



Report of the **Independent Observers**

Games of the XXX Olympiad, London 2012



**WORLD
ANTI-DOPING
AGENCY**

Executive Summary

The anti-doping program of the XXX Olympic Games of London successfully implemented measures to protect the rights of clean athletes. The success of the program was predicated upon sound and detailed planning that resulted in a well prepared workforce who carried out their tasks professionally and competently. While no program can achieve perfection, the London team recognized areas for improvement and acknowledged constructive suggestions and adjusted their plans and operations on an ongoing basis to support continuous improvement.

The IOC's focus on the value that 'intelligence' brings to the effectiveness of the Olympic doping control program is to be commended. By developing a collaborative approach with both LOCOG and UKAD, the IOC has implemented a strong program that builds on recent editions of the Games and constitutes a model for future Olympic Games. The IO Team can only encourage the IOC to continue this evolution by enhancing collaboration further with relevant partners and continuing to stay at the fore of anti-doping programming with respect to advances such as the Athlete Biological Passport, the use of ADAMS to share and collaborate with the global anti-doping community, and focussed intelligent testing strategies.

Overall, the anti-doping program conducted in London was a fully compliant one and was carried out according to the applicable anti-doping rules and protocols. The Independent Observer comments forthwith relate largely to elements of better practice and recommendations for future games. A total of eight positive cases were recorded for the London Olympic Games; two a result of in-competition testing and six emanating from pre-competition controls.

1.0 Part One: Background

The following report contains the general findings of the Independent Observer (IO) Mission at the London Olympic Games. This document publically summarizes and highlights the strengths and areas for improvement of the London anti-doping program which were shared with the International Olympic Committee (IOC) and the London Organizing Committee (LOCOG) during the course of the Games. A more detailed technical report has also been provided to the IOC to disseminate at their discretion which includes written daily reports of all observations.

1.1 Mandate of the Independent Observer Program

Foremost amongst the IO program's goals, is to provide participating athletes with a measure of confidence that the anti-doping program is of a high standard and that appropriate measures are in place to see that the program is transparent, abides with the rules of the World Anti-Doping Code, and does all that it can to protect the rights of clean athletes to participate in pure competition.

The Independent Observer Program has been present at all Olympic Games since the Sydney Games of 2000. The task of the IO program is to observe and report on all aspects of the doping control program that is deployed during the Games. In addition to strengthening athlete confidence in the Olympic doping control program by providing oversight during the event, it is also the aim of the IO to report findings that will improve future anti-doping programs both at the Olympic Games and to provide recommendations that other Major Sporting Event Organizers can benefit from.

The IOC and the World Anti-Doping Agency (WADA) signed an agreement outlining the framework for the Independent Observer Program for the 2012 Olympic Summer Games in

London. The observation period commenced on the date of the Opening Ceremony of the Games (27 July 2012) and was formally completed on the day of the Closing Ceremony (12 August 2012). Over the course of this period, the IO met with the IOC, LOCOG and UKAD (United Kingdom Anti-Doping) to report on its observations and provide recommendations for improvement on a daily basis. The inclusion of UKAD was as a result of their being contracted by the IOC with regards to their pre-Games testing program. Written daily reports were also provided by the IO team with the intention of supporting continued program enhancement during the Games.

1.2 *Scope of IO Report*

The IOC provided the IO with full access to every relevant aspect of doping control operations during the Games. Limited only by the number of doping control sessions and meetings that the nine member team could observe and attend over the course of the Games, this report includes comments and recommendations on eight specific elements of the program. These include *Test Distribution Planning, Selection of Competitors, Notification of Doping Control, Therapeutic Use Exemption Procedure, Sample Collection Procedures, Transport and Chain of Custody of Samples, Sample Analysis at the Laboratory, and Results Management Process including all Hearings*. In addition to these eight procedural aspects of anti-doping, this report also includes observations and recommendations related to the collection, sharing and processing of both athlete whereabouts information as well as intelligence gathered on specific athletes. Finally, the report highlights six general findings and recommendations deemed to be the key areas and challenges that warrant enhanced attention in the future.

Whilst this report does contain observations and comments regarding 'pre-competition' testing that took place between 27 July and 12 August, the team was not in a position to observe testing that occurred outside of official Olympic venues including outside of Great Britain. Furthermore, it should be noted that one fifth of all tests were conducted under the IOC's authority between the opening of the Athlete's Village (16 July) and prior to the beginning of the IO's remit. All comments and observations are predicated on the established benchmarks of the relevant International Standards as well as the IOC Anti-Doping Regulations and LOCOG doping control procedures.

2.0 Part Two: Program Review

2.1 *Overview*

The doping control program authorized by the IOC and executed by LOCOG and UKAD was of a high quality. For the 2012 London Olympic Games, the IOC implemented the most extensive testing program ever seen at an Olympic Games with a record number of tests carried out. The Test Distribution Plan (TDP) included a total of 5064 tests (4118 urine samples and 946 blood samples). Additionally, 430 samples were to be collected in conjunction with those International Federations operating an Athlete Biological Passport (ABP) Program. By the end of the Games, the IOC had conducted 5132 tests across 132 nationalities, having tested more than 30% of all participating athletes at the London Games. The program was conducted in compliance with the IOC Anti-Doping Rules which were deemed to be fully compliant with the World Anti-Doping Code prior to the Games.

2.2 *Key Observations*

2.2.1 *Test Distribution Planning (TDP)*

Generally speaking, choice of sample types (blood and urine) as well as types of 'specialized' analysis (hGH, EPO, etc) were distributed appropriately across all sports and disciplines based on the particular doping risk of each sport and the number of participating athletes. Upon review of the overall TDP, a reasonable amount of pre-competition testing was also allocated. The IO Team also witnessed that the IOC maintained certain flexibility in its plans and demonstrated a willingness to adjust test plans as new intelligence became available.

With respect to the targeted pre competition testing, the process used to identify those athletes at highest risk for doping and/or those athletes who may have been subject to less robust anti-doping programs prior to their arrival in London was comprehensive. The IOC, LOCOG and UKAD should be commended for reviewing all available information and intelligence in order to identify those athletes that the pre competition program should focus on. Such planning in future should also ensure that where feasible at the laboratory, specialized analysis such as EPO and IRMS is maximized.

In developing the TDP for the next Olympics Games, the IOC may also wish to consider that intelligent testing goes well beyond only pre competition testing. It may be useful to consider limiting future increases to overall test numbers in favor of more intelligent testing as far in advance of competition as possible. Moving forward, the IOC should continue to collaborate with IFs and National Anti-Doping Organizations (NADOs) in this respect to gain insight into suspect or concerning athlete behavior. Finally, given the IOC's positive initiative to incorporate a more intelligent approach to targeted testing it may be worth considering fewer random post-competition tests in favour of more targeted testing after events.

2.2.2 *Selection of Competitors (Post-Competition)*

Selection of athletes for post-competition testing at the Olympic Games was determined by the doping control protocols negotiated in advance by each IF with the IOC and LOCOG. Included and established in these protocols were the planned number of tests to be conducted, the test distribution throughout the entire competition, as well as the selection procedures for which athlete to test, including the draw process to determine any random athlete(s) to be tested in some sports.

These documented protocols were clearly written and all doping control station management were familiar with the documents and how they should be implemented. While not identical, the approaches agreed to by the IOC/LOCOG and each IF was generally consistent. On two occasions however it was observed that there was disagreement on procedural matters between LOCOG staff and on site IF representatives despite the protocols having been established and agreed to. All such disagreements observed were appropriately brought to the IOC Medical and Anti-Doping Director's attention and were resolved promptly. The IOC might consider including in the protocols certain clarity on whether the LOCOG or the IF has final say in such matters, and that all those involved are made aware of such arrangements.

Going forward the IO Team suggests utilising start lists rather than results lists for any random selections. Standardizing this aspect of athlete selections could improve the ease with which chaperones are able to locate and notify athletes when competition results are unclear or are yet to be finalized. Such an approach may also include the selection of alternates in the event the athlete selected from the start list also happens to medal and thus be selected under other criteria.

Finally, it is suggested that the IOC considers adopting a harmonized approach to testing Olympic and World Records. Currently, the IOC defers to the governing IF rules on this matter which the IO observed resulted in a number of unanticipated tests at sport venues. Greater harmonization across sports would ensure certainty and likely avoid those unanticipated tests.

2.2.3 Notification of Doping Control

Athlete notification at all venues was generally conducted very well with chaperones providing athletes the necessary information about their rights and responsibilities without going into unnecessary detail. Chaperones showed a strong sense of commitment and professionalism in conducting their duties. They were equipped with discrete communication tools (radios) that facilitated at all times communication with the doping control station and its' manager.

Indeed, it was clear at all venues that chaperones had been instructed not to interfere with post-event proceedings as much as possible and to discretely notify athletes of their selection for doping control only following immediate athlete commitments such as media and to do so outside the view of spectators and media. Whilst the respect for athletes in this process was commendable and doping control did not unduly interfere with other matters, the importance of prompt notifications is to be highlighted.

Another new initiative at these Games was the introduction of the Athlete Biological Passport program whereby blood tests were taken and results were reviewed by the appointed experts of each relevant sport federation. In this way, the results from blood tests authorized by the IOC both pre and post-competition could be reviewed within a broader context of the athlete's existing blood profile that the IF maintained, and be used for potential target testing. The process by which athletes were notified of their selection for such tests can be improved however. Given that the IOC deferred to the relevant IFs the responsibility to notify athletes of these tests, athletes were obliged to report for testing at a particular time and place. It was observed that in some instances athletes failed to 'report' to doping control at the assigned time. As no written procedure was available for doping control staff in these situations, no consequences for failing to appear seemed to be enforced by the IOC or relevant IF.

To this end, the IO recommends that advance notice ABP testing only be carried out in very specific situations and upon the request of the IF's passport expert. Conducting tests with advance notice opens the door to possible manipulation of the sample provided, and is not consistent with the International Standard for Testing (IST).

Finally, as these ABP samples were treated as a distinct test from the overall TDP, there were instances when an athlete may have been tested twice; once for the traditional blood and urine doping control, and another for the ABP (*to confirm number from ADAMS here*). While in some cases two separate tests may well be warranted, it might be more practical to combine the ABP with the traditional test, provided the ABP was not conducted with advance notice.

2.2.4 Therapeutic Use Exemption Procedure (TUE)

As part of its Anti-Doping Rules for the Games of London 2012, the IOC required that athletes with a documented medical condition requiring the use of a Prohibited Substance or a Prohibited Method must first have obtained a TUE. The IOC Medical Commission appointed a committee (TUEC) of three physicians during the Games with experience in the care and treatment of Athletes and with a sound knowledge of clinical, sports and exercise medicine to assess existing TUEs that athletes already had, and to consider new requests.

Correspondence from the IOC indicates that they informed all National Olympic Committees (NOCs) on several occasions of their responsibility regarding this requirement including well before the Games themselves. Information was communicated at a meeting of Chef de Missions held in London in August 2011, via correspondence to NOCs in early 2012, and again at a meeting of NOC team physicians held on 27 July 2012 at the Athlete Village itself.

Despite this, it would appear that many athletes either did not advise the IOC or their NOC of their TUE given the low volume of submissions and highlighted by one laboratory finding where it was found that an athlete in fact had a legitimate TUE negating the finding although the IOC had not been advised earlier. Given that the IOC and the TUEC in particular can only accept and review those TUEs that come to their attention, it seems some improvement is still required in order to fully administrate a clear and exhaustive TUE process.

2.2.5 Sample Collection Procedures

Coherence and consistency in sampling between stations and venues at the Olympic Games is of paramount importance in order to foster athlete confidence in the system. Overall, the sampling procedures were very well implemented at these Games. The consistent and thorough planning, training and management of all personnel involved would appear to have contributed to this success. Doping Control Station Managers in particular were knowledgeable with respect to anti-doping procedures and the sports at hand which proved equally important in ensuring appropriate logistical arrangements around the various nuances of many sport competitions.

Another successful aspect of the LOCOG doping control program was the recruitment and deployment of Doping Control Officers from more than 50 countries. In addition to the skills and experience these DCOs brought to the program, they also added value with language skills that may not otherwise have been available and these DCOs were sensibly scheduled at venues where their language skills were more likely to be utilised. As has been the case in other past editions of the Games, in the event there was a communication issue with an Athlete in doping control, interpreters were made available in most cases at the venue. When they were not available however, interpretation services were also available by telephone with each processing room equipped with a speaker phone and numbers for direct numbers to many languages available. IO Team observations suggested this was a successful tool to enhance doping control service.

One specific aspect of IOC and LOCOG process that warrants consideration regards the procedure for collecting additional samples once it has been determined that the first sample does not meet the requirement for suitable specific gravity for analysis. Annex G.10 of the IOC Anti-Doping Rules suggests that 'given the logistical nature of the Games,' the IOC limits collection of additional samples to just one additional sample. It is the opinion of the IO, that this provides a legitimate opportunity for athletes to affect the suitability of their sample for analysis by over-hydrating. Although the IO Team understands some discretion and pragmatism may be required due to logistical issues such as post event transportation etc, it suggests that limiting collection to just two samples should be the exception to the rule and all efforts should be made to collect a valid sample prior to terminating a doping control session. This would aid in mitigating possible manipulation.

2.2.6 Transport and Chain of Custody of Samples

Chain of custody is an important part of the doping control process. The movements of the samples must be tracked and every transfer of custody recorded. During the Olympic Games, the time between leaving the Doping Control Station to arriving at the laboratory

needs to be as brief as possible. Timely receipt of samples provides for expedient reporting of results by the laboratory. To this end, the chain of custody process in London including the transfer of samples to the laboratory appears to have been well thought out and every step planned thoroughly.

Following the collection of all samples at any particular event, doping control venue managers completed all required chain of custody forms after reviewing paperwork for accuracy, and ensuring that all tests had been recorded in ADAMS for immediate reporting to the IOC. Next, courier waybills were affixed to the side of all transport bags and all necessary information was recorded on the Chain of Custody Form. All samples and paperwork were then picked up by a dedicated courier (UPS was the Games Service Provider) and centralized at one logistics depot (the 'Hub') where they were then redirected to the laboratory or doping control command centre as appropriate.

The laboratory requested delivery of samples every four hours or whenever there were 16 samples at the Hub. This request was based on ensuring the laboratory could operate in the most efficient and effective way possible. IO Team observations suggest that this schedule was not strictly adhered to, however at no time was the quality and accuracy of the analysis observed as being affected by deviations to this plan. That said, at times, it did make it challenging for the laboratory to schedule analysis in the most efficient way possible.

Finally, the IO Team was aware of one media report questioning the security of the samples at the Hub. However, based on the information obtained, as well as after visiting the Hub and observing the processes, the IO Team believes that the samples were secure at all times and the integrity of the samples was never compromised.

2.2.7 Sample Analysis at the Laboratory

The Laboratory Anti-Doping testing services were provided by a state-of-the-art satellite laboratory (Anti-Doping Science Centre, GlaxoSmithKline (GSK), located in Harlow, UK, approximately 60 minutes north of central London) accredited to the requirements of the International Standard for Laboratories (ISL) by WADA and the requirements of ISO/IEC 17025 via the United Kingdom Accreditation Service (UKAS). The laboratory was established by the WADA-accredited Laboratory Drug Control Centre King's College London, UK and with the notable support of GlaxoSmithKline Inc. The laboratory was equipped with the most advanced instrumentation available and the necessary complementary equipment, supplies, reagents and standards. The satellite laboratory became fully functional in April 2012 and had successfully participated in multiple rounds of the WADA External Quality Assessment Scheme (EQAS) and WADA double blind EQAS during that time.

The IO Team was given the full cooperation of the staff and access to all laboratory operations and documentation. A member of the IO Team was present across various times of the day and night during the Games to provide a view of the oratory operations at all hours; thus allowing for each facet of the oratory activities to be observed. The oratory procedures began upon receipt of urine and blood samples from the couriers who did not have access to the laboratory's restricted administrative and analytical areas. Once samples arrived, the laboratory staff immediately began the process to verify, register and distribute the samples for the various analyses.

The analytical procedures and resulting data were observed at various times in order to review the laboratory's analysis in various prohibited drug classes. The analysts displayed a high level of experience and competence and the resulting data demonstrated a high level of quality. IRMS testing was conducted to differentiate between the endogenous and exogenous nature of target steroids and the method included multiple target steroid analytes thereby increasing the likelihood that the application of an exogenous steroid would be

detected. Extensive testing was conducted on blood samples including blood variables (haemoglobin, haematocrit and reticulocytes), blood transfusion, HBOCs, recombinant Growth Hormone and the hGH biomarkers test which was introduced for the first time.

All findings were electronically uploaded into ADAMS (Anti-Doping Administration and Management System) on a daily basis so that results from the initial testing and confirmation procedures (of both blood and urine) could be provided to the IOC promptly and to IF passport experts when appropriate. This allowed seamless and simultaneous notification of results to the IOC as well as the IO team for Adverse Analytical Findings (AAF) and negative results.

Whilst deviation from established procedures had no detrimental impact on operations, going forward, the laboratory and doping control officials may wish to meet pre-Games to confirm agreed realistic sample delivery schedule that is clear to all involved so as not to jeopardize laboratory efficiency. Additionally, the laboratory should continue to establish satellite facilities well ahead of the Games and the time frame should take into account the increasing number of samples and tests expected for the Games. The advance planning by all those involved with the satellite laboratory in London clearly had a positive impact on the success of laboratory operations at the Games. This will also allow the maximum number of opportunities to participate in (urine and blood) WADA EQAS and double blind EQAS programs in order to provide confidence in the preparations of a laboratory, particularly in the case of temporary facilities.

Finally, the positive involvement and support of GSK was evident in assisting the laboratory to establish a state of the art facility and this type of relationship should be further explored for future Games.

2.2.8 Results Management Process Including all Hearings

Results management at the Games included the identification of adverse analytical findings (AAF) by the laboratory, the communication of these findings to the Chairman of the IOC Medical Commission, the verification of the validity of possible anti-doping rule violations, the communication to the IOC President of the existence of analytical findings, the establishment of a disciplinary commission, the notification of the possible anti-doping rule violation, the hearings, and the final communication of all decisions. The process would be similar for other types of anti-doping rule violations, although during the London Games the IO Team only observed the results management process for AAFs.

During the IO's time in London, there were eight AAFs in the context of the London 2012 Olympic Games. Five hearings were held as a consequence of these findings. In the remaining three cases the Athlete waived his/her right to a hearing. A representative from the IO Team was present at all hearings and it was evident that the IOC conducted a thorough review of each case. All hearings were managed in such a way that protected the athlete's right to a fair process. The process was efficient and the questioning non-confrontational and appropriate at all times. The Disciplinary Commission Chair took the time to put the athlete at ease throughout the proceedings. Interpretation services were offered and utilized when needed. All procedural facts and evidence were reviewed and taken into account. Medical expertise was available at all hearings. When relevant, a provisional suspension was rendered promptly. Finally, the IOC is to be applauded for its prompt public disclosure of decisions following all hearing and determinations.

3.0 Part Three: Going Forward – General Recommendations for the Future

From the observations highlighted in the previous section, this report has sought to identify the key issues that warrant specific recommendations in order to enhance the effectiveness and efficiency of future Olympic anti-doping programs. The following section therefore identifies five broad recommendations for future improvement based on the London experience.

3.1 Gathering and Sharing of Intelligence for Enhanced Target Testing

As described earlier, the volume of tests conducted at these Games was significant and more tests were conducted in London than in any previous version of the Games. The comprehensiveness of this program is commendable and the IOC should be congratulated on increasing the number of tests conducted. At the London Games, in addition to the significant increase in total tests conducted, it was clear that the IOC has embraced an intelligent testing philosophy. The recognition that testing can be more effective by considering all available information that supports the right test on the right athlete at the right time is a significant advancement in doping control at the Olympic Games.

As the first Olympic Games where the IOC worked directly alongside a local NADO, it should be highlighted that the IOC-LOCOG-UKAD partnership was very successful. Throughout the Games, the IOC, the LOCOG and UKAD communicated regularly to share intelligence with the goal of target testing athletes at highest risk for doping in the most effective manner possible. The IO Team observed that throughout the Games, the IOC was receptive to target test recommendations based on the intelligence received. Whilst such intelligence varied both in its source (NADOs, IFs, NOCs, WADA, etc) and the type of information that was considered (biological profiles, suspicious whereabouts patterns, etc), more efforts have been made than ever to critically examine available information to deploy a more focussed and effective doping control program within the testing window available to the IOC during the Games period; especially with respect to 'pre-competition' testing (i.e. that testing conducted outside of sport venues during periods of training and not associated with Olympic event results).

Such an approach would not have been possible without the skills and commitment of UKAD. UKAD was contracted by the IOC to analyse all available information to feed into a quality testing program. Their methods, attention to detail and professionalism should be commended. Perhaps more importantly, UKAD also equipped the IOC with sources of information and intelligence that would not have otherwise been available to improve the efficacy of the IOC anti-doping program. This included relationships with domestic law enforcement and border services, as well as the provision of dedicated intelligence analysts experienced in anti-doping who could research and provide recommendations to enhance the IOC's efforts to effectuate a meaningful anti-doping program. The role of UKAD in providing athlete-specific intelligence and conducting analysis and research where necessary was an overwhelmingly positive feature of the anti-doping program of the Games. Their involvement improved the unpredictability of pre-competition testing by considering available information to proactively test the highest risk athletes world-wide during the Games period. This strength is underscored by the fact that the majority of all cases in London were from tests conducted pre-competition.

Recognizing that not all host countries have an anti-doping agency with the resources and competencies of UKAD, the IOC should consider ways and means of ensuring an intelligence-led doping control program can continue at future Games. Moving forward, it will also be important for the IOC to consider other sources of information that can improve the intelligence of the testing program in particular. The use of the Passport program and clear

processes to collect medical, location or other relevant information 'on the ground' at any Olympic venue should be established to apply to testing strategies.

Recommendation

The IOC might usefully ensure that a comparable partnership between a National Anti-Doping Organization, the Games Organizing Committee and the IOC is in place at future Olympic Games that can gather, share and process intelligence available from various sources.

3.2 Athlete Whereabouts information

The overall purpose of the provision of whereabouts information is to locate Athletes for testing. In an effort to collect whereabouts information in an effective manner that capitalized upon existing and available information already being provided by athletes, the IOC implemented a two-tier whereabouts program. A first group of Athletes already in their Anti-Doping Organization's Registered Testing Pool (RTP) who had thus already submitted whereabouts to their IF and/or NADO did not have to do so, provided that information was accurate and kept up to date. For the second group of athletes not already submitting regular whereabouts (i.e. non RTP athletes), National Olympic Committees (NOCs) were obliged under IOC anti-doping rules to provide more general athlete whereabouts no later than two weeks prior the start of the Period of the London Olympic Games (16 July).

The IOC should be applauded for implementing rules at these Games that capitalized on the existing global whereabouts system. In so doing, athletes already submitting whereabouts to their IF and/or NADO were not required to unnecessarily double their efforts. That said, for the second group of athletes, it appears that a number of NOCs did not comply with IOC rules and did not provide the whereabouts information as expected, nor was the quality of all whereabouts information sufficiently detailed or harmonized to support optimally timed tests.

It was apparent that while most information was sufficient to locate a number of athletes for targeted testing, in a meaningful number of cases the lack of whereabouts information made it challenging to locate the athletes at the desired time. While a number of NOCs did not provide the requisite information, many did. Those NOCs which did comply with the rules should be praised as many of them went to great lengths to ensure their athlete's whereabouts information was available and regularly updated to support the IOC's testing program. For those NOCs who did not comply however, efforts must be undertaken to determine how the situation can be improved in the future.

Effective testing can be undermined by a lack of accurate whereabouts information. It can prevent authorities from conducting testing at an optimal time for specific analysis. The availability of whereabouts information is key for efficient target testing based on intelligence. This issue underscores the need for NOCs to be made aware of the requirement and the importance of an appropriate follow-up process and/or consequence for failures to comply. It should be highlighted that the challenge of collecting useful whereabouts information and enforcing whereabouts requirements is not unique to these Games. This matter has been raised in previous IO reports and the need to implement pragmatic and enforceable whereabouts requirements that are commensurate with intelligent testing plans is of paramount importance.

Recognizing that the availability of whereabouts information is a complex issue and is a shared responsibility between among others, athletes, NOCs, NADOs, WADA, IFs and Major Games Organizers, and recognizing that there are resource limitations to follow up on whereabouts issues with all participating athletes, it is suggested that the IOC continue to

educate NOCs of the requirements and consider imposing consequences early in the Games period to remedy poor compliance.

Recommendation

The IOC should consider the application of sanctions to ensure that all NOCs provide whereabouts information of their athletes no later than two weeks prior to the start of the Period of Olympic Games.

3.3 *Locating Athletes at Olympic Venues for Pre-Competition Testing*

The IO team observed that on a number of occasions, athletes could not be located in the Village for targeted doping control purposes in an optimal fashion. In the absence of full compliance by athletes and NOCs regarding the submission of individual athlete whereabouts, it is essential to collect information from other Games functions such as Athlete Accommodations and Accreditation Services to secure useful information to support pre-competition testing. Collecting NOC room lists as well as venue training schedules will need to be done more systematically in future to support more targeted testing based on intelligence. Target testing cannot be done effectively anywhere and at anytime without detailed and up to date whereabouts information. The capacity to locate athletes in the Village during a particular time-frame is essential for good target testing. For this to occur, one needs basic information on all athletes and systematic procedures to use this information to locate them.

Recommendation

The IOC should consider the development of a system that ensures the organization(s) tasked with locating athletes for pre-competition testing has access to the following 'supplemental' information in a standardized way regardless of what RTP whereabouts filings may be available: Name of Athlete as it appears on their Accreditation, the Accreditation Numbers, Athlete's Room Number (or accommodation venue if outside of the Athlete Village), training information, the Athlete's Photograph, and Athlete's date and time of arrival to the airport.

3.4 *Transfer of Knowledge for future Olympic Anti-Doping Programs*

The planning and development of a sound and efficient anti-doping program for an Olympic Games is a complex project; from the training of personnel to the development of resources and on-site procedures. As much as possible therefore, it would be beneficial to transfer best practices from one Games to the next. Many elements of these London Games have been tremendously successful such as the quality of doping control stations, staff training programs, International DCO recruitment, the use of UKAD, and oratory operations. In an effort to replicate these successes, ways and means should be considered to ensure a systematic transfer of knowledge.

LOCOG prepared very well for Games operations. LOCOG had benefitted to an extent, from a transfer of expertise from previous Games. They have taken note of what has been done in previous Games, met with previous Games organisers and considered past IO recommendations. They should be commended for having taken the initiative to do so. Also, the IOC made efforts to facilitate the transfer of expertise between Games organizers. Nevertheless, the IO Team is of the view that the detailed anti-doping knowledge developed at the London Games should not be lost. It should be transferred for the benefit of future Olympic Games in a very organized way.

Recommendation

The IOC should consider developing or contributing to a planning document for future anti-doping Games organizers that articulates all essential criteria, timelines and resources that will support a standardized planning and delivery process. Such a harmonized process should underline the steps required to develop and put forward a solid anti-doping program on time for an Olympic Games. It may also be beneficial to include the Director of Anti-Doping for the next version of the Olympic Games as an observer or in some other 'entrenched' role during the preceding Games. In this way future organizers will be able to witness firsthand the practical considerations of program implementation. Additionally, the London model of having a broad base of doping control personnel from around the world with additional language skills and diverse experience is a feature that should be emulated by future organizing committees.

3.5 Therapeutic Use Exemptions

As part of its Anti-Doping Rules applicable to the Games of London 2012, the IOC set out a process to ensure that all athletes were able to obtain a TUE in accordance with an exemption process. At the London Games, the IOC's Therapeutic Use Exemption Committee received a total 31 TUEs for review before the beginning of the London Games. Subsequently, the Committee received a total of 26 further applications during the Games just one of which was rejected, and no appeals filed to WADA for review.

These figures appear quite low which are suggestive that the IOC may not have been in receipt of all applications or TUE files from Athletes and/or their NOCs. The IOC on a number of occasions reminded the NOCs of their responsibility to ensure that athletes accredited for the London 2012 Olympics Games obtained a TUE. In spite of these efforts, the information received from the IOC TUEC suggests a surprisingly low number of files and applications which infers that the education and administrative process could be enhanced significantly through continued NOC education as well as enhanced communication with IFs and NADOs.

Recommendation

The IOC might usefully look at developing a systematic approach, including considering the application of sanctions for non-compliance, to ensure that all NOCs make available the TUEs of their athletes well in advance of the Games.

3.6 Selective Sample Analysis

As summarized in the discussion on the TDP above, the distribution of tests by sport and across pre and post-competition periods was generally done very well collectively by the IOC, LOCOG and UKAD. Selection of 'specialized' analysis was typically established by agreement with IFs for post-event selections, while pre-competition testing examined the relative merits of potential for doping amongst the sports selected and their respective risks. As a part of this approach, more EPO tests would be conducted on endurance sports for example while CERA, hGH, Homologous Blood Transfusion testing and Insulin were similarly distributed by risk.

Recognizing possible laboratory limitations in analyzing all samples for the full spectrum of substances and methods, the IO Team would suggest that as much as possible at future Games, all those athletes tested pre-competition should be subject to the 'full menu' as these are the athletes deemed highest risk for doping and should be subject to all possible analyses.

Also important is the re-analysis of the samples in future years. Consistent with the World Anti-Doping Code, the ownership of the samples collected is vested with the IOC for eight years. The IOC has the authority to re-analyse those samples. It is thus expected that the IOC will re-analyses a number of those samples collected at the London Games at some future stage.

Recommendation

In line with the IOC's adoption of quality intelligent testing, the IOC could consider extending its sport risk evaluation to the individual athlete level and develop specific testing strategies for targeted athletes that include all available substances and methods in the future. The IOC should also consider applying the 'full menu concept' in implementing its re-analysis strategy.

4.0 Part Four: Annexes

4.1 Acknowledgements

The objectives of the IO Program could not be achieved without the support of all those responsible for the planning, management and execution of the Olympic Games anti-doping program. The IO wishes to thank all those responsible for the delivery of the doping control program and to all those who interacted with the IO team as well as all athletes participating in the Games whose accomplishments have been attained through hard work, determination, perseverance and a commitment to clean sport.

The IO Team wishes to acknowledge and thank the IOC for inviting WADA to deliver the IO program at the XXX Olympic Games in London. It wishes to highlight the outstanding cooperation from certain key persons:

- The IOC Medical and Anti-Doping leadership and staff including Prof. Arne Ljungqvist, Dr Patrick Schamasch, Christian Thill and Cherine Fahmy;
- the London Organizing Committee (LOCOG) Doping Control Staff including Doping Control Officers, Chaperones and related administrative and venue staff led by Richard Budgett, Jonathan Harris and Kevin Haynes;
- All LOCOG volunteers that supported the IO team's mission including Elizabeth Birnie in particular;
- the Anti-Doping Science Centre, GSK Harlow led by Prof. David Cowan;
- United Kingdom Anti-Doping (UKAD) and Andy Parkinson, Nicole Sapstead, Hamish Coffey and Gabriella Re in particular.
- WADA's Executive Office and Shannan Withers in particular.

4.2 IO Team Composition and Operations

The IO Team was comprised of nine individuals from diverse sporting and anti-doping backgrounds all with extensive experience in the field. Members included anti-doping administrators from National Anti-Doping Organizations, an International Sport Federation, WADA, as well a former Olympic Athlete and Medical Doctor. Each member had familiarized themselves with all available IOC Anti-Doping rules, regulations and technical documents prior to their arrival in London, and each member was already well versed in the content of the relevant International Standards of the World Anti-Doping Code.

All IO Team members were obliged to sign a code of conduct agreement and a declaration of confidentiality prior to engaging in their activities and becoming privy to sensitive information regarding the IOC's anti-doping program. Subsequently, each team

member performed their duties professionally observing doping control operations discretely and in such a way as to not interfere with the process whatsoever.

All sample collections observed by the IO program were scheduled in such a way that the team could maximize the number of different sports, disciplines and venues where doping control could be observed. In total, the IO Team observed and reported on 84 sample collection sessions at 29 different venues. Additionally, team members attended 20 daily meetings with the IOC, LOCOG and UKAD (collectively referred to as the 'taskforce'), as well as two IOC Medical Commission meetings, five Disciplinary Commissions, and a number of other miscellaneous meetings with relevant organizations and individuals.

Following each doping control session observed, team members would record a written report of their observations which were shared at a daily IO morning meeting so that each team member had the opportunity to share feedback and recommendations to the group at large. Following this meeting, representatives of the IO met daily with those responsible for leading the doping control program to highlight key findings and promptly advise the IOC of any specific recommendations or issues that may warrant their attention in the interest of promoting continuous improvement in the Games program. A more detailed written report of these daily observations was also provided to the IOC and LOCOG each day.

4.3 IO Team Members

Role	Name	Position	Nationality
Chair	Rene Bouchard	Former Deputy representing Canadian Government on WADA Executive Committee and Foundation Board	Canada
Vice Chair	Rune Andersen	Director, Standards and Harmonization, WADA	Norway
Team Manager	Tom May	Senior Manager, Program Development, WADA	Canada
Member	Thierry Boghosian	Manager, Laboratory Accreditation, WADA	United States
Member	Dr Sara Fischer	Olympic Snowboarder and WADA Athlete Committee Member	Sweden
Member	David Fitzpatrick	Sport Director, International Ice Hockey Federation	Canada
Member	Christina Friis Johansen	Program Manager, Anti-Doping Denmark	Denmark
Member	Fahmy Galant	Doping Control Manager, South African Institute for Drug Free Sport	South Africa
Member	Stuart Kemp	Senior Manager, Standards and Harmonization, WADA	Canada