of these sports except Ice Hockey and Curling, five alternate athletes would also be selected in the event the random selections were to place in the top five, who would then by default be notified because of their final position.

On two occasions athletes were observed to have been notified for doping control despite having to compete in another event shortly thereafter. On both occasions the athlete was understandably frustrated and upset that they had been notified when they had not finished competing that day. Shadowing athletes (i.e. following the athlete at a distance) as opposed to notifying them created similar anxiety in the athletes and did not necessarily ensure quicker location of the athletes once it came time to notify them.

The IO Team noted that in sports where athletes compete in a "team", only a percentage of the team would be tested. For example, during the four man Bobsleigh competition, only two members of each sled were selected for testing. Another example is that of Skating, when only one member of a team (i.e. Speed Skating Team Pursuit) or pair (i.e. Figure Skating) would be selected for testing.

Recommended Area/s of Improvement:

1. The IO Team recommends that the selection criteria for each sport and event be varied and thus less predictable to everyone involved. Whilst accepting that the general test numbers can be agreed with the IF, the ability to vary the selection criteria across the competition would ensure that the testing of athletes beyond the top five plus three random is less predictable. The reason for testing the top five placed athletes is recognized (i.e. to allow an athlete who has been stripped of a medal to be replaced by an athlete who has been tested).
2. Overall the IO Team questions the need for these Doping Control Protocols. It is recommended that the IOC take full responsibility and determine the selection criteria and notification procedures for the Olympic Games. This would eliminate the inconsistencies and inadequacies in the procedures of some of the IFs. A uniform approach would need to acknowledge the sensitivities of a particular sport whilst seeking to deliver the best possible anti-doping program.
3. The IO Team recommends that, in addition to the comments above concerning the IOC for an Olympic Games, the IFs also review their anti-doping rules and procedures and revise them to provide that random athlete selection and notification are by name or by start/bib number and to otherwise ensure that processes are as effective as possible.
4. The IO Team recommends that for sports such as two or four man Bobsleigh, Pairs Figure Skating or Long Track Speed Skating Relay, all members of the team, in particular during medal rounds, should be tested. This principle, where possible, should also be applied to all team sports. The IO Team does however recognize the practical difficulties in testing all members of a team in some sports (i.e. in Ice Hockey this would mean conducting up to 40 tests per match).

NOTIFICATION AND CHAPERONING OF ATHLETES

As has been identified in previous IO reports, the notification of athletes remains one of the greatest challenges of the doping control procedure. Factors such as language barriers, crowded access, officious media and broadcasters and the nuances of an IF's selection and notification policy are just examples of the hurdles that face chaperones.

Well trained chaperones and proper adherence to the notification procedure are crucial to the doping control process. How effectively this responsibility is implemented, sets the tone for the remainder of the doping control process. Athletes and support personnel take their first impression of the entire doping control process from the notification and chaperoning stage. If this is not conducted professionally or efficiently it can taint the rest of the experience for the athlete.

Overall, the actual notification and chaperoning process at the Games was conducted competently. The chaperones were well briefed by the Station Manager and/or Chaperone Coordinator prior to each doping control session. Most chaperones took their responsibilities very seriously and ensured that they notified the athlete and chaperoned them according to procedure. However, there were a few issues observed throughout the course of the Games, that should be considered for improvement for future Games.

Recruitment and Training of Chaperones

While the IO Team did not observe the process for training chaperones, VANOC explained the extensive training program that was put in place for those volunteers appointed to be chaperones. All chaperones were recruited in early 2008 and attended a full day training workshop later in 2008. All chaperones participated in at least one test event in 2008 and/or 2009 and were evaluated by VANOC staff. In addition, the Chaperones were included in the domestic testing program of the Canadian Centre for Ethics in Sport (CCES), the NADO in Canada. On the eve of the Games, the chaperones were required to attend another half-day training session and venue walkthrough. And finally, throughout the Games they were evaluated daily by the Chaperone Coordinator and appropriate follow-up was conducted as necessary.

Venue Logistics

It is clear that great lengths were taken to create a good relationship with each of the Venue Managers to ensure that the chaperones had the necessary access to the athletes at all times. VANOC Doping Control staff attended Venue specific meetings in the lead up to the Games to ensure doping control was an integral part of the logistical set up of the venues and during the course of the Games, the Doping Control Station Managers attended daily venue meetings.

In addition to their Accreditation Card, Doping Control personnel had two additional methods of identification/accreditation. The first one was a specific doping control station pass and the second one was a purple sleeve that was worn by all doping control staff when on the field of play. However, at times this identification was still not enough. Access to the field of play and mixed zone was sometimes restricted

despite the doping control officials (including the IO Team) having the correct accreditation and identification. The personnel from the “Host Broadcaster” (Games designated television) presented the greatest obstacle, often trying to prevent (on occasion successfully) the chaperones and other doping control officials (including the IO Team) from gaining the necessary access to conduct notification of the athletes on the field of play or to chaperone them through the mixed zone once notification was completed.

Each sport brings with it different challenges or sensitivities and the role of the Station Manager is critical to not only dealing with issues arising in the doping control station but also to fully understand the challenges and requirements of the sports to which they are assigned. VANOC invested considerable time and resources into the recruitment, selection and training of their Station Managers and the benefits of this investment was evident throughout the Games. The training also including involvement in all of the test events held in Vancouver prior to the Games.

Recommended Area/s of Improvement:

1. The IOC and Local Organizing Committee should ensure that the doping control personnel have the necessary accreditation and identification to fulfill their responsibilities. Whatever is provided to the doping control officials should ensure their access to all necessary areas for notification and chaperoning of an athlete. This includes the field of play and the mixed zone.
2. More education and coordination should be conducted with those personnel involved in the field of play and the “Host Broadcaster” at all venues. These personnel should be made aware of the roles and responsibilities of the doping control officials (including the IO Team) and understand the reason they require access to these restricted areas.
3. Future Games Local Organizing Committees should follow VANOC’s process in recruiting, selecting and training their Station Managers. Wherever possible Station Managers should be appointed, at a minimum, two years in advance of an Olympic Games. Their attendance at a number of World Championships and/or test events would ensure that the individuals within this role obtain full orientation of the sport and are experienced enough to manage the doping control process at an event such as the Olympic Games.

Selection and Notification

The IO Team observed that the selection and notification protocols (see IF Protocols section) of some of the IFs created unnecessary confusion and challenges in identifying the correct athletes and notifying them.

Where the finishing position is used to select athletes for testing (as opposed to athlete names), the chaperones only way to ensure they do not lose sight of an athlete who may be needed for doping control is to “shadow” them. This can be very challenging to do since the athletes are free to go anywhere within the venue (and sometimes leave the venue!) until such time as the finishing positions are clear (i.e. the event has finished).

Shadowing must be discreet and undertaken from a distance. An athlete will be able to recognize if they are being followed by someone, especially if this is done at close

range and by an individual wearing a purple 'doping control' sleeve on their arm. It should also be recognized that the athlete has effectively been put on notice that they might be required for doping control and yet the chaperone is limited in where they can go (i.e. entry into a changing room or a waxing lodge is not permitted) as the athlete has not yet been formally notified.

For example, the procedure used in Alpine Ski worked very well and may serve as a template to be more widely employed. At Alpine Ski an athlete who was a potential top five finisher was shadowed immediately after their run. If it looked like they were going to leave the mixed zone and effectively enter an area where it would be more difficult to locate them, they were warned that they could be required for doping control and were requested to remain around the field of play/mixed zone. If it was felt the athlete was going to disregard this request and leave the designated area then the athlete would be officially notified of their selection for doping control. The IO Team believes that this was an effective compromise when employing the shadowing method, as it ensured the athlete was always within the sight of a chaperone and if it turned out that their finishing position changed and they were no longer in the selected position, it would only mean that additional tests were being collected.

Recommended Area/s of Improvement:

1. Where possible, athlete accreditations could be handed in prior to their competition and at the end of their event the athletes could be made to proceed through to an area where their accreditation can be collected after they exit the mixed zone. This way, the accreditations for any of the athletes selected for doping control can be held, and the appropriate notification and chaperoning (or shadowing – see below) can take place immediately.
2. While finishing position is required as a selection method to ensure that the top competitors are tested, random selection should be drawn by athlete name or start/bib number (see IF Protocol section for more details).
3. If the method of "shadowing" an athlete is used (i.e. following the athlete at a distance without officially notifying them) then a detailed procedure should be developed for the specific event.

Duration of Notification

In most cases the notification process was quite lengthy. While the chaperones were diligent in their delivery of the notification and the explanation of the athlete's rights and responsibilities, this was not always well received by the athlete or appropriate at the time it was done. Often the area of notification was very crowded, camera and TV crews were present, or the athletes have just finished their competition and were happy or disappointed in their results.

It should be noted that for non-English speaking athletes, chaperones were given translations of the full notification in a number of languages to provide to the athletes who required it. It was observed at times that despite an athlete having very limited or no understanding of the verbal notification, chaperones continued to notify athletes in English, thus not allowing the athlete to read the translated copy. Translation was certainly a good initiative that proved very useful in the languages it

was provided. However during an Olympic Games there are many more languages where a translation may prove useful.

Recommended Area/s of Improvement:

1. All athletes should be required to sign a declaration, which can be included in the existing athlete entry form, prior to the start of a Major Games that confirms that they have read and understood the anti-doping rules of the Games, including the athlete's rights and responsibilities when notified of their selection for doping control. Such a course of action would allow the notification aspect of doping control at the end of the competition to be shortened significantly. Upon being notified of doping control athletes would merely need to be asked whether they understood their rights and responsibilities and unless the athlete had any questions, they could proceed to signing the notification immediately. The NOC could be given responsibility for the translation of such a document so as to ensure a thorough understanding by its athletes. A short version referring to such a declaration, also translated into as many languages as is practical, could still be provided by the chaperone for the actual verbal notification.

The IO Team recognizes that signing a declaration in advance of the Games may have an impact on the International Standard for Testing and encourages WADA to evaluate this.

DOPING CONTROL PROCESS

For the purpose of this report, the doping control process commences from the time the athlete enters the doping control station until the sample collection process is complete.

In order to gain trust in the doping control process, athletes expect harmonized procedures of the highest standard. The IO Team had the opportunity to observe all doping control stations during the Games. Based on the IO Team's observations it can be reported that VANOC conducted the doping control process in accordance with the IST.

Doping Control Officers / Blood Collection Officers

The work of the doping control staff at each Olympic venue was generally consistent and of the highest quality. The IO Team believes this is a result of several factors.

- VANOC partnered with the Canadian Centre for Ethics in Sport, the NADO of Canada and this partnership enabled them to use Canadian DCOs having years of experience in the doping control process. The IO Team believes that such an approach underlines the importance of having a strong NADO in place in the host country of the Games and of the Local Organizing Committee benefiting from the partnership with the NADO in the delivery of the doping control program;
- VANOC also invited other leading NADOs and Regional Anti-Doping Organizations (RADO) to send DCOs, which facilitated an international team of qualified individuals; and
- VANOC engaged *Life Labs* of British Columbia to conduct the blood collection. All of the Blood Collection Officers (BCOs) were certified phlebotomists, ensuring a high standard of blood collection.

Recommended Area/s of Improvement:

1. The IOC should work with future Games organizers to ensure there is a strong National Anti-Doping Organization in place in the host country of the Games. The experience and quality of the work from an established NADO will assist the IOC and Local Organizing Committee in implementing an effective anti-doping program.
2. The IOC should encourage future Games organizers to invite experienced DCOs from other Anti-Doping Organizations around the world. These International DCOs are very beneficial to the Games doping control program.

Registration and Waiting at the Doping Control Station

The Games doping control stations were secure and monitored by security staff. All persons that entered the doping control stations were required to have the VANOC Doping Control Access Card and had to sign in and sign out of the doping control station. This procedure was consistently followed and as a result, access to the doping control station was appropriately controlled. However, at the Short Track Speed Skating the use of an auxiliary station for testing caused some issues related to the security of the doping control station. An athlete representative submitted a

written complaint that the auxiliary station was not locked despite the doping control kits being stored there.

VANOC Games-time follow-up: VANOC followed up with the Station Manager to discuss the situation and to ensure the auxiliary doping control station was secure at all times.

At registration, athletes were provided a medication form to complete in the waiting area of the doping control station, prior to entering the sample processing room. Such information was then transcribed onto the doping control form by the DCO. Such an approach was intended to expedite the doping control process.

The waiting room in the doping control stations were all reasonable in size, and were generally located in areas that were easily accessible. It should be noted however that in the waiting rooms, the chaperones were often sitting beside the athlete at a very close distance, consistently looking (i.e. staring) at the athlete and monitoring every movement. The IO Team recognizes the requirement of the chaperones to keep the athlete in their sight at all times; however the chaperones do not need to look (i.e. stare) as closely at the athlete as they did.

In most doping control stations there were several processing rooms available and thus athletes who were ready to provide a sample rarely had to wait for a processing room in order to proceed with their sample collection.

In some instances chaperones were allowed to stay in the doping control station even after their athlete had completed the process and had left. This at times did result in overcrowded waiting rooms. On one particular occasion the IO Team observed eighteen (18) doping control staff in the waiting room with only four athletes to be processed. In most doping control stations the space in the waiting room was only large enough to comfortably cater a couple of chaperones to monitor the room.

VANOC Games-time follow-up: VANOC communicated this concern to all Station Managers. In some doping control stations, the staff who were finished their work were asked to wait outside; while in others the IO Team did not observe change in this area.

Recommended Area/s of Improvement:

1. The sign in/sign out process could be made more efficient if the doping control station was equipped to scan electronically the athletes' accreditation when they enter and exit the doping control station (instead of physically signing the log sheet). Such scanning system was observed at some venues for wider security and access control provisions. A similar system could be considered for doping control.
2. To improve the overcrowding of waiting rooms, chaperones and other doping control staff not being utilized should be asked to wait outside until they are needed. Those left to monitor the waiting room should be educated to keep a watchful eye on the athletes, but at an appropriate distance.

Urine Sample Collection

Overall the urine sample collection procedures were of high quality and very consistent in every doping control station. There were some minor differences observed, but with a doping control program of this magnitude some differences are to be expected. None of these differences were departures from the IST.

The majority of athletes were instructed of their rights and responsibilities by the DCO in the sample processing room, even if the athlete informed the DCO that they were already informed and understood their rights and responsibilities.

The doping control process was often somewhat slow as the documentation (i.e. doping control form) was checked and rechecked several times by the DCO and Station Manager before the final signatures. Athletes did express their discontent with this process.

In the case where the sample was not suitable for analysis (i.e. dilute: specific gravity less than 1.005) the IOC and VANOC's procedures outlined that "typically" a maximum of two samples were to be collected from an athlete. The IO Team expressed some concern over this process and suggested that samples continue to be collected until one is suitable for analysis. The IO Team was advised that the approved VANOC doping control procedures for the Games included this directive to "typically" collect a maximum of two samples.

VANOC Games-time follow-up: The IO Team were advised that VANOC informed their doping control staff that in the instances when two dilute samples were recorded, that the Doping Control Station Manager contact the VANOC Director of Doping Control to assess the specifics of the situation who would then provide guidance as to whether an additional sample be needed. The IO Team did not observe any third samples collected.

It should be noted that for the testing conducted between 12-28 February 2010, 68 athletes provided dilute samples on their first attempt. On only 10 occasions was the second sample suitable for analysis (i.e. specific gravity equal to or greater than 1.005 as measured by the DCO).

Recommended Area/s of Improvement:

1. If an athlete informs the DCO that he or she is aware and understands his or her rights and responsibilities, including the consequences of a failure to comply, the DCO should be given the discretion on whether they need to be repeated.
2. The IOC, with the support of WADA, should consider the development of electronic doping control forms that are linked with the Games accreditation systems. Through the scanning of bar codes on the athletes accreditation, the sample collection equipment etc., the process would be expedited and mistakes on the form would be minimized.

If an electronic system is not put in place, recommendations 4-6 below should be considered.

3. The DCOs should be given guidance on which errors on a doping control form require a new form to be written and which errors can be crossed out and initialed by the DCO and athlete.
4. The IO Team recommends that all persons present in the processing room be recorded. This includes those persons (i.e. translator; IO member) who are not provided for on the doping control form. In these cases a supplementary report form could be completed to indicate those additional persons in the processing room.
5. In order to speed up the doping control process, the IO Team recommends that the DCOs processing the samples be given the authority and responsibility to sign off on the forms and complete the process without the final verification from the Station Manager.
6. As a standard procedure for future Games, if an athlete provides two samples that are not suitable for analysis (i.e. dilute) the DCO should continue to collect additional samples until a suitable sample is provided. Only in real exceptional circumstances (not “the logistical nature of the Games”) should an athlete be permitted to provide only two samples. In these cases a follow up target test on the athlete is strongly recommended.
7. The section on the doping control form related to anti-doping research should be made clearer, including clear advice that samples used for research are made anonymous.

Blood Sample Collection

The blood sample collection was conducted by certified phlebotomists from Life Labs of British Columbia. The blood collections at the Games were of the highest standard and the athlete's rights were protected at all times.

The IO Team observed that some athletes and team physicians questioned whether the tourniquet used while collecting blood should be kept on until the completion of the collection or removed right away. The process appeared to vary from venue to venue. Annex E, Article E 4.8 of the International Standard for Testing states “The tourniquet, if applied, shall be immediately removed after the venipuncture has been made.” The IOC Anti-Doping Rules and VANOC's Technical Procedures for Doping Control for the Vancouver 2010 Olympic Winter Games both follow the IST and state this as well.

VANOC Games-time follow-up: VANOC advised the IO Team that all blood collection was being conducted in accordance with the British Columbia provincial standards.

The IO Team observed some athletes who were selected for both urine and blood testing and could not immediately provide a urine sample asked the doping control staff if they could have their blood sample collected first. The athletes were informed that this was not possible and they must provide a urine sample first.

Recommended Area/s of Improvement:

1. The blood collection procedures, including those related to the tourniquet should follow the IST and be consistent for all blood samples collected.

2. The IO Team recommends that athletes who cannot provide a urine sample and who ask to provide their blood sample first be permitted to do so as long as all procedures and protocols are followed, including the requirement to wait and rest for 10 minutes. Other athletes who are also waiting however should be considered so as not to delay their wait any further.

Chain of Custody

VANOC implemented a detailed chain of custody procedure for samples collected in both Whistler and Vancouver. The IO Team observed the procedure from both locations and was impressed at the level of forethought and detail put into the process. The entire chain of custody process for the samples, starting from collection at the venue to transfer to the VANOC Doping Control Command Centre to transfer to the laboratory was secure and maintained the integrity of the samples.

It is also important to note that the VANOC Doping Control Command Centre was a secure site that only a limited number of VANOC doping control staff (i.e. nine persons) had access to. To enter the building an access card was required. Upon arrival at the Command Centre, one would be required to call the staff inside the building to be met at the door and escorted into the building. One would be then asked to record their name and the time on a sign in/sign out sheet.

The chain of custody process for the samples and documentation was as follows:

Samples Collected in Vancouver

1. After each sample was collected from an athlete it was locked in a small refrigerator located in the sample processing room. The DCO responsible for that room maintained the key to this fridge at all times.
2. At the end of the testing session the Station Manager collected the samples from each processing room and proceeded to verify all samples collected against the corresponding doping control documentation. Once this process was complete the Station Manager would complete the Chain of Custody Form, put the samples and laboratory copies of the doping control form into a transport bag and then seal the bag.
3. The Station Manager and a DCO (always two doping control staff) would then drive to the VANOC Doping Control Command Centre and transfer custody of the samples and documentation to the designated VANOC staff.
4. The VANOC staff would check the documentation and the samples would be placed in a refrigerator until pick up by the courier.
5. Courier pick-ups were scheduled at set times every evening and were always done by two designated employees of the courier company. The courier staff used were specifically assigned to the doping control area of the Games.
6. The courier company would then transfer the samples to the laboratory.

Samples collected in Whistler

1. As above.
2. As above.

3. The Station Manager and a DCO (always two doping control staff) would then drive to the Doping Control Station located in the Whistler Athlete Village. The samples and documentation were then transferred to the designated Station Manager located at this Doping Control Station.
4. The Athlete Village Station Manager would check the documentation and the samples would be placed in a locked refrigerator in the Station Manager's office.
5. Two courier pick-ups were scheduled at the Whistler Village – one at 19h00 and one at 01h00. The courier staff were specifically assigned to the doping control area of the Games.
6. The courier would drive to Vancouver and deliver the samples and the documents to the VANOC Command Centre.
7. The VANOC staff would check the documentation and the samples would be placed in a refrigerator until pick up by the courier.
8. Courier pick-ups were scheduled at set times every evening and were always done by two designated employees of the courier company.
9. The courier company would then transfer the samples to the laboratory.

THERAPEUTIC USE EXEMPTIONS

Athletes with legitimate medical conditions who require treatment with otherwise prohibited substances may apply for a Therapeutic Use Exemption (TUE). Athletes included in an International RTP can obtain a TUE from their IF whilst athletes in a National RTP may obtain TUEs from their NADO.

The IOC expected that most athletes competing in the Olympic Winter Games that required a TUE, would have already been granted their approval prior to the Opening of the Athlete Village (4 February 2010) and that the IOC was to have been made aware of this TUE.

For the Vancouver Games, the IOC Medical Commission established a TUE Committee (TUEC) made up of three physicians who assessed existing TUEs and considered any new applications made during the period of the Games. The IO Team would like to highlight the good collaboration with the TUE Chairman and his Assistant. Regular and open communication occurred on a daily basis.

For the first time, the IOC required that all TUEs be managed, requested and declared through ADAMS, except in justified circumstances. The use of ADAMS was a valuable tool in managing the entire TUE process during the Games.

In January 2010 an information letter regarding the IOC TUE management process was sent to the relevant bodies. In addition, the TUEC Chairman explained the process at the NOC Team Physicians meeting prior the start of the Games.

Following the International Standard for TUEs (ISTUE), the IOC TUEC accepted a Declaration of Use (DoU) for the beta-2 agonists salbutamol and salmeterol. Any other beta-2 agonists required a TUE with a complete medical file including all pulmonary function tests. The IOC MC assigned a panel to review the file of athletes suffering from asthma and its clinical variants.

The TUEC Chairman's report at the end of the Games it was stated:

- A total of seven new TUE requests were received during the period of the Games. All were granted. One of these TUEs was considered by the TUEC as retroactive.
- The TUEs included: insulin, formoterol, IV saline infusion for dehydration (done in the Athlete Village Polyclinic after the Chairman of the TUEC was informed), oxycodone for chest injury (diagnosis and treatment in the Polyclinic), hydromorphone for traumatic hemopneumothorax, methylprednisolone IV (unique administration) for fast progressive allergic eczema.
- The circumstances for the athlete who received the retroactive TUE for terbutaline were the following:
 - The athlete had a medical history of asthma and had a documented TUE for salmeterol, which is clinically used as a long acting treatment.
 - The athlete developed significant airway obstruction upon arrival into Canada. The physician correctly administered terbutaline, which is indicated in circumstances of an acute asthma exacerbation. The physician should have applied for an emergency TUE at that time but

failed to do so. Eight days after administration, the WADA-accredited laboratory in Richmond reported a trace amount of terbutaline in the athlete's sample. The IOC TUEC reviewed the documentation, agreed with the administration of terbutaline under the circumstances and granted a retroactive TUE.

- Four TUEs were received for substances that only required a DoU. The TUEC informed the athletes and asked them to complete a DoU.

In accordance with the IOC Anti-Doping Rules, the IOC TUEC evaluated 108 TUEs for athletes competing in the Games, out of which 94 were for beta-2-agonists (terbutaline or formoterol). Four TUEs (three issued by an IF and one by a NADO) required more medical information. This information was provided by the athletes and three of the four TUEs were accepted by the TUEC.

The IOC TUEC did not believe that a TUE for DHEA, granted by an IF, fulfilled the criteria of Article 4.1 of the ISTUE. In accordance with the ISTUE, the Chair of the IOC TUEC requested that WADA conduct a formal review. The WADA TUEC reviewed the file, reversed the initial decision of the IF and rejected the TUE. In accordance with the ISTUE, the reversal took effect 14 days following the notification of the decision to the athlete.

Based on the observations of the IO Team the procedures of the IOC TUEC complied with requirements of the ISTUE.

Recommended Area/s of Improvement:

1. The IOC Anti-Doping Rules require that existing TUEs be sent to the IOC no later than the date of the opening of the Olympic Village. The Chair of the IOC TUEC confirmed that this was not always followed. The IO Team recommends that all existing TUEs be entered into ADAMS before the period of the Games and at least 30 days before the event (in accordance with the ISTUE). This requirement will assist the IOC TUEC in assessing TUEs in advance of the Games and will avoid the IOC having to request a review by WADA during the period of the Games (when the athlete is already competing).
2. The IO Team observed several TUE approvals from one IF for a single use of a substance that were given a duration of one year. The IO Team recommends that this be monitored more closely and that the ADOs, including IFs and NADOs are educated on the proper process for TUEs.
3. The IO Team recommends that the athlete is directly involved in all communication related to their TUE, including any requests for further information or pending reviews.

RESULTS MANAGEMENT

Hearings before the IOC Disciplinary Commission

The IOC Disciplinary Commission heard two cases during the period of the Games. Both cases involved adverse analytical findings (AAF) for prohibited stimulants found in the urine samples of ice hockey players. The prohibited stimulant tuaminoheptane was found in an out-of-competition urine sample (as per IOC Anti-Doping Rules all samples collected during the Games period were subject to the full in-competition analytical menu) provided by Ms. Svetlana Terenteva, an ice hockey player from the Russian Federation. The stimulant pseudoephedrine (prohibited at a concentration greater than 150 micrograms per milliliter) was found in an in-competition sample produced by Lubomir Visnovsky, a Slovakian ice hockey player. In each case, the Disciplinary Commission issued a reprimand to the player with no loss of results and no disqualification of the player from the Games.

The mandate of the Disciplinary Commission is to decide whether an anti-doping rule violation (ADRV) has occurred and if so, whether any Olympic Games results involving that athlete should be annulled and/or whether the athlete (or others) should be excluded from the Games. It is then the responsibility of the athlete's IF to conduct a results management process in which a period of ineligibility or other discipline may be imposed upon the athlete (IOC Anti-Doping Rule 8.3). In team sports, anti-doping rule violations by more than one member of the team are required before disqualification of results can even be considered (IOC Anti-Doping Rule 9.1). No results of the Slovakian men's ice hockey team or the Russian Federation women's ice hockey team (which hadn't even played by the time of Ms. Terenteva's AAF) were considered for disqualification. Notwithstanding the fact that the Disciplinary Commission issued "reprimands" to both players, the Disciplinary Commission's decisions were forwarded to the International Ice Hockey Federation (IIHF) for further results management in both cases. The IO would expect the IIHF to initiate its own disciplinary proceedings against both players to determine what additional consequences, if any, should be imposed.

To put these cases in proper context, the IO believes it is important to discuss how AAFs for the stimulants tuaminoheptane and pseudoephedrine (greater than 150 micrograms per milliliter) are to be considered under the IOC's Anti-Doping Rules, which in turn incorporate the World Anti-Doping Code and the 2010 Prohibited List International Standard. Both tuaminoheptane and pseudoephedrine (greater than 150 micrograms per milliliter) are identified on the Prohibited List as "Specified Substances". AAFs for Specified Substances and other Prohibited Substances both result in the loss of competitive results (except in team sports as noted above). The other discipline that the rules impose for Specified Substances and non-specified Prohibited Substances is potentially quite different. For example, the normal period of ineligibility imposed for any AAF is two years. However, for AAFs involving a Specified Substance, the period of ineligibility can range from a reprimand to two years ineligibility. To justify any elimination or reduction of the standard two-year period of ineligibility, the athlete must establish an absence of intent to enhance sports performance and how the substance entered their body. Then the athlete's degree of fault is the criteria considered in assessing any amount the period of ineligibility is reduced.

The two decisions by the Disciplinary Commission are discussed below.

Svetlana Terenteva

The hearing in Ms. Terenteva's case took place prior to the commencement date of the IO mission. The IO was not present at the hearing and therefore cannot comment on the hearing process. The Disciplinary Commission's decision notes that Ms. Terenteva produced the sample that contained tuaminoheptane in an out-of-competition test (as per IOC Anti-Doping Rules all samples collected during the Games period were subject to the full in-competition analytical menu) on 6 February 2010. She stated that she had stopped using the relevant medication on 3 February 2010 because she knew the substance would be prohibited during the period of the Games (starting on 4 February 2010). She also knew that the Prohibited Substance would be out of her system well before the date of her first competition at the Games, namely, 14 February 2010. On the 2010 Prohibited List stimulants like tuaminoheptane are only prohibited "in-competition." It is common for athletes to receive a substantial disciplinary sanction when a stimulant (for example, cocaine) is found in a sample produced immediately following a competition, even though that stimulant may have been ingested well before the competition started. What makes the situation in this case unique is that the IOC, as it is entitled to do under the Code, has elected to declare the entire period of the Olympic Games, 4-28 February, an "in competition" period. While many of the facts recited in the Disciplinary Commission's decision are similar to cases in which athletes have received substantial sanctions, in the IO's view, the fact that the AAF in this case resulted only because of the IOC's unique definition of "in-competition" justified the Disciplinary Commission's decision not to exclude Ms. Terenteva from the Games.

Lubomir Visnovsky

Mr. Visnovsky provided a sample in a test conducted immediately following Slovakia's playoff qualification game on 24 February 2010. The laboratory reported that sample as an AAF because it contained pseudoephedrine in a quantity greater than the maximum permissible concentration of 150 micrograms per milliliter (204.6 micrograms per milliliter being the concentration reported). A concentration of this high level would not be expected from normal use of a cold medication. In advance of the Disciplinary Commission hearing, the athlete provided a written explanation of his AAF, which stated in pertinent part:

"I believe a Specified Substance entered my body because I have recently been taking an over-the-counter cold medicine called "Advil Cold & Sinus[®]." My purpose in taking Advil Cold & Sinus[®] has been to treat illness—not to enhance my sport performance. In fact, I specifically chose the Advil brand because I was told by training staff on both my NHL team and National team that it did not contain a prohibited performance enhancing substance. Moreover, when I was recently asked by testing officials to list any medications that I had taken in the last seven days, I openly and honestly disclosed the fact that I had taken "Advil—Cold" (see attached). And finally, as you know, when I was tested on the morning of February 26, 2010, that test came back negative."

The Disciplinary Commission hearing took place on 27 February. Present for the athlete were an attorney from the National Hockey League Players Association, a medical advisor from the National Hockey League Players Association, and the Slovakian Team Manager. Present from the IOC were Howard Stupp, Legal Director; Dr. Patrick Schamasch, Medical and Scientific Director; Dr. David Cowan, Games-time member of the IOC Medical Commission and expert advisor; and several other members of the IOC staff. An IO member and a representative of the IIHF were present as observers. The athlete was not present at the hearing. The Team Manager advised the Disciplinary Commission that he had told Mr. Visnovsky to rest because the team had a late game the preceding night and would play again that evening.

The athlete was given notice of his AAF on 26 February. In two subsequent samples collected on that date (one before and one after Slovakia's semi-final game in which Mr. Visnovsky participated), only very small quantities of pseudoephedrine were detected.

The hearing consisted of an introductory statement by the Disciplinary Commission, a statement of the athlete's position by the attorney for the NHL Players Association, questions from the Disciplinary Commission and responses from the athlete's representatives. When the hearing was adjourned, the Disciplinary Commission advised that a decision could be expected between noon and 14:00 that day. The IO received no oral or written notification of the Disciplinary Commission's decision until it received the Disciplinary Commission's written decision by fax at 14:44 on 28 February, the day after Mr. Visnovsky played in Slovakia's losing effort in the bronze medal game the previous evening. The IO has no way of knowing when the player or Slovakian NOC received verbal or written notice of the decision prior to the game, but the IO would have expected to have received the same notice.

While the IO has no reservations with the Disciplinary Commission's decision not to disqualify Mr. Visnovsky from the Games, it does offer some constructive observations in connection with this matter. The IO understands that Disciplinary Commission hearings are of necessity expedited proceedings, however, it appears to the IO that important evidence in this case was not brought forth during the hearing. For example:

- Since neither the athlete nor team physician were present at the hearing, the athlete's evidence could not be thoroughly tested. The only evidence from the athlete came in the form of his written statement. While the Team Manager and the lawyer and doctor from the NHL Players Association did provide some additional evidence in response to questions from the Commission, there was no indication during the hearing that any of these individuals had any firsthand knowledge of the facts. At best, they were recounting information that they had heard at some point from the athlete. Since the seriousness of an AAF for pseudoephedrine depends on whether the athlete can demonstrate lack of intent to enhance performance and his or her degree of fault, it is regrettable that no-one with firsthand knowledge of the facts was present to answer all of the questions that the Disciplinary Commission might have had.
- Without discussing in detail the shortcomings of the objective evidence presented by the athlete, there was critical objective evidence that was not discussed at the hearing that caused the IO to be satisfied that the Disciplinary

Commission reached the correct result. Had Prof. Ayotte, the Director of the Olympic Games Laboratory, been consulted, she would have provided two important pieces of objective evidence which corroborate the athlete's explanation that the pseudoephedrine in his urine came from the therapeutic use of Advil Cold and Sinus. First, the laboratory analysis of the sample also detected the presence of Ibuprofen, another ingredient in Advil Cold and Sinus. Second, Mr. Visnovsky's sample was extremely concentrated, with a specific gravity of 1.034 compared to a mid-range specific gravity of 1.020. This could explain why Mr. Visnovsky's use of Advil Cold and Sinus as directed on the product packaging could result in such high values for pseudoephedrine in his urine.

Recommended Area/s of Improvement:

1. Recognizing the expedited nature of Disciplinary Commission proceedings, the IOC should review its internal processes to make sure that all necessary witnesses and facts are before the Disciplinary Commission at the time it renders its decision. In addition, the IOC could consider use of the style of disciplinary proceedings where some member of the IOC's team is responsible for prosecuting the case, including gathering and presenting all of the relevant evidence and testing the athlete's evidence. The Disciplinary Commission, which obviously can still ask questions, would play more of a judicial decision maker role.
2. In particular, in each case before the Disciplinary Commission, the laboratory director should be consulted to assist in identifying all scientific facts relevant to the case.

Additional Case Reported After the Close of the Games

On 4 March 2010 the laboratory reported an AAF of recombinant erythropoietin (EPO). On 8 March 2010 the IO Team received a copy of the official notification to the athlete's NOC, which in turn has the responsibility to inform the athlete. On 11 March 2010 several media reported on this AAF and the IOC publicly confirmed it. The IO Team received regular updates from the IOC on the case and on 29 April 2010 received the written decision of the Disciplinary Commission. The athlete was disqualified from all the competitions she participated in at the 2010 Winter Olympic Games and the International Ski Federation was requested to consider further action within its own competence.

LABORATORY SERVICES

The laboratory anti-doping services were provided by a state-of-the-art satellite laboratory facility in a dedicated space within the Richmond Olympic Oval venue located in Richmond, British Columbia, approximately 30 minutes south of Vancouver. As a result the laboratory benefited from a high level of security afforded to an Olympic competition venue. The space around the venue was restricted and during the event, security personnel were located outside the only entrance into the laboratory. The satellite facility was established by the WADA-accredited laboratory located in Montreal, Canada, INRS – Institut Armand-Frappier – Laboratoire de contrôle de dopage.

The laboratory activities were performed by the staff of the INRS anti-doping laboratory many of whom temporarily re-located to Richmond in the months leading up to the Games. A high level of expertise and dedication was provided by Prof. Christiane Ayotte and her scientific staff in the preparation and execution stages of the analytical testing for the Olympic Winter Games. They were complemented during the time of the Games by staff from other WADA-accredited laboratories with specific expertise in certain areas of analytical practice. Scientists from the Swiss, German (Cologne), Austrian and French laboratories were involved in various facets of the analytical work. The analyses were conducted in a professional manner, in compliance to the International Standard for Laboratories (ISL) and technical documents, and around the clock coverage ensured that the laboratory services could meet the analytical and reporting timelines established by the IOC. The quality of the analyses was evident and commendable.

The laboratory was equipped with the most advanced instrumentation available and the necessary complementary equipment, supplies, reagents and standards. All ISL requirements were met with respect to the facility and equipment.

The INRS laboratory in Richmond and its staff were fully accredited on a temporary basis for the period of the Olympic Winter Games and Paralympic Winter Games. The laboratory had a recognized and effective quality management system in place according to the requirements of the ISL and the requirements of ISO/IEC 17025 via the Standards Council of Canada (SCC) in concert with the Bureau de Normalisation du Quebec (BNQ). In addition, the laboratory had successfully participated in multiple rounds of the WADA External Quality Assessment Scheme (EQAS).

The IO was given the full cooperation of the staff and unhindered access to all laboratory operations and documentation. A member of the WADA IO Team was present during various times of the day and night during the Games to provide a view of the laboratory operations at all hours; thus allowing each facet of the laboratory activities to be observed.

Recommended Area/s of Improvement:

1. For future Olympic Games, the laboratory should continue to participate in all available (urine and blood) EQAS programs. This can increase confidence in the preparations of the laboratory, especially in the case of temporary (or satellite) facilities.

Technical Processes

The laboratory procedures began with the reception of urine and blood samples from VANOC. The verification and documentation of the samples as they arrived to the laboratory, as well as the subsequent processes of distribution, analysis and storage were in compliance with the ISL and relevant Technical Documents. The laboratory chain of custody documentation covered all phases of analysis. Samples were delivered by the courier company in up to four shipments per day from central locations in Vancouver and Whistler. The deliveries were fairly consistent which facilitated the scheduling of staff. The sample shipments were delivered to a refrigerated storeroom in the laboratory space via a secured chute. The laboratory's security-person had the authorization to unlock the chute door to this sample storage space. Therefore, the couriers could deliver the samples without entering the restricted laboratory space.

The laboratory reception staff retrieved the packages from the refrigerated storage room and began the process to verify, register and distribute the samples for the various analyses. The staff worked efficiently to aliquot the samples as the shipments arrived. They made use of a wireless bar code scanner to automatically log each sample code number into the database; followed by entry of accompanying information by hand (sport, gender, tests, etc).

The IO Team identified two observations of note:

- The blood samples were not linked to their corresponding urine samples on the laboratory copy of the doping control form accompanying the samples to the laboratory. It was understood that VANOC agreed to communicate this information to the laboratory upon request and on a case by case basis.
- There were instances where the temperature monitors in the blood transport containers were missing.

VANOC Games-time follow up: VANOC explained that the temperature monitors were only used for samples collected for biological passport purposes, in accordance with the WADA Guidelines.

Recommended Area/s of Improvement:

1. The blood and urine samples collected from the same athlete should be linked on the doping control form.
2. The *WADA Blood Collection Guidelines* states that "blood samples shall be transported to the laboratory in a refrigerated state", therefore consideration to using temperature monitors for all blood transport containers as best practice ought to be given in the transportation of all blood samples.

Reporting Processes

The reporting of results from the initial testing and confirmation procedures (of both blood and urine) were provided to the appropriate results management authorities via ADAMS (Anti-Doping Administration and Management System). ADAMS provided the laboratory a platform to report their results in full compliance to the ISL. This

allowed seamless and simultaneous notification of results to the IOC as well as the IO Team for AAFs, Atypical Findings (ATF) and negative results. ADAMS also simultaneously notified the relevant IF and WADA in cases of AAFs and ATFs. The INRS laboratory should be commended for fully implementing the use of ADAMS in its daily operations.

The laboratory communicated Presumptive Analytical Findings for substances in the specific drug classes - S3. Beta-2 Agonists and S9. Glucocorticosteroids - to the IOC to receive instruction on whether further analysis was necessary. This was conducted in compliance to the ISL and WADA guidelines and the IO Team was kept informed of this communication by way of simultaneous copy.

The laboratory also included proper and relevant comments in their reports that elucidated specific observations that should have proven useful for further intelligent testing by the IOC. It appears however that as previously noted, the IOC may not have reviewed or utilized this information.

The laboratory data was checked by at least two scientists prior to the reporting of results. All findings were then electronically uploaded into ADAMS on a daily basis. The laboratory's computer information system was developed to allow an automated communications channel with ADAMS. The acceptance of the electronic data by ADAMS also ensured that the results were reported with the required accompanying information in compliance to the ISL.

Recommended Area/s of Improvement:

1. Future Games laboratories should use ADAMS to report all analytical findings. The ease of reporting and the immediate access to information by Anti-Doping Organizations are major benefits of the system.
2. The IOC should use the additional information and comments that the laboratory provides on its analytical reports more effectively. *Refer to recommendation also provided under Section: Out-of-Competition Testing (Doping Control Planning).* It may be worthwhile for the IOC and laboratory to meet before the Games and discuss the type of information that will be provided and how this information should be utilized.
3. Accredited laboratories should consider developing and implementing electronic based technology for all aspects of the laboratory work. This is particularly beneficial to major events such as the Olympic Games given the number of samples collected and timelines for the reporting of results.

Analytical Testing

The laboratory conducted the analysis of both urine and blood samples collected from out-of-competition and in-competition testing from the opening of the Athlete Village until the end of the Games (4-28 February).

The samples were analyzed for prohibited substances on the in-competition menu at all times, as detailed in the 2010 Prohibited List.

Each procedure was observed at various times of the day in order to review the laboratory's analysis in each prohibited drug class. In each analysis, the quality control samples were fit-for-purpose. The analysts displayed a high level of experience and competence and the resulting data demonstrated quality of a high level.

State of the art instrumentation was utilized for the detection of multiple classes of prohibited substances. These instruments allowed greater sensitivity than the expectations of the ISL and associated technical documents. The sensitivity of these analyses was demonstrated by the laboratory's quality control samples which were generally established to detect substances at 10 times lower (or more) than the associated minimum required performance level. The identification criteria applied by the laboratory was in compliance to the relevant WADA Technical Document for these chromatography and mass spectrometry techniques.

IRMS testing was conducted to differentiate between the endogenous and exogenous nature of target steroids. The IRMS analysis was triggered by a number of observations in the steroid profile but primarily in relation to cases of elevated T/E ratios. The IRMS analysis included multiple target steroid analytes thereby increasing the likelihood that the application of an exogenous steroid would be detected.

Pre-selected samples were designated for testing of substances in the S2. prohibited class (Peptide Hormones, Growth Factors, and Related Substances). The laboratory employed the latest technology, including IEF and SDS-PAGE, to detect various erythropoietins. There were also pre-selected samples which were designated for Insulin testing.

Extensive testing was conducted on blood samples. Pre-selected blood samples were analyzed for blood variables (hemoglobin, hemotocrit and reticulocytes) and/or blood transfusion and HBOCs. Other pre-selected samples underwent testing for recombinant Growth Hormone. Blood passport profiles were also reported.

On 25 February, the media reported that Prof. Arne Ljungqvist, Chairman of the IOC Medical Commission said that the laboratory was going to conduct additional analysis on some of the blood samples as there were signs of potential blood doping. This came as a surprise to the IO Team, especially since there was an IO Team member present in the laboratory at this time. The IO Team followed up with the laboratory as well as Prof. Ljungqvist, who indicated that he was misquoted in the media. He was referring to the fact that the IOC would be sharing all blood biological passport data with the relevant IFs so that they could analyze the data as part of their passport programs.

Quality Control Samples

The IOC Medical Commission introduced some quality control samples into their doping control program which were included in regular shipments to the laboratory and therefore the laboratory was not aware of the nature of the samples. The laboratory appropriately identified and reported the correct results for the quality control samples in ADAMS.

Equipment

The laboratory was equipped with extra instrumentation in the event of any equipment malfunction. There were two instances observed in which samples were moved immediately to a second instrument when an instrumental issue was identified. This allowed for an uninterrupted analysis under tight deadlines. Responses to service requests were quickly addressed by the manufacturer's technician(s) and the servicing was efficient. Considering the time constraints of an Olympic Games, duplication of critical equipment proved to be essential.

RECORDS MANAGEMENT

The 2010 Olympic Winter Games was the first time that IOC implemented ADAMS for record management. The IOC is to be commended for their acceptance and use of ADAMS as recommended in previous IO Reports.

At these Games, ADAMS was implemented and used for many areas of the doping control program.

Test Planning

The Taskforce (IOC, VANOC and WADA) used ADAMS to plan and conduct out-of-competition testing missions on athletes prior to the start of the Games. Mission Orders were created and sent to ADOs conducting the tests, along with any whereabouts in the ADAMS system related to the athletes to be tested.

VANOC also created Mission Orders for all in-competition testing, thus permitting it to input a lot of key information into the system prior to the testing taking place.

Whereabouts

Athletes competing at the Olympic Games were required to provide whereabouts information to the IOC. Some of these athletes were already in an IF or NADO RTP and thus had already provided their whereabouts via ADAMS. The IOC could therefore easily access this information for test planning purposes. Those athletes not in an IF or NADO RTP were required to provide their whereabouts directly to the IOC. One of the ways they could do this was through ADAMS.

Doping Control Forms

VANOC implemented a process whereby Doping Control Staff would enter the data from the doping control forms into ADAMS before leaving the Doping Control Station at the end of a testing session. This allowed for immediate access to the test data by the IOC, VANOC and the IO Team.

For quality control purposes, the VANOC Doping Control Command Centre, upon receipt of the actual doping control forms, would verify every morning the information entered into ADAMS to ensure it was accurate. In addition, any issues identified (paperwork mistakes, athlete comments, supplementary reports, etc) were tracked and corrective action taken (if necessary). This included daily follow-up with all Station Managers.

Laboratory Results

The INRS laboratory is one of the WADA-accredited laboratories who fully incorporated ADAMS in their daily operations. Therefore using ADAMS during the Olympic Winter Games was a relatively easy process for it. Again, ADAMS allowed the IOC to instantly match analytical results with their corresponding doping control forms and begin any necessary follow up. In the past, the matching of forms and their corresponding results had to be physically done by the IOC, resulting in a time consuming and difficult administrative task.

It should be noted that the IOC continued to require the laboratory to fax the analytical reports to it, even though the reports were immediately inputted into ADAMS. The IO Team questions the need for the fax reports as it is simply duplication of reporting and effort.

Recommended Area/s of Improvement:

1. The laboratory should be required to report analytical reports into ADAMS only, and should not be required to prepare and send fax copies, as has been the traditional method for many years.

Statistical Reports

With all of the information in ADAMS, it was easy for the IOC, VANOC and the IO Team to generate relevant statistical reports to meet their individual requirements.

Therapeutic Use Exemptions

The IOC used ADAMS to help manage the TUE process for the Games. Initially this process offered some challenges to the IOC when the long list of athletes was used (thus resulting in all winter sport athletes with TUEs being identified). However once the short list of those athletes actually attending the Games was used, the process was easy and efficient.

Results Management

The IOC managed the files for all AAFs and ADRVs in ADAMS. This therefore provided the IOC with the ability to share this information in an easy and timely manner with the relevant ADOs, including the athlete's IF, as well as the IO Team and WADA.

When using ADAMS, all of the information related to an athlete or a specific test is instantly accessible to the relevant ADOs and can be managed easily. The review of daily reports, in any format desired, makes it easy to monitor the testing program and follow up on any relevant issues. Based on a review of all of the information available, the IO Team was able to confirm that the number of samples collected, number of samples analyzed and the number of samples reported in ADAMS all matched. In addition, it would have been easy to identify any missing laboratory results in order to conduct the appropriate follow up. This is compared to Beijing when it was reported by the IO Team that 300 results appeared to be missing and this was only rectified a few months after the Games had finished.

From an IO perspective, the use of ADAMS significantly decreases the administrative work required from an ADO, especially during a major games. When the IO Team compares the administrative workload required in Vancouver with the workload from the 2008 Summer Olympic Games in Beijing (where it did not use ADAMS), it is clear that ADAMS is beneficial to all ADOs. Resources that were once dedicated to administrative purposes are now able to be reallocated to more important areas such as planning target tests, analyzing results and trends, etc., thus resulting in a more effective anti-doping program.

The IOC was unfortunately not able to meet with the IO Team in Vancouver to review its internal record management tools and processes. An explanation of its

processes was received in writing on 16 March 2010. Whilst based on this communication it appears the IOC had a process for the review of documentation; review of laboratory reports; and a plan for the long term storage of the documentation/information, the IO Team cannot verify that the IOC generated timely, useful and necessary reports to monitor laboratory results and that all samples collected were in fact reported by the laboratory into ADAMS. On one occasion during the period of the Games, after generating a report itself from ADAMS, the IO Team found a handful of results from several days prior that had not been included in the system. The IO Team advised the IOC and the laboratory and the laboratory reported that a technical error had occurred in the uploading of information. This situation illustrates that cross-checking of all information is necessary to ensure everything has been reported.

Lastly, it is to be noted that the IOC recognized the advantages to using ADAMS but at the same time also identified some issues related to the system that can be improved for future Games.

Recommended Area/s of Improvement:

1. The IOC should provide WADA with detailed feedback, both positive and negative, related to its use of ADAMS. Since this is the first time that ADAMS was used at an Olympic Games it is expected that there will be areas of improvement. This can only be undertaken if a complete review and evaluation is done by the IOC and WADA.

ATHLETE PERSPECTIVE

VANOC reviewed and compiled on a daily basis all comments provided by athletes on the doping control forms and supplementary report forms. A summary of the comments from the first week and a half was provided to the IO Team during the Games. Overall, the majority of this feedback was positive in regards to the doping control process.

While athletes are given the opportunity to provide comments on the doping control process on the doping control form or a supplementary form, they often choose not to do so. Therefore, for the first time, the athlete representative on the IO Team elected to speak directly to the athletes to obtain feedback on the doping control program. This was done by visiting the Athlete Villages in Whistler and Vancouver and listening to what the athletes had to say.

The IO Team representative first approached the NOC officials to request permission to talk to their athletes. Many athletes, as well as their physicians, were open and honest regarding their experiences with the doping control process in Vancouver. Many athletes and NOCs were very grateful that they were being asked for their opinion. The IO Team appreciates and thanks them for their cooperation.

Athletes are the heart and the soul of any event, including the Olympic Winter Games. While planning an extensive doping control program, ADOs should always consider the athletes perspective. For most athletes the participation in an Olympic Games is a once-in-a-lifetime experience; winning a medal is even more so. It creates an array of emotions that the athlete wants to, and should be able to, enjoy to its full extent. Therefore the doping control process should try to find a balance between the obligations of an athlete to doping control and the experience and emotion of the athletes.

Most athletes are willing to adhere to anti-doping rules and doping control procedures. Athletes do not mind, and sometimes hope, that they will be selected for testing.

Some of the interesting feedback received directly from the athletes and/or their entourage included:

- For most athletes the Olympic Games is the only possibility to be in the media spotlight. It is their only chance to become known. The athletes do not want to miss this opportunity due to the obligations to report immediately to doping control.
- To win or to lose a competition creates unique emotions that an athlete wants to share with the people they know. Give them a chance to do so.
- Doping control officials should be aware of the specifics of the sport and identify the right moment to notify the athletes.
- The notification process takes place directly after the race. Chaperones read the athletes rights and responsibilities to the athletes at a time when they may not be listening as they are often searching for their coach and friends to talk or celebrate. The athlete may sign anything that is given to them, without fully being aware of what they are signing.

- As mentioned in the Doping Control Process section there were often times when too many volunteers were waiting in the Doping Control Station. Several athletes reported that they felt intimidated by the large number of people, often looking directly at them.
- At the end of a competition there are many different people waiting for the athlete (Media, Ceremonies, Coaches, etc). At times, this was well coordinated while at other times there were arguments and the coordination was poor. This was evident to the athletes and they sometimes felt pressure from the various groups and did not know who to follow.
- Some athletes were unhappy that their rights and responsibilities and the doping control process were explained to them several times despite the fact that they would inform the doping control staff that they understood them.
- Once the doping control process is completed, the athlete wants to leave the Doping Control Station. The athletes felt that the repeated checking and re-checking of the forms unnecessarily lengthened the process.
- Most athletes were very satisfied with the doping control procedure itself. The samples were usually handled correctly and the process was explained clearly. One of the main criticisms of the doping control process however, was the length of time it took to complete it (as outlined previously).

Recommended Area/s of Improvement:

1. For all future IO missions, the IO Team should plan to obtain feedback on the doping control process from the athletes. While the IO Team only did this once during the Olympic Winter Games in Vancouver, it may be useful to obtain this feedback a few times throughout the Games; for example at the beginning of the event, in the middle and near the end.

SUMMARY OF KEY RECOMMENDED AREAS OF IMPROVEMENT

Scope of the IO Program

1. The IO Team recommends that the audit style IO Program be used for all future IO missions, from smaller events to large events like the Olympic Games. The daily communication and feedback between the IO Team and the event organizer allows for continuous improvement of the doping control program throughout the event.

Doping Control Program

2. To ensure a proper legacy for future event organizers, the IOC should consider engaging doping control staff from previous Olympic Games to develop a Model of Best Practice for Olympic Games Doping Control Programs which would outline all of the details one must consider when implementing a doping control program at a major games.

Test Distribution Planning

3. The IOC should develop a process whereby it reviews all relevant information provided by the laboratory, IFs, etc and conducts intelligent target tests on athletes at the Games.
4. The IOC's Medical Commission includes some of the foremost medical and laboratory experts in the world. These experts should be used to review all information provided by the laboratory, IFs, etc in order to recommend effective target testing.
5. The IO Team recommends that for sports which have a high risk of EPO use, all samples collected, both in-competition and out-of-competition should be analyzed for EPO.
6. For the out-of-competition Games testing, 100% of the EPO analysis was allocated to the high risk sports as identified by the IOC. The IOC should consider increasing the total number of EPO analysis conducted, including allocating some EPO analysis to the medium risk sports it identified. There are some sports which the Taskforce identified as medium risk which would have also benefited from out-of-competition Games EPO analysis (these sports did have EPO analysis conducted during post competition testing).

Athlete Whereabouts Information

7. The IO suggests that, for future Games, whereabouts information requirements as specified in the IST should suffice and the IOC need not to require additional information from the athletes. The IOC rule could be appropriately amended.
8. For those athletes who are not already included in a NADO or International Federation RTP, the IOC should consider not requiring whereabouts information from them while they are living and training within the bubble of the Olympic venues.

9. Implementation of a 'whereabouts' education program for all NOCs should be considered to ensure they understand their obligations related to the IST and the Games and the potential consequences of not fulfilling these obligations.
10. The IOC should consider implementing a process whereby it can confirm that the NOCs have followed up with their respective athletes and informed them on all information related to the Olympic Games, including the whereabouts requirements.
11. The IOC should continue to follow up with those NOCs who do not fulfill their obligations related to the provision of whereabouts information.

In-Competition Testing

12. Increase the number of EPO analysis in some of the high risk sports identified by the IOC. While all urine samples collected in sports such as Cross Country Skiing and Nordic Combined were analyzed for EPO, in other sports such as Biathlon and Long Track Speed Skating, only half of the urine samples were analyzed for EPO. In sports such as these it may be advisable to increase the number of EPO analysis.
13. The IO Team suggests that the IOC consider reallocating some tests that were conducted in low risk sports (as identified by the IOC) such as Curling to other higher risk sports. Conducting tests during every round of a Curling event may not be necessary; some of these tests may be better used as target tests for other higher risk sports.

International Federation Protocols

14. The IO Team recommends that the selection criteria for each sport and event be varied and thus less predictable to everyone involved. Whilst accepting that the general test numbers can be agreed with the IF, the ability to vary the selection criteria across the competition would ensure that the testing of athletes beyond the top five plus three random is less predictable. The reason for testing the top five placed athletes is recognized (i.e. to allow an athlete who has been stripped of a medal to be replaced by an athlete who has been tested).
15. Overall the IO Team questions the need for these Doping Control Protocols. It is recommended that the IOC take full responsibility and determine the selection criteria and notification procedures for the Olympic Games. This would eliminate the inconsistencies and inadequacies in the procedures of some of the IFs. A uniform approach would need to acknowledge the sensitivities of a particular sport whilst seeking to deliver the best possible anti-doping program.
16. The IO Team recommends that, in addition to the comments above concerning the IOC for an Olympic Games, the IFs also review their anti-doping rules and procedures and revise them to provide that random athlete selection and notification are by name or by start/bib number and to otherwise ensure that processes are as effective as possible.

17. The IO Team recommends that for sports such as two or four man Bobsleigh, Pairs Figure Skating or Long Track Speed Skating Relay, all members of the team, in particular during medal rounds, should be tested. This principle, where possible, should also be applied to all team sports. The IO Team does however recognize the practical difficulties in testing all members of a team in some sports (i.e. in Ice Hockey this would mean conducting up to 40 tests per match).

Venue Logistics

18. The IOC and Local Organizing Committee should ensure that the doping control personnel have the necessary accreditation and identification to fulfill their responsibilities. Whatever is provided to the doping control officials should ensure their access to all necessary areas for notification and chaperoning of an athlete. This includes the field of play and the mixed zone.
19. More education and coordination should be conducted with those personnel involved in the field of play and the "Host Broadcaster" at all venues. These personnel should be made aware of the roles and responsibilities of the doping control officials (including the IO Team) and understand the reason they require access to these restricted areas.
20. Future Games Local Organizing Committees should follow VANOC's process in recruiting, selecting and training their Station Managers. Wherever possible Station Managers should be appointed, at a minimum, two years in advance of an Olympic Games. Their attendance at a number of World Championships and/or test events would ensure that the individuals within this role obtain full orientation of the sport and are experienced enough to manage the doping control process at an event such as the Olympic Games.

Selection and Notification

21. Where possible, athlete accreditations could be handed in prior to their competition and at the end of their event the athletes could be made to proceed through to an area where their accreditation can be collected after they exit the mixed zone. This way, the accreditations for any of the athletes selected for doping control can be held, and the appropriate notification and chaperoning (or shadowing – see below) can take place immediately.
22. While finishing position is required as a selection method to ensure that the top competitors are tested, random selection should be drawn by athlete name or start/bib number (see IF Protocol section for more details).
23. If the method of "shadowing" an athlete is used (i.e. following the athlete at a distance without officially notifying them) then a detailed procedure should be developed for the specific event.

Duration of Notification

24. All athletes should be required to sign a declaration, which can be included in the existing athlete entry form, prior to the start of a Major Games that confirms that they have read and understood the anti-doping rules of the Games, including the athlete's rights and responsibilities when notified of

their selection for doping control. Such a course of action would allow the notification aspect of doping control at the end of the competition to be shortened significantly. Upon being notified of doping control athletes would merely need to be asked whether they understood their rights and responsibilities and unless the athlete had any questions, they could proceed to signing the notification immediately. The NOC could be given responsibility for the translation of such a document so as to ensure a thorough understanding by its athletes. A short version referring to such a declaration, also translated into as many languages as is practical, could still be provided by the chaperone for the actual verbal notification. *The IO Team recognizes that signing a declaration in advance of the Games may have an impact on the International Standard for Testing and encourages WADA to evaluate this.*

Doping Control Officers / Blood Collection Officers

25. The IOC should work with future Games organizers to ensure there is a strong National Anti-Doping Organization in place in the host country of the Games. The experience and quality of the work from an established NADO will assist the IOC and Local Organizing Committee in implementing an effective anti-doping program.
26. The IOC should encourage future Games organizers to invite experienced DCOs from other Anti-Doping Organizations around the world. These International DCOs are very beneficial to the Games doping control program.

Registration and Waiting at the Doping Control Station

27. The sign in/sign out process could be made more efficient if the Doping Control Station was equipped to scan electronically the athletes' accreditation when they enter and exit the Doping Control Station (instead of physically signing the log sheet). Such scanning system was observed at some venues for wider security and access control provisions. A similar system could be considered for doping control.
28. To improve the overcrowding of waiting rooms, chaperones and other doping control staff not being utilized should be asked to wait outside until they are needed. Those left to monitor the waiting room should be educated to keep a watchful eye on the athletes, but at an appropriate distance.

Urine Sample Collection

29. If an athlete informs the DCO that he or she is aware and understands his or her rights and responsibilities, including the consequences of a failure to comply, the DCO should be given the discretion on whether they need to be repeated.
30. Chaperones should ensure that the athlete is aware that a refusal to submit to doping control may result in an anti-doping rule violation. DCOs should only repeat this information in instances where it appears the athlete may refuse to submit to doping control.
31. The IOC, with the support of WADA, should consider the development of electronic doping control forms that are linked with the Games accreditation

systems. Through the scanning of bar codes on the athletes accreditation, the sample collection equipment etc., the process would be expedited and mistakes on the form would be minimized.

If an electronic system is not put in place, recommendations 32-34 below should be considered.

32. The DCOs should be given guidance on which errors on a doping control form require a new form to be written and which errors can be crossed out and initialed by the DCO and athlete.
33. The IO Team recommends that all persons present in the processing room be recorded. This includes those persons (i.e. translator; IO member) who are not provided for on the doping control form. In these cases a supplementary report form could be completed to indicate those additional persons in the processing room.
34. In order to speed up the doping control process, the IO Team recommends that the DCOs processing the samples be given the authority and responsibility to sign off on the forms and complete the process without the final verification from the Station Manager.
35. As a standard procedure for future Games, if an athlete provides two samples that are not suitable for analysis (i.e. dilute) the DCO should continue to collect additional samples until a suitable sample is provided. Only in real exceptional circumstances (not "the logistical nature of the Games") should an athlete be permitted to provide only two samples. In these cases a follow up target test on the athlete is strongly recommended.
36. The section on the doping control form related to anti-doping research should be made clearer, including clear advice that samples used for research are made anonymous.

Blood Sample Collection

37. The blood collection procedures, including those related to the tourniquet should follow the IST and be consistent for all blood samples collected.
38. The IO Team recommends that athletes who cannot provide a urine sample and who ask to provide their blood sample first be permitted to do so as long as all procedures and protocols are followed, including the requirement to wait and rest for 10 minutes. Other athletes who are also waiting however, should be considered so as not to delay their wait any further.

Therapeutic Use Exemptions

39. The IOC Anti-Doping Rules require that existing TUEs be sent to the IOC no later than the date of the opening of the Olympic Village. The Chair of the IOC TUEC confirmed that this was not always followed. The IO Team recommends that all existing TUEs be entered into ADAMS before the period of the Games and at least 30 days before the event (in accordance with the ISTUE). This requirement will assist the IOC TUEC in assessing TUEs in advance of the

Games and will avoid the IOC having to request a review by WADA during the period of the Games (when the athlete is already competing).

40. The IO Team observed several TUE approvals from one IF for a single use of a substance that were given a duration of one year. The IO Team recommends that this be monitored more closely and that the ADOs, including IFs and NADOs are educated on the proper process for TUEs.
41. The IO Team recommends that the athlete is directly involved in all communication related to their TUE, including any requests for further information or pending reviews.

Results Management

42. Recognizing the expedited nature of Disciplinary Commission proceedings, the IOC should review its internal processes to make sure that all necessary witnesses and facts are before the Disciplinary Commission at the time it renders its decision. In addition, the IOC could consider use of the style of disciplinary proceedings where some member of the IOC's team is responsible for prosecuting the case, including gathering and presenting all of the relevant evidence and testing the athlete's evidence. The Disciplinary Commission, which obviously can still ask questions, would play more of a judicial decision maker role.
43. In particular, in each case before the Disciplinary Commission, the laboratory director should be consulted to assist in identifying all scientific facts relevant to the case.

Laboratory Services

44. For future Olympic Games, the laboratory should continue to participate in all available (urine and blood) EQAS programs. This can increase confidence in the preparations of the laboratory, especially in the case of temporary (or satellite) facilities.
45. The blood and urine samples collected from the same athlete should be linked on the doping control form.
46. The *WADA Blood Collection Guidelines* states that "blood samples shall be transported to the laboratory in a refrigerated state", therefore consideration to using temperature monitors for all blood transport containers as best practice ought to be given in the transportation of all blood samples.
47. Future Games laboratories should use ADAMS to report all analytical findings. The ease of reporting and the immediate access to information by Anti-Doping Organizations are major benefits of the system.
48. The IOC should use the additional information and comments that the Laboratory provides on its analytical reports more effectively. *Refer to recommendation also provided under Section: Out-of-Competition Testing (Doping Control Planning)*. It may be worthwhile for the IOC and Laboratory to meet before the Games and discuss the type of information that will be provided and how this information should be utilized.

49. Accredited laboratories should consider developing and implementing electronic based technology for all aspects of the laboratory work. This is particularly beneficial to major events such as the Olympic Games given the number of samples collected and timelines for the reporting of results.

Records Management

50. The laboratory should be required to report analytical reports into ADAMS only, and should not be required to prepare and send fax copies, as has been the traditional method for many years.
51. The IOC should provide WADA with detailed feedback, both positive and negative, related to its use of ADAMS. Since this is the first time that ADAMS was used at an Olympic Games it is expected that there will be areas of improvement. This can only be undertaken if a complete review and evaluation is done by the IOC and WADA.

Athlete Perspective

52. For all future IO missions, the IO Team should plan to obtain feedback on the doping control process from the athletes. While the IO Team only did this once during the Olympic Winter Games in Vancouver, it may be useful to obtain this feedback a few times throughout the Games; for example at the beginning of the event, in the middle and near the end.

Appendix 1

Summary of Observations Conducted

<i>Sport / Day</i>	February 2010																	Total
	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Alpine Ski				1		1	1	1	1			1	1		1	1		9
Biathlon		1	1		1		1			1		1			1			7
Bobsleigh									1				1			1		3
Curling					1	1	1			1				1	1	1		7
Cross Country						1		1	1		1		1	1				6
Freestyle Ski		1	1						1	1	1	1	1	1				8
Figure Skating			1	1	1		1				1			1				6
Hockey		1	1	1	2	1	2	1	1		1	1		2	1		1	16
Luge		1	1	1	1	1												5
Laboratory	1		1	1	1	1		1		1	1	1	1	1	1	1		13
Nordic Combined			1	1								1		1				4
Skeleton								1										1
Ski Jump	1	1						1	1		1							5
Snowboard				1	1	1	1								1	1		6
Speed Skating Long Track		1	1	1	1	1	1		1			1	1			1		10
Speed Skating Short Track		1				1			1				1		1			5
TOTAL	2	7	8	8	9	9	8	6	8	4	6	7	7	8	7	6	1	111

** Observations also included the VANOC Doping Control Command Centre, Whistler Athlete Village Doping Control Station, Vancouver Athlete Village Doping Control Station, Disciplinary Hearing and the Therapeutic Use Exemptions.

Appendix 2

Members of Independent Observer Team

	Name	Title	Nationality
1	Mr Scott BURNS <i>Chair</i>	Executive Director, National District Attorneys Association <i>and</i> Former WADA Executive Committee and Foundation Board Member	USA
2	Mr Rune ANDERSEN <i>Vice Chair</i>	Director, Standards and Harmonization WADA	Norway
3	Mr Richard YOUNG <i>Vice Chair</i>	Lawyer Holmes, Roberts & Owen	USA
4	Mr Mahmoud ALI	Doping Control Department Manager Olympic Council of Asia	Kuwait
5	Mr Thierry BOGHOSIAN	Manager, Laboratory Accreditation WADA	USA/Canada
6	Ms Meike EVERS	Olympic Rower Member WADA Athlete Committee	Germany
7	Mr Rob KOEHLER	Director, Education and Program Development WADA	Canada
8	Mr Tom MAY <i>Team Manager</i>	Senior Manager, Program Development WADA	Canada
9	Ms Nicole SAPSTEAD	Director of Operations UK Anti-Doping	UK
10	Dr Anik SAX	Medical Doctor and Head Physician Ministry of Sports	Luxembourg