



Report of the
**Independent
Observers**

Rio de Janeiro 2016 Paralympic Games

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1. Acronyms & Abbreviations

AAF	Adverse Analytical Finding
ABP	Athlete Biological Passport
ADAMS	Anti-Doping Administration and Management System
ADRV	Anti-Doping Rule Violation
APMU	Athlete Passport Management Unit
ATF	Atypical Finding
CAS	Court of Arbitration for Sport
COC	Chain of Custody
DCF	Doping Control Form
DCS	Doping Control Station
ESAs	Erythropoiesis Stimulating Agents
GH	Growth Hormone
GHRFs	Growth Hormone Releasing Factors
IC	In-competition
IF	International Federation
IGF-1	Insulin-like Growth Factor 1
IO	Independent Observer
IOC	International Olympic Committee
IPC	International Paralympic Committee
IPC ADC	International Paralympic Committee Anti-Doping Committee
ISTI	International Standard for Testing and Investigations
IRMS	Isotope Ratio Mass Spectrometry
ISTUE	International Standard for Therapeutic Use Exceptions
LBCD	Brazilian Doping Control Laboratory (Laboratorio Brasileiro de Controle de Dopagem)
LOC	Local Organizing Committee
MEO	Major Event Organization
MLA	Minimum Level of Analysis
NADO	National Anti-Doping Organization
NPC	National Paralympic Committee
OOA	Out-of-competition
PLV	Paralympic Village
SRF	Supplementary Report Form
TA	Testing Authority
TDP	Test Distribution Plan
TDSSA	Technical Document for Sport Specific Analysis
TUE	Therapeutic Use Exception
USADA	United States Anti-Doping Agency
WADA	World Anti-Doping Agency

2. Acknowledgements

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3. Executive Summary

The IO Team observed all elements of the anti-doping program at the Rio 2016 Paralympic Games ("the Games"). This report details the IO Team's observations and assessment of the anti-doping program delivered at the Games and the recommendations of the IO Team for further improvement of the anti-doping program at future Games.

Prior to the Games, the IPC prepared its Test Distribution Plan (TDP) based on risk analysis of doping in the Paralympic Sports. The out-of-competition (OOC) testing plan covered nine out of the 22 sports in the Games' program, including all powerlifters who participated in the Games. With only one exception, all OOC testing was conducted in the Paralympic Village (PLV). OOC testing started from the day of the opening of the PLV and continued until the day before the Closing Ceremony. The IPC should be commended for implementing this recommendation from previous IO reports. The in-competition (IC) TDP covered all sports and both blood and urine samples were collected. The IPC showed flexibility in implementing the IC TDP, by incorporating information received from the laboratory and/or the Athlete Passport Management Unit (APMU) and/or by other means.

During the Games, sample collection processes suffered from a number of challenges for reasons related to the sample collection personnel, mainly the lack of sufficient and properly trained chaperones and the inadequate planning of the daily roster for sample collection personnel. On many occasions, during both the IC and OOC period the chaperones that were scheduled to attend missions failed to report for duty or turned up late. Moreover, on several occasions chaperones that did turn up were entirely new to the role, had received little to no training and assessment, and had to be trained on the day. The Doping Control Officers (DCOs) in general, already had experience from the Olympic Games. Due to the lack of sufficient and properly trained chaperones, on several occasions DCOs were asked to conduct athlete notification and chaperoning.

Despite the aforementioned limitations, the IPC managed to run an effective doping control program. In general, the sample collection process during the Games was in line with the International Standard for Testing and Investigations (ISTI) and on many occasions the DCOs received favorable comments from experienced athletes on their manner and the way in which they conducted the procedures.

A total of 1320 tests were conducted during the Games, including 777 IC and 543 OOC tests. In total 1681 samples were collected: 1394 urine, 242 blood, and 45 Athlete Biological Passport (ABP) blood samples. The analysis of these samples by the Brazilian Doping Control Laboratory (Laboratorio Brasileiro de Controle de Dopagem, LBCD)) resulted in 12 Adverse Analytical Findings (AAF) of which nine were covered by Therapeutic Use

Exemptions (TUE), and three were pursued and upheld as Anti-Doping Rule Violations (ADRV).

The IPC should be commended for its anti-doping program at the Games and particularly for implementing a number of good practices that could serve as an example to other anti-doping organizations and Major Event Organizations (MEOs), some of which are listed below for ease of reference:

- Communicating important facts and requirements related to the Paralympic Games with NADOs, IFs and NPCs in the lead up to the Games (see Recommendation no. 1);
- Addressing the issue of multiple dilute samples on a case-by-case basis (see Recommendation no. 40);
- Providing DCOs with standard statements to be recorded on the Doping Control Forms (DCF) regarding the modifications to sample collection procedures required due to an athlete's impairment (see Recommendation no. 44);
- Having an effective procedure in place to address complaints received during the Games (see paragraph 7.12)

This Report contains 75 recommendations covering operational and policy issues that could assist the IPC and future Local Organizing Committees (LOC) to improve the anti-doping program at the Paralympic Games and to further protect the clean athletes. All of the recommendations are important; however, for the purposes of this Executive Summary, 13 key high-level policy recommendations proposed by the IO Team are set out for ease of reference:

- The IPC should conduct and document a Risk Assessment that takes into account all possible risks of doping in the sports and disciplines that are part of the Paralympic Games program. For the IPC, it is necessary to complete and document such an assessment to ensure that the current program is effective. The assessment is a non-public living document to inform optimal testing strategies and to ensure that the anti-doping programs implemented sufficiently address the risks identified. (Recommendation no. 3)
- The IPC should establish, in cooperation with the World Anti-Doping Agency (WADA), a Taskforce to gather and assess information and intelligence in the lead-up to the Games, to provide testing recommendations to the relevant International Federations (IF) and National Anti-Doping Organizations (NADO) and to inform the IPC TDP for the Games period. (Recommendation no. 4)
- The IPC should consider including more sports into its OOC testing plans during the period of the Games. (Recommendation no. 5)
- The IPC should explore the option to conduct OOC testing outside of the PLV (e.g. accredited and non-accredited training venues and hotels). (Recommendation no. 9)
- The IPC should adopt a policy for imposing consequences for the National Paralympic Committee (NPC) delegations that do not provide timely and accurate whereabouts information and publicize this policy in advance of the Paralympic Games. (Recommendation no. 12)
- The LOC should ensure that chaperones are sufficiently trained (including receiving practical training) and that they are assessed by the LOC and/or the local NADO before working in the field. If the LOC and/or the local NADO are not able to conduct

such training and assessment, DCOs or experienced chaperones should be used to undertake this significant task. (Recommendation no. 14)

- The LOC should ensure that each venue has adequate sample collection personnel to carry out the tests in accordance with IPC's TDP. (Recommendation no. 18)
- The IPC should consider clarifying its policy on the modifications required to the Doping Control procedures to accommodate athletes with a visual impairment. For athletes with very low visual acuity and/or no light perception DCOs should ensure that either the athlete's representative or a second member of the sample collection personnel is always present during the sample collection process; other Athletes with a visual impairment should also be strongly encouraged to have a representative present during the sample collection process. (Recommendation no. 45)
- The IPC (and other MEOs) should request full access or actively collaborate with the IFs which have full access to the Anti-Doping Administration & Management System (ADAMS) ABP haematological and steroidal profile of those athletes who they are not already the custodian of and are participating in the Games (or other major events) in order to be able to target test effectively. (Recommendation no. 58)
- The IPC should consider providing, or assisting the athletes to obtain independent or professional translation during the initial meetings and of the Notice of Charge at least during the Games. In this respect, the IPC should consider the use of translators provided by the LOC (and/or otherwise, including remote interpretation services). (Recommendation no. 62)
- The IPC should consider amending Article 8.1.3 of the IPC Anti-Doping Code such that the IPC arranges for professional translation to be available at pre-hearing meetings and hearings where requested by an athlete or where it appears necessary at least during the Games. Alternatively, the IPC could simply do this in practice and not invoice the athlete without amending Article 8.1.3. If cost is an issue it may be an option to provide this translation remotely via telephone which would be preferable to not having professional translation at all. (Recommendation no. 69)
- The IPC should consider creating an independent judicial committee separate from the IPC ADC and ensure that the persons who sit on hearings are distinct from those individuals who have involvement in the operational planning/delivery of testing. (Recommendation no. 66)
- The IPC should consider developing an online, mobile-compatible education system (with completion records kept and linked to the IPC's athlete database), possibly based on or using existing WADA e-learning programs in relevant languages, available for all Paralympic athletes and their support personnel. Moreover, the IPC should consider the possibility to link completion of the online education to the accreditation process for participation at the Games. (Recommendation no. 74)

4. Introduction

4.1 IO Program

The Independent Observer (IO) program was established by the WADA with the aim to contribute to effective doping control programs during major sporting events and to enhance athlete and public confidence in the quality, effectiveness, and reliability of the

anti-doping program in place.

An IO Team comprised of experts appointed by WADA is present at the event monitoring the anti-doping program in place, reviewing relevant documentation and providing feedback and suggestions to the organization responsible for the event. An IO report is produced containing a summary of the Team's observations and assessment of compliance with the doping control rules and procedures applied to the event, non-conformities (if any) and the IO Team's recommendations for improvement at future events.

4.2 Methodology

As part of the IO program, an agreement was signed between the IPC and WADA authorizing and approving the presence of an IO Team mandated by WADA during all stages of the doping control procedures at the Games. For the composition of the IO Team see Appendix 13.1.

In accordance with the agreement, the observation period started on 2 September 2016, five days prior to the Opening Ceremony of the Games, and formally concluded on 18 September 2016, the day of the Closing Ceremony. This is the first time that the IO Team's official mandate started before the Opening Ceremony of the Games allowing the IO Team to observe the OOC period and the final stages of the preparations of the IPC's IC anti-doping program for the Games and discuss it with both the IPC Anti-Doping Team, the IPC ADC and Rio 2016 Anti-Doping Operations Manager.

Based on the agreement between the IPC and WADA, the IO Team gained access to observe all aspects of doping control during the Games including, in particular:

- TDP;
- Selection of athletes;
- Provision of whereabouts;
- Implementation of the OOC test program;
- TUE procedure;
- Athlete notification and sample collection procedure;
- Transport and chain of custody of samples;
- Sample analysis at the laboratory (should the IO member be appropriately qualified);
- Results management process including all hearings; and
- Any other relevant areas.

The IO Team observed all of the above with the exception being sample analysis at the laboratory (given the IO Team did not have a member with specific laboratory expertise) and some stages of the transport of samples to the laboratory (for logistical reasons).

In addition to the on-site observations at Doping Control Stations (DCSs), competition venues, and result management hearings, the IO Team held separate daily meetings with the IPC to discuss TUE management, OOC and IC testing plans, and results management procedures. Moreover, the IO Team attended the NPC Team Physician Meeting and the DCO workshop prior to the start of the Games.

The IO Team met only with the Rio 2016 Anti-Doping Operations Manager who was present at the daily IPC/WADA IO Team meetings; however, the IO Team did not have the chance to discuss with the Rio 2016 Doping Control General Manager from whom the IO Team only heard a presentation during the NPC Team Physician Meeting.

The IO Team's observations followed an audit-style approach. All of the comments and observations are made based on references to the World Anti-Doping Code and the relevant International Standards, the IPC Anti-Doping Code and the Technical Procedures for Doping Control for the Rio 2016 Olympic and Paralympic Games. The IO Team Chair and/or Vice-Chair (and other IOs from time to time as appropriate) met on a daily basis with the IPC Anti-Doping team, the IPC ADC and the Rio 2016 Anti-Doping Operations Manager to report on the IO Team's observations and provide suggestions and recommendations with the aim of supporting continued improvement to the program during the Games.

It is worth noting that the IPC, in partnership with the Institute of National Anti-Doping Organizations (iNADO), organized a webinar for its NADO members on the preparations for the Games on 18 April 2016. The IO Team consulted the IPC and signed up to the webinar. The IPC should be commended for taking this proactive approach in communicating important facts and requirements related to the Games with its stakeholders in the lead up to the Games.

Recommendation no. 1:

- The IPC is praised for its pre-Games communications and is encouraged to continue to create and use additional opportunities to communicate important facts and requirements related to the Games with NADOs, IFs and NPCs in the lead up to the Games.

5. Rules and Procedures: IPC Anti-Doping Code

The IPC has established the IPC Anti-Doping Code, which was reviewed by WADA and deemed to be in line with the World Anti-Doping Code. The IPC Anti-Doping Code applies to the Games and all other events and competitions under the jurisdiction of the IPC and for which the IPC has anti-doping authority including the time of preparation for competition.

In accordance with the IPC Anti-Doping Code, athletes and athlete support personnel are responsible for being knowledgeable of, and complying with the IPC Anti-Doping Code. The IPC Anti-Doping Code was provided in a user-friendly booklet in English only. However, it was apparent that neither the IPC nor relevant NPCs had prepared versions in other languages either in hard copy or online. Language was one of the issues noted with respect to the results management process during the Games (see paragraph 10, below). These issues to some extent flowed from IPC Code Article 8.1.3 which puts translation at the athlete's expense, even during the Games, and may warrant being re-visited for future Games to ensure all athletes fully understand the result management process and their rights and responsibilities regardless of their language.

Recommendation no. 2:

- The IPC should recommend the NPCs make translations of the IPC Anti-Doping Code available in their own languages to their athletes and athlete support personnel to mitigate against comprehension issues and assist prevention efforts (if the IPC does not provide translations itself).

6. Test Distribution Planning and Whereabouts

6.1 Risk Assessment

In accordance with the ISTI, all ADOs must conduct a thorough and objective assessment of the potential doping risks under their jurisdiction. The IPC informed the IO Team that their TDP was a result of a thorough risk analysis of doping in the Paralympic Sports. The IO Team requested the documented risk assessment from the IPC, however, this was not provided to the IO Team.

Recommendation no. 3:

- The IPC should conduct and document a Risk Assessment that takes into account all possible risks of doping in the sports and disciplines that are part of the program. For the IPC, it is necessary to complete and document such an assessment to ensure that the current program is effective. The assessment is a non-public living document to inform optimal testing strategies and to ensure that the anti-doping programs implemented sufficiently addresses the risks identified.

As reported in the Report of the IO to the Rio 2016 Olympic Games¹, a significant innovation at the Rio Olympic Games was the Pre-Games Intelligence Taskforce established by the International Olympic Committee (IOC) and WADA. The aim of the Taskforce was to develop an intelligence-led risk assessment that could identify gaps in testing of higher risk athletes in higher risk sports in the lead-up to the Rio Olympic Games, with recommendations provided to IFs and NADOs concerned to conduct testing accordingly, and to provide feedback to the IOC to inform the TDP for the Olympic Games period. As is documented in the Report of the IO for the Olympic Games, the outcome of that exercise was enormously valuable and greatly assisted the IOC and Rio 2016 in informing and refining the TDP during the Rio Olympic Games.

The IO Team is of the opinion that a similar joint taskforce could assist the IPC significantly to enhance the anti-doping programs in the lead up to and during the Games, taking into account the jurisdiction limitations of the IPC outside the period of these Games.

Recommendation no. 4:

- The IPC should establish, in cooperation with WADA, a Taskforce to gather and assess information and intelligence in the lead-up to the Games, to provide testing recommendations to the relevant IFs and NADOs and to inform the IPC TDP for the Games period.

6.2 Out-of-Competition Testing Plan

The OOC testing plan was limited to nine out of the 22 sports in the Rio 2016 Games' program, and included two new sports in the Games namely, para-triathlon and para-canoe. For the selection of athletes to be tested OOC, the IPC prioritized countries based on a country risk assessment and athletes based on the athletes' classification. The IPC kept an open communication channel with respective IFs and NADOs to collect athlete testing histories and/or intelligence, and adjusted its TDP accordingly; however, the information received both prior to and during the Games was limited. For its test selections, the IPC utilized an excel-based selection tool which the IO Team found to be effective and fit for the

¹ https://www.wada-ama.org/sites/default/files/resources/files/rio2016_io_team_report_26102016.pdf

purpose and could be developed further for future Games.

All powerlifters participating in the Games were included in the OOC testing pool with the aim to test each individual powerlifter before competition started. It is worth noting that this is the second time at the Games that the IPC has followed this testing strategy for the sport of powerlifting. The IO Team raised concerns about its effectiveness. The strategy resulted in extra pressure on the Rio 2016 Anti-Doping team to deliver, as not all powerlifters were able to be located to be tested and a number of them actually self-reported to the DCS in the PLV upon becoming aware that other powerlifters were being selected. However, the IO Team acknowledges the high ratio of ADRVs in the sport of powerlifting at almost every major event.

Following one of the recommendations from previous IO reports, the IPC continued its OOC testing program after the Opening Ceremony of the Games and the start of the competitions for individual athletes. Among the total of 543 OOC tests, 139 (26%) were conducted after the Opening Ceremony of the Games, including four follow-up tests on athletes who had returned Atypical Findings (ATFs). All the Rio 2016 OOC testing took place in the PLV where the majority of the Paralympic athletes resided. The IPC and Rio 2016 advised that there were plans to conduct a mission outside the PLV, at a place (also an accredited venue for the Games) close to the rowing venue where a number of rowers were residing but the plans were abandoned due to limited DCO availability. However, the IPC planned and conducted one swimming OOC mission outside accredited venues in the city of Rio de Janeiro by contracting U.S. Anti-Doping Agency (USADA).

Finally, as set out in more detail under paragraph 7.11 (Testing of Guides, Pilots, and Coxswains), it is unclear to the IO Team if the IPC conducted any OOC tests on guides, pilots or coxswains².

Recommendation no. 5-9:

- The IPC should consider including more sports into its OOC testing plans during the period of the Games.
- The IPC should continue using athlete testing histories as one of the criteria for selecting athletes for testing (although the IO Team understands the practical difficulties in obtaining this information).
- The IPC should consider sharing its OOC selection tool with other MEOs/Testing Authorities.
- The IPC should evaluate the effectiveness of its selection policy in the sport of powerlifting and based on the outcome of its evaluation, consider reallocating/increasing the number of tests in other sports (e.g., athletics and cycling).
- The IPC should explore the option to conduct OOC testing outside of the PLV (e.g., accredited and non-accredited training venues and hotels).

² Guides: In Athletics, Guides participate either alongside the athlete with the visual impairment, or in front of them (depending on the sport), communicating the course ahead for the athlete; Pilots: Sighted athletes used in Cycling riding a tandem bicycle with an athlete with a visual impairment; Coxswains: sighted able-bodied athletes are involved in Rowing, responsible for steering the boat during a race.

6.3 In-Competition Testing Plan

The IPC developed an IC testing plan for all sports at the Games and collected both blood and urine samples (see Appendix 13.4 for details). Due to the increased number of medal events in the Games' program and the limited number of available IC tests planned by the IPC, the majority of testing was targeted towards the finals of the events and fewer tests were conducted at the preliminary stages, except in sports of higher risk.

The IPC also showed flexibility in implementing the IC TDP; the selection of athletes for testing changed depending on information received by the laboratory and/or the APMU and/or other means. This is an illustration of good practice and the IPC should be commended for this.

The implementation of the IC TDP was monitored by the IPC, mainly through verbal updates by the Rio 2016 Anti-Doping team during the daily briefings and/or the reports provided by the IPC ADC members who were present in the field. Following a request from the IPC, the Rio 2016 Anti-Doping team was also monitoring the athletes tested to avoid over-testing.

Recommendation no. 10-11:

- The IPC should ensure that the progress of the IC Testing Plan is continuously monitored through the testing figures in the ADAMS or by having its own monitoring tool that could be created in that respect.
- WADA should ensure that ADAMS supports a use-friendly reporting tool through which MEOs are able to monitor progress in the testing plans.

6.4 Whereabouts

The IPC requested all NPC delegations to provide rooming lists setting out where their athletes were residing in the PLV. The majority of the NPC delegations provided these lists in a timely fashion and the IPC had a mechanism to follow-up with the ones that did not. However, it is unknown to the IO Team what the consequences were to the delegations that did not provide or provided inaccurate or delayed whereabouts information (if any).

As previous IO reports indicated, the IPC did not utilize whereabouts in ADAMS to locate athletes. Whilst the IO Team acknowledges the IPC's view that the majority of the Paralympic athletes probably don't provide whereabouts through ADAMS regularly and therefore asking them to do so during the Games would be a time-consuming administrative task, the IPC should proactively look at how many participants at the Games already utilize ADAMS to confirm this position.

Recommendation no. 12-13:

- The IPC should adopt a policy for imposing consequences for the NPC delegations that do not provide timely and accurate whereabouts information and publicize this policy in advance of the Games.
- The IPC should explore the possibility of utilizing ADAMS for the submission of athlete whereabouts.

7. Sample Collection and Transportation

7.1 Sample Collection Personnel

In the opinion of the IO Team, during the 2016 Games, sample collection processes suffered from a number of challenges for reasons related to the sample collection personnel, mainly the lack of sufficient and properly trained chaperones and, to a lesser degree, the inadequate planning of the daily roster for sample collection personnel.

a) Chaperones

The IO Team was advised that 290 chaperones (including team leaders) were recruited as part of the Rio 2016 anti-doping program. However, on many occasions, the chaperones that were scheduled to attend testing missions failed to report for duty or reported late. The lack of sufficient numbers of chaperones to notify and chaperone the athletes who were to be tested, and/or chaperones of the same gender as the athletes who were to be tested was obvious during both the IC and OOC period. In addition, on several occasions, volunteers with other duties at the venue were recruited as chaperones at the last minute and usually trained by a DCO or by a more experienced chaperone. In practice, there was no practical training and no assessment of chaperones. It is the opinion of the IO Team that such recruitment and training of chaperones as seen in Rio during the Games, is not acceptable where well trained chaperones are required to work as the frontline of the Rio 2016 Anti-Doping team for athletes and athlete support personnel. Moreover, although it is acknowledged that the recruitment, training and assessment of chaperones for the Paralympic Games is the responsibility of the LOC, the IO Team is of the opinion that the IPC should monitor closely the LOC's efforts in this important area and raise concerns if the LOC is not meeting the required standards.

Recommendation no. 14-15:

- The LOC should ensure that chaperones are sufficiently trained (including receiving practical training) and that they are assessed by the LOC and/or the local NADO before working in the field. If the LOC and/or the local NADO are not able to conduct such training and assessment, DCOs or experienced chaperones should be used to undertake this significant task.
- The LOC should ensure that chaperones have field experience and ideally are familiar with the venue of their assignment e.g., participate at test events before participating at the Games.

b) Doping Control Officers

The IO Team was advised that 70 DCOs were recruited for the Games; 28 were sourced from Brazil and the remaining 42 from international ADOs (of 23 different nationalities). The majority of the DCOs already had experience from working for the Rio 2016 Olympic Games but there were also a few who were participating at a major event for the first time.

Rio 2016 conducted three DCO transition workshops, in the period between the Olympic and the Games, in collaboration with the IPC but DCO attendance was not mandatory. The IO Team was present in one of the workshops and considers that useful information was shared with the DCOs. However, training was delivered in English and it was apparent that many of the DCOs present had difficulty in understanding the briefing. In addition, there was no practical assessment of the DCOs.

Recommendation no. 16:

- The LOC and IPC should consider making attendance at DCO transition workshops mandatory in order for the DCOs to be eligible to be a member of the Anti-Doping team at the Games.

c) Doping Control Station Managers

Doping Control Station Managers (DCSMs) were experienced international or Brazilian DCOs and most of them had participated at previous major events. They were well organized and well prepared. They often had to undertake other duties e.g., of the DCO or chaperone and fill in gaps in order to avoid the potential cancellation of planned testing sessions and should be commended for this.

Although, as mentioned above, DCSMs in general had experience from other events, on a few occasions, the IPC ADC members when present at the DCSs, needed to be heavily involved with the implementation of the anti-doping program in the DCSs. The IPC provided the IO Team with a document entitled “Doping Control Role of IPC Anti-Doping Committee at Games Time” which set out the roles of the IPC ADC and the IO Team acknowledges that the aim of the IPC ADC members’ involvement was to ensure that the planned tests would be carried out; however, the IO Team observed that the roles in practice were not as clearly delineated as had been previously understood which, on some occasions, caused some operational confusion. It is suggested that the roles of the IPC ADC are clearly set out in detail including by reference to practical scenarios and communicated with the LOC and so that all parties fully understand their roles and responsibilities in the field.

Recommendation no. 17:

The IPC ADC should clarify the roles of their IPC ADC members in detail in relation to the implementation of the anti-doping program and particularly the management authority on site at the DCSs, preferably, by reference to practical scenarios so all involved in the process are clear on their roles and responsibilities in practice.

d) Rostering of Sample collection personnel

The Rio 2016 Anti-Doping team was responsible for organizing the daily roster of the sample collection personnel so that adequate staff were present at each venue to carry out the tests in accordance with IPC’s TDP for that venue on that day. However, due to lack of resources, an IPC ADC member and an observing expert from Tokyo 2020 had to take over the initial rostering of sample collection personnel.

As mentioned above, a number of venues encountered staffing problems, due mainly to a lack of chaperones. However, on a few occasions the IO Team had observed an apparent surplus of sample collection personnel at one venue but short of staff at the other on the same day indicating a lack of coordination in planning the rostering of sample collection personnel.

In addition, the IO Team observed that sample collection personnel (mainly DCOs and chaperones) were often moved around from one venue to another. As a result, it was difficult to build team spirit/cohesion and for staff to become familiar with a venue and its sport/s, which could have helped staff carry out their responsibilities more efficiently.

Recommendation no. 18-19:

- The LOC should ensure that each venue has adequate sample collection personnel to carry out the tests in accordance with IPC's TDP.
- The LOC should minimize the changes of the sample collection personnel appointed to a specific venue to achieve improved team cohesion and venue/sport familiarization.

7.2 Doping Control Stations

Accessibility to DCSs for athletes with an impairment is key to a successful anti-doping program at the Games. Rio 2016 managed to secure good size facilities for the number of athletes tested. DCSs were equipped with the necessary furniture and technical equipment (e.g., anti-doping equipment, computer, printer, shredder, etc.) however, the IO Team observed a number of challenges.

Rio 2016 used the same DCSs that had been used during the Olympic Games and therefore, the majority of the DCSs were equipped with a large amount of furniture to cope with a higher volume of testing than the testing numbers of the Games. As a result, the IO Team observed athletes in wheelchairs having mobility difficulties inside some DCSs due to the excess furniture.

Most of the DCSs were wheelchair accessible, easy to locate and in close proximity to the area where the notifications for doping control were taking place. This was not the case in some venues such as the Carioca Arenas (wheelchair basketball, goalball, fencing, bocce etc.) however, where the DCS was located some distance outside the competition venues. In the case of table tennis, a golf cart that was used to transport athletes from the venue to the DCS was not wheelchair accessible. It is the opinion of the IO Team that this constitutes a serious logistical failure and that the TDP criteria should not be modified to accommodate such logistical issues which should have been considered and avoided prior to the Games.

Most DCSs were equipped with a computer/laptop and a printer in the office of the DCSM. However, the IO Team members observed several instances where access to Wi-Fi to download emails containing the mission orders was problematic and did not facilitate the DCSM's work.

At some DCSs there were fridges for the storage of samples in each processing room. However, this seemed redundant as all samples were handed to the DCSM and stored in the DCSM's office which was always equipped with a fridge.

A TV was available in the waiting room of each DCS, but not all were showing the competition of the venue in question. The live coverage of the competition at the venue would assist the DCSM to follow the competition progress on the field of play and be of interest to the athletes who are waiting for doping control in the DCS. The IO Team believes this should be considered at future Games.

Recommendation no. 20-23:

- The LOC should ensure that DCSs are equipped with the necessary furniture based on the number of athletes to be tested each day; and excess furniture (e.g., unnecessary chairs) in the DCS should be removed to assist the mobility of athletes in a wheelchair.
- The LOC should ensure that DCSs are located in close proximity to the area where the notifications for doping control are taking place, and ensure they are easily accessible to athletes at all times.
- The LOC should ensure that the necessary technical equipment (e.g., anti-doping equipment, computer, printer, shredder, etc.) is in place in each DCS, including access to the internet.
- The LOC should ensure that a TV is available in each DCS with live coverage of the competition at the venue to enable the sample collection personnel to follow the competition progress on the field of play, and be of interest to the selected athletes waiting.

7.3 Notification of athletes (In-Competition and Out-of-Competition)

On many occasions, the notification of the athlete selected for testing was not conducted in line with the ISTI. Commonly observed challenges during the notification process were:

- athlete's rights and responsibilities were not explained;
- athletes were not informed of the type of sample they had to provide until they were in the DCS;
- written notification of athletes was often undertaken with a significant delay to the verbal notification (in certain instances, even 1.5 hour later); and
- athletes did not receive a copy of the notification section of the DCF until reporting to the DCS or in many instances until the end of the sample collection session.

It is worth noting that the above challenges were mostly observed when inexperienced chaperones were solely responsible for the notification but very rarely when the notification was conducted by experienced DCOs or when an experienced chaperone team leader was on site to coordinate the notification process.

The notification of athletes for OOC testing at the PLV was not organized effectively. Testing could not start early in the morning (e.g., before 9 a.m.) due to the late arrival of the chaperones and as a result the opportunity of locating athletes in their apartment was missed. The IO Team raised this issue at the daily meetings with the IPC and the Rio 2016 Anti-Doping team and as a result, notification of athletes started taking place earlier in the morning.

Chaperones who had worked in the PLV during the Rio 2016 Olympic Games were familiar with the facilities and relevant procedures at the PLV and could locate the athlete's apartment and rooms easily. They primarily looked for the selected athletes in their apartment and sometimes in the athletes dining hall. In fact, there was a good arrangement with the dining hall security allowing access for chaperones to the dining hall. However, other areas in the PLV (e.g., the international zone etc.) were not checked by the chaperones before they would return to the DCS and report an unsuccessful attempt. Training schedules of athletes or planned team activities (such as the flag-raising ceremony)

that could be made available to the Rio 2016 Anti-Doping team were not taken into consideration before making the initial attempt to locate the athletes in the PLV. Moreover, even though available, two way radios were rarely utilized by the chaperone team leader and the chaperones to coordinate the notification process in the PLV. The late start of testing in the PLV and the poor planning resulted in a loss of valuable time depleting the already limited doping control resources available at the DCS in trying to locate the athletes.

The unsuccessful attempts to locate the athletes were not systematically monitored or consistently reported to the IPC on a regular basis. As an example, the IO Team witnessed that an attempt to locate one athlete continued over the course of three days despite multiple unsuccessful attempts. However, the IPC was not aware of the matter until the IO Team raised it at one of the daily morning meetings.

The DCS in the PLV did not have access to the athlete's info database; hence this valuable tool was not utilized to help chaperones familiarize themselves with the identity of the athletes they were looking for. The IO Team observed a few chaperones searching for athletes' pictures on their personal smart phones.

Testing with no advance notice should always be a priority. However, for OOC testing at the PLV, due to the set-up of the PLV, no advance notice it was extremely difficult. The chaperones were relying on the rooming list to locate an athlete. When the athlete was not available, the chaperones were instructed to collect more information on the unavailable athletes at the NPC offices located in the same building. The IO Team observed on many occasions chaperones revealing the selected athletes' names to third parties (e.g., athletes' representatives) in order to assist them in locating them. Even when the athlete's name was not disclosed, the NPC would have an idea of which sport team was being sought by the chaperones.

Moreover, the IO Team observed on several occasions the chaperones not being cautious with the information on their clip boards while waiting on the field of play. This meant that the information about the athlete selection could easily be seen by others and was not always kept confidential.

As mentioned above, the athlete's rights and responsibilities were not properly explained or not explained at all during the notification of the athlete's selection for testing, because the chaperones received no adequate training and/or did not understand their role and the importance of informing athletes of these rights and responsibilities and/or spoke little or no English. A multi-language translation of "Athlete's Rights & Responsibilities for Doping Control" was circulated to the DCSMs in the middle of the Games; however, the IO Team did not observe it being used in the field.

In general, there was good coordination between the doping control team and the competition/venue officials. In most cases, there was a dedicated location for the chaperones to observe the athletes on the field of play. The optimal time and place to notify the athletes was agreed upon before the competition began. There was good communication and cooperation between the DCSM and the venue staff in charge of competition and medal ceremonies which also assisted with the notification and chaperoning.

It is worth noting that despite the presence of a number of IPC ADC members in Rio, not all OOC testing at the PLV (including notifications) benefited from the oversight of an IPC ADC member. The IO Team acknowledges the IPC ADC members' very busy program during the Games; however, it is the opinion of the IO Team that, where possible, an IPC ADC member

should be in attendance at all OOC sessions to mitigate against the challenges listed in this section of the report. In the view of the IO Team, discussion between the IPC ADC members and the Rio 2016 Anti-Doping team early on in the Games could have assisted towards the earlier implementation of the required corrective actions.

Recommendation no. 24-29:

- The LOC should ensure that attempts to locate and notify athletes for doping control during the OOC period in the PLV start early in the day to avoid missing athletes who have already left their apartments for breakfast or morning training.
- The LOC should ensure that training schedules, welcome ceremonies and other team activity plans are provided to the PLV Anti-Doping Team and are taken into consideration before planning OOC testing missions.
- The LOC should ensure that Chaperones have clear instructions to thoroughly search for the selected athlete, at every possible location, before concluding that the athlete cannot be located.
- The LOC and the IPC should have clear procedures in place for the timely reporting of any unsuccessful attempts to locate athletes for testing.
- The LOC should consider utilizing the athletes' info and photo database, available in the Paralympic Games intranet, to help chaperones identify the athletes during OOC testing.
- The IPC should prioritize the presence of IPC ADC members at all stages of the OOC testing from the opening of the PLV or as early as possible.

7.4 Chaperoning of Athletes

This was a significant area of challenge for the Games due to the lack of chaperones in general and therein an acute lack of experienced personnel as described in more detail under paragraph 7.1 Sample Collection Personnel.

On a few occasions the IO Team observed that chaperones were assigned to notify athletes of different gender (e.g., at wheelchair basketball and shooting). This did not seem to cause a problem at shooting as the athletes did not change before reporting to doping control. However, at the wheelchair basketball the chaperone had to wait outside the athlete change room. The IF technical official came to help with the chaperoning inside the change room; however, the chaperone lost sight of her athlete for an extended period of time.

In the opinion of the IO Team, it was apparent that not all chaperones were aware of the responsibilities of their role. On several occasions chaperones were observed to walk in front of their athlete without observing them properly or often athletes were not encouraged to report to the DCS immediately after notification and on a few occasions the athletes stayed for more than two hours outside the DCS, not always with a valid reason as stipulated in the ISTI.

In an attempt to reduce the number of dilute samples (i.e., a urine sample which does not meet the specific gravity requirement as per the ISTI), the IPC and the Rio 2016 Anti-Doping team instructed chaperones to advise athletes at the point of notification to avoid drinking large quantities of liquids and to monitor the amount of fluids athletes drank before reporting to the DCS or in the waiting room of the DCS and report back to the DCSM. These instructions were to assist with applying the IPC's dilute sample policy; see paragraph

7.5.f); however, on several occasions the chaperones failed to carry out this action appropriately.

Recommendation no. 30-32:

- The IPC should ensure that its testing plans are taken into account by the LOC and that, at all times, at each venue the LOC has a sufficient number of chaperones of the same gender available for chaperoning athletes selected for doping control.
- The LOC should ensure that chaperones receive adequate training and understand fully the responsibilities of their role, in particular the chaperoning of athletes selected for doping control.
- The LOC should ensure that chaperones are aware of the requirement to advise athletes, at the point of notification, to avoid drinking large quantities of liquids, and monitor athletes' drinking before reporting to the DCS or in the waiting room and report this information to the DCSM accordingly. To assist with this process the LOC should consider developing a document to guide chaperones with recording an athlete's level of drinking during chaperoning and reporting to the DCSM whenever necessary.

7.5 Sample Collection Process (Urine and Blood)

In general, the sample collection process and related procedures during the Games was in line with the ISTI and on many occasions the DCOs received favorable comments from experienced athletes about their manner and the way in which they conducted the procedures.

Below are the IO Team's comments in relation to the various parts of the sample collection process, referring to both the good initiatives and the challenges observed during the Games.

a) Arrival at the DCS

Access control to the DCSs was managed at the reception desk located inside the DCS. Athletes selected for doping control and their representatives were usually provided by their chaperone with a Doping Control Station Access Pass in order to be able to enter the DCS. This Doping Control Access Pass was also very important to chaperones or chaperone team leaders since it provided access to certain areas in the venue that were access-controlled such as the mixed zone and the medal ceremony room. However, it was not always used as on many occasions chaperones failed to provide it to athletes and their representatives or it was not requested from them at the reception desk in the DCS.

Recommendation no. 33:

- The LOC should ensure that access to the DCS is controlled by appropriately trained sample collection personnel at all times.

b) Coordination in the DCS

The movement or flow of athletes in the DCS worked well in the majority of stations. When an athlete was required to provide urine and blood samples, the urine collection was prioritized. However, on many occasions if an athlete was not ready to provide urine, the blood collection was not processed and the athlete was requested to wait in the DCS.

The IO Team observed that the sample collection procedure in the processing rooms was on several occasions interrupted by either the DCSM or sample collection personnel who entered or exited the room. This can result in distractions and lead to errors in the completion of the doping control documentation. The IO Team raised this issue and the Rio 2016 Anti-Doping team placed signs on the doors of the processing rooms of a few DCSs alerting when a sample collection session was in progress.

Recommendation no. 34-35:

- The LOC should review the training it provides to the sample collection personnel to ensure DCOs are fully prepared in a consistent and process-driven manner and can deal with various, unexpected sample collection scenarios, e.g., if an athlete is selected to provide urine and blood samples and is not ready to provide their urine sample, it is best practice to request the athlete to provide the blood sample first.
- The LOC should ensure that entry to the processing room while the sample collection procedure is in progress is not allowed except for exceptional reasons. The rule of the 'closed door' should be used at all DCS i.e. if the door of a processing room is closed, the sample collection process in that room is in progress.

c) Prior to providing a sample

Prior to an athlete providing a sample, not all DCOs asked the athlete whether he or she had been tested before or would need an introduction to the procedure. It turned out that a number of athletes competing at the Games had little experience with doping control. For example, some athletes were not aware of the requirements for volume and/or specific gravity of their urine sample. It is the opinion of the IO Team that many partial samples could have been avoided if the athletes had been provided with an explanation on the sample collection procedures in advance.

Recommendation no. 36:

- The LOC and IPC should ensure that athletes receive clear instructions of the sample collection process requirements (e.g., urine volume, specific gravity), and their rights and responsibilities prior to providing a sample.

d) Urine sample procedure

In general, sample collection sessions were completed within a reasonable time; however, on at least one occasion the IO Team observed the DCO stayed with the athlete in the toilet for more than 30 minutes until the provision of sufficient volume of urine. In a busy DCS this can cause delays and frustration for other athletes waiting for their turn to provide a sample.

On several occasions, after the athletes had poured and sealed their urine into the A and B bottles, the DCOs asked if the athletes would allow them to check the sealing of the bottles. However, according to the ISTI, it is the DCO's responsibility to verify the sealing of the bottles. In addition, on a few occasions DCOs checked if the bottles had been properly sealed after the bottles were turned upside down by the athletes to check for any leaks. This meant that if the bottles were not properly sealed, they could have leaked.

On at least one occasion, both bottles and the collection vessel were handled by the DCO, before the urine sample was sealed and without the consent of the athlete. This modification to the process was not recorded by the DCO on a SRF.

On many occasions, athletes' provided a full collection vessel of urine and DCOs instructions were to seal only part of it thus leaving a large volume of urine out of the sealed bottles to measure the specific gravity. After the measurement of the specific gravity, the remainder of the urine was discarded in the presence of the athlete. As a result, the volume recorded on the DCF did not match the actual volume in the bottles.

DCOs wrote the sample code number on the DCF and then stuck the relevant barcode label (that came with the A and B bottle kit) on top of the number, which, in the opinion of the IO Team, was an unnecessary duplication. Moreover, athletes were not always informed by the DCOs of what was going to happen to the spare barcode labels.

DCOs were instructed by the Rio 2016 Anti-Doping team to have the completed DCF reviewed for errors by the DCSM or another DCO before the athlete was allowed to leave the DCS. Whilst this extra review helped uncover several errors on the forms and enabled the correction of them before the athlete's departure from the DCS, it caused delays in the completion of the sample collection process.

Recommendation no. 37-38:

- The LOC should review the guidance it provides to the sample collection personnel to ensure that:
 - i. At least in busy DCSs, athletes should not be encouraged to stay in the toilet for too long; instead, DCOs should proceed with the partial sample process (if needed). This will avoid delays for other athletes that are ready to provide their sample;
 - ii. DCOs should not touch the bottles or the collection vessel without the consent of the athlete and before the urine sample is sealed;
 - iii. DCOs should always verify the sealing of the A and B bottles before they are turned upside down to check for any leakage;
 - iv. Only a few drops of urine should remain in the collection vessel for the measurement of the specific gravity. The full amount of urine in the collection vessel should be poured and sealed into the A and B bottles, and recorded on the DCF;
 - v. Athletes should be allowed to exit the DCS at the earliest opportunity after the completion of the sample collection session. The double-checking of the DCF by the DCSM or another DCO is a time consuming process and should be avoided.
 - vi. Athletes should receive an explanation as to where and how the remaining bottle code labels are going to be used.
- The LOC and the IPC should review the need for having both the sample code number written on the DCF by the DCOs and the barcode label stuck on top of it.

e) Partial urine samples

From observations of the sample collection process by the IO Team it was apparent that some DCOs were not sufficiently familiar with the partial sample process in place in Rio 2016. On at least one occasion, an IO Team member had to intervene to instruct the DCO to finish the partial sample procedure properly before a substantial departure from the ISTI occurred. Taking into account that the partial sample kit and procedures in use in Rio 2016 might be slightly different from what the DCOs are used to when conducting testing for their anti-doping organizations, more training and familiarization time for the DCOs in Rio 2016 should have been provided as part of the DCO transition workshop.

One particular point of the partial sample process that was noted by the IO Team was the mixing of partial samples when an athlete has provided further sample after a partial sample. DCOs instructed the athletes to mix the two samples until the cumulative volume reached the exact amount of 100ml. These instructions reduced the risk of the mixed sample being dilute and not meeting the specific gravity limit. In the IO Team's view, the LOC could show flexibility and allow instead a narrow range e.g. 90-110 ml in the cumulative volume of urine.

Recommendation no. 39:

- The LOC should consider revising the instructions provided to DCOs regarding the mixing of partial samples to allow some flexibility (i.e. a narrow range instead of an exact amount of cumulative volume of urine).

f) Dilute samples

The IPC developed detailed instructions for procedures relating to the provision of a second dilute sample by athletes. Based on the IPC's instructions, the DCO was to inform the DCSM who in turn was to inform, by phone, the IPC Anti-Doping Senior Manager of the athlete's name. The IPC Anti-Doping Senior Manager would then ask a series of questions and give instructions on how to proceed i.e., either to collect additional sample(s) or terminate the sample collection session and, if necessary, to target test the athlete over the following day(s). The IPC should be commended for their efforts in addressing this issue on a case-by-case basis. This process worked well, however, the IO Team did not observe an occasion where a third sample or a target test was requested. Moreover, the IPC Anti-Doping Senior Manager was not always able to be contacted by phone due to meetings or other commitments and either the IPC ADC Chair or the IPC ADC members onsite for doping control were acting as alternative contact persons to make decisions on whether additional samples are required.

Recommendation no. 40:

- The IPC should evaluate the implementation and effectiveness of their dilute sample policy and share the outcome with other anti-doping organizations, in particular other MEOs, as an example to be followed in determining whether to continue the sample collection session or not.

g) Blood testing

During the DCO Transition Workshop observed by the IO Team, no DCO raised concerns about their familiarity with blood testing procedures. In practice, while most of the blood testing processes performed during the Games were appropriate and the BCOs proficient, on several occasions, blood collection practices led to athlete distress. For example, in one instance, a DCO insisted an athlete should look at the vein when the blood started to flow into the tubes. There were at times procedural errors, and even sample invalidation. For example, one blood sample was not analyzed because no B sample was able to be collected from the athlete as the BCO in charge was not able to draw sufficient quantity of blood for both the A and B samples.

Recommendation no. 41:

- The LOC and the IPC should ensure that all DCOs and BCOs involved in blood sample collection during the Games are experienced and sufficiently trained and have been assessed in advance of the Games.

h) Declaration of medications

The IO Team discussed with the IPC the possibility of an athlete declaring the use of a prohibited substance(s) or method(s) on the DCF during the sample collection process which could constitute a non-analytical ADRV and what would be the process in addressing this. The IPC has not yet developed a policy for the management of such potential occurrences during the Games. The development of a policy for such circumstances would be of benefit to the IPC to ensure that the necessary processes are followed to assist in the investigation of possible non-analytical ADRVs.

Recommendation no. 42:

- The IPC should develop a policy and procedures for the management of potential cases for non-analytical ADRVs including where an athlete declares the use of a prohibited substance(s) and/or method(s) during the Games.

i) Research question

Another area where DCOs could benefit from a standard explanation was the research question to athletes. It is the opinion of the IO Team that more athletes could have provided their consent for the use of their samples for research purposes on an anonymous basis if the question had been clearly explained.

Recommendation no. 43:

- The LOC and IPC should ensure that athletes are provided with a clear and adequate explanation about the value of consenting for their samples to be used for research purposes.

7.6 Modifications for athletes with impairments

The IO Team witnessed some good practices and initiatives from the IPC and Rio 2016 Anti-Doping team regarding the required modifications to the sample collection session for athletes with impairments. For example, athletes with a visual impairment were offered a ruler to assist them with signing in the appropriate sections of the DCF and the IPC provided to all DCSMs instructions on how the DCF should be filled in depending on the modification required.

The Rio 2016 Anti-Doping team organized the DCO Transition Workshops during which the IPC made a presentation with information about the special needs of athletes with impairments for sample collection and how to address them, without compromising sample collection. The presentation slides were shared with all DCOs.

However, it was not clear to the IO Team what the IPC's and the Rio 2016 Anti-Doping team's instructions were regarding the different categories of athletes with visual

impairments and in particular which athletes should have a representative present in the processing room and/or the toilet while athletes are providing a urine sample. It is worth noting that, this particular point was also not clearly addressed in the Doping Control Officer Manual. DCOs should ensure that these athletes have with them during the sample collection either a representative or a second observer (however, neither the athlete's representative nor the observer should directly observe the passing of urine).

On several occasions the IO Team observed athletes that use urine collection or drainage systems, not eliminate existing urine from such systems before providing a urine sample for doping control, which is a requirement under Annex B.4.6 of the ISTI.

Recommendation no. 44-46:

- The IPC is encouraged to share with other ADOs the modifications required for sample collection on athletes with impairments and how they should be recorded on the DCF.
- The IPC should consider clarifying its policy on the modifications required to the Doping Control procedures to accommodate athletes with a visual impairment. For athletes with very low visual acuity and/or no light perception DCOs should ensure that either the athlete's representative or a second member of the sample collection personnel is always present during the sample collection process; other Athletes with a visual impairment should also be strongly encouraged to have a representative present during the sample collection process.
- The IPC and the LOC should ensure that DCOs require athletes using urine collection or drainage systems to eliminate existing urine from such systems before providing a urine sample for doping control.

7.7 Storage of Samples in the Doping Control Station

At the completion of each sample collection session, the DCOs delivered samples and documentation to the DCSM office.

According to the Rio 2016 DCO Manual, the urine samples were supposed to be placed immediately into a refrigerator; however, the IO Team observed in several instances that urine samples were not stored in refrigerated conditions. Instead, the samples were left at room temperature until the arrival of the courier.

The blood samples were placed into cooled transportation boxes. The IO Team noted that the DCSM and/or the DCOs were instructed to turn on the temperature tracking device once the first blood sample was placed in the transportation box. However, this is contrary to the recommendation of the manufacturing company to "precondition" the device to the desired mean temperature for about 30 minutes before use, to avoid false readings during the start up of the device. This was raised by the IO Team to the IPC and Rio 2016 Anti-Doping team and was promptly corrected.

Recommendation no. 47-48:

- The LOC should always store urine samples in refrigerated conditions to minimize the risk of sample degradation due to factors such as time delays and hot temperature conditions.
- The LOC must ensure that the recommendations of the manufacturing company for the use of temperature tracking devices are followed to avoid false readings.

7.8 Transport of Samples and Chain of Custody

Samples were kept refrigerated (save for the comment made under paragraph 7.7 Storage of Samples in the Doping Control Station, above) in the DCSM's office until the arrival of the courier and their dispatch to the laboratory

Overall, the Chain of Custody (COC) process was of a good standard. The samples were transported from each venue to the laboratory via a local courier service, authorized by the Rio 2016 Anti-Doping team. Urine and blood samples were packaged separately: urine samples were transferred in sealed bags, whilst blood samples were transported, loosely, in unsealed cooling boxes.

The IO Team observed that the plastic, watertight bags that contain the absorbent pads which are packaged within the A and B bottle kit were not used to seal the urine sample bottles. This raised a few questions by athletes and their delegations that were used to a different practice in their own countries. However, Rio 2016 provided sufficient clarification on the matter, in that the plastic bags were originally used to prevent contamination from potential leakage during transport by air but were not needed during the Rio 2016 Games since the samples were transported to the laboratory by road.

Recommendation no. 49-51:

- The LOC should ensure that urine and blood samples are transported to the laboratory in securely sealed boxes to guarantee the safety and integrity of the samples.
- The LOC should consider having A and B blood samples matched for the transportation to the laboratory (e.g., put into a plastic bag or kept together with a plastic wrapper) to facilitate their swift registration on arrival to the laboratory.
- The LOC should consider informing athletes and delegations about the sample collection procedures in place during the Games, through video, posters, leaflets, etc.

7.9 Documentation

The IO Team reviewed the doping control documentation used for the Games. While the DCF was customized for the Games, all other forms (e.g., SRF, Athlete Biological Passport Supplemental Report Form (ABP SRF), COC form, DCS entry/exit log, etc.) were the same for both the Olympic and Paralympic Games.

There was no copy of the forms for the IO Team (except for the ABP SRF). As a result the Rio 2016 Anti-Doping team scanned the doping control documentation and sent it to the IO Team by email each day after entry of the relevant data into ADAMS was completed. After the start of competition at the Games, the IO Team received the doping control documentation, and on more than one occasion, it was received with a two to three day delay. In conjunction with a delay in the data entry in ADAMS, it became difficult for the IO

Team to monitor the testing progress and generate ADAMS daily test reports.

The review of the completed doping control documentation by the IO Team revealed a number of mistakes and corrections on the forms. Although in most cases a SRF was used to record non-conformities, the IO Team spotted several errors on the forms that went undetected by sample collection personnel. The IO Team brought this issue to the attention of the IPC and Rio 2016 Anti-Doping team during the daily meetings.

Below are additional comments for each of the forms that were used during the Games:

a) Doping Control Station entry/exit log

The completion of the DCS entry/exit log was not consistent across all DCSs. Athletes and their representative were sometimes requested by sample collection personnel to either sign the log upon arrival or upon departure from the DCS and in some occasions, they were not requested to sign at all.

b) Supplementary Report Form (SRF)

The SRF contained two copies, one for the athlete and one for the IPC, however, the athlete signature box was missing. Also missing was a third copy for the laboratory with the signatures section and personal details blacked. When extra medication was declared on the SRF with the athlete's name and signature, the athlete was given a full copy and the laboratory received by email a scanned copy from the Rio 2016 Anti-Doping team, who had to remove the athlete's personal details to avoid the disclosure of the athlete's identity.

c) Athlete Biological Passport Supplementary Report Form (ABP SRF)

The ABP SRF had an IO copy but did not have an athlete copy. Following the IO Team's recommendation, the IO copy was given to the athlete at the end of their sample collection session.

d) Chain of Custody (COC) Form

The lines on the COC form were not wide enough to accommodate the A/B bottle barcode labels. Therefore, DCSMs were using every second line to add a new A/B bottle sticker to the COC form.

Recommendation no. 52-53:

- The LOC should ensure that the Games time DCFs are previously used at test events to confirm their content and functionality, and that the sample collection personnel are trained in filling the doping control documentation to ensure consistency.
- The IPC and LOC of future Games should consider the need for the development of a paperless system for sample collection procedures during the Games period.

7.10 Testing for Alcohol

In accordance with the 2016 Prohibited List, alcohol (ethanol) is prohibited in-competition in five sports, which include para-archery (under World Archery) on the Games program. At

the NPC Team Physician meeting which was held prior to the Opening Ceremony, the IPC ADC advised that urine and/or blood samples would be collected, however there was no reference to breath alcohol testing which may have enhanced the deterrent effect if it was mentioned.

7.11 Testing of Guides, Pilots, and Coxswains

The IPC Anti-Doping Code provides the definition of the term 'Team' which includes, among others, athletes with a visual impairment and his/her guide and/or pilot (e.g., in athletics, cycling, etc.).

Although not explicitly specified in the TDP, the IO Team was advised that the IPC planned to test guides. However, it is not known to the IO Team how many guides had been tested during the Games and what the selection criteria were.

Recommendation no. 54-55:

- The IPC should consider including guides and pilots into their OOC and IC testing plan.
- For the IC selections of guides and pilots, the IPC should have a clear policy when testing at a discipline where more than one guide and/or pilot is competing with the athlete (e.g. athletics 5000m).

7.12 Addressing Complaints

During the Games the IPC received several complaints from NPCs about the way testing was conducted. The IPC dealt with all of the complaints in a very professional fashion examining the facts and responding to the NPC concerned. The IO Team acknowledges the value of having such an open communication channel in helping the IPC and Rio 2016 Anti-Doping team to identify problems and/or areas of improvement during the period of the Games and promptly implement corrective actions. Thus, the IPC should be commended for having an effective procedure in place to deal with complaints received during the Games.

8. Analysis of Samples

8.1 Analysis Menu

A total of 1681 samples were collected during the Games: 1394 urine, 242 blood, and 45 ABP blood. One blood sample was not analyzed because there was no B sample collected from the athlete³.

A total of 205 samples from nine sports (IPC swimming, IPC athletics, wheelchair-basketball, para-canoe, para-cycling, IPC powerlifting, para-rowing, para-sailing and para-triathlon) and 15 disciplines were analyzed for Erythropoiesis Stimulating Agents (ESAs). The Technical Document for Sport Specific Analysis (TDSSA) Minimum Level of Analysis (MLA) for ESAs were met (equal to or above the MLA) in 12 sport/disciplines and not met in 13 sport/disciplines (including IPC athletics-throws, wheelchair basketball and IPC powerlifting). In fact, out of these 13 sport/disciplines, no ESAs analysis was requested in the 10 sports/disciplines that have a MLA requirement in the TDSSA. Four sports/disciplines on the Games program (para-archery, para-boccia, para-equestrian and IPC shooting) do

³ Blood drawing procedure was terminated because the blood collection officer in charge was not able to draw sufficient quantity of blood for both the A and B samples.

not have any requirement for ESAs in the TDSSA.

In the sample analysis agreement between the IPC and the LBCD, the laboratory offered to include the Growth Hormone Releasing Factors (GHRFs) analysis as part of the standard screening of all urine samples during the Games period. Therefore, 1376 out of the total of 1394 urine samples were analyzed for GHRFs. With the addition of the 241 blood samples, collected from eight sports/disciplines, that were analyzed for Growth Hormone (GH), the IPC met the TDSSA MLA requirements on GH and GHRFs for all sports/disciplines. A detailed breakdown of samples by sport/discipline with the TDSSA analyses data is shown in Appendices 13.2 and 13.3.

39 urine samples were analyzed with Isotope Ratio Mass Spectrometry (IRMS).

No samples were analyzed for insulin, insulin-like growth factor 1 (IGF-1) or proteases.

The IPC advised that the requests for ESAs analysis were based on intelligence. Similarly, the requests for analysis of samples with IRMS were a combination of APMU recommendations and the automatic "Suspicious Steroid Profile Confirmation Procedure Requests" that are generated in ADAMS.

Recommendation no. 56-57:

- The IPC should aim to implement in full the TDSSA requirements. Any deviation from these requirements due to e.g., intelligence should be documented and fully justified.
- The IPC should take advantage of the latest analytical techniques in the laboratory and request specific analysis e.g., insulin, proteases, etc. on all or selected sports, based on intelligence.

8.2 Athlete Biological Passport

During the Games the IPC had a process in place to review the results of the ABP steroidal module and implemented a modest ABP haematological program.

The IPC established its own APMU for the Games, consisting of the Ghent laboratory with the task of reviewing ABP haematological and steroidal profiles and guiding the IPC in addressing, in a timely manner, any atypical or suspicious values and profiles.

The ABP haematological program during the Games was limited to athletes from only three sports: IPC athletics (23 samples), para-cycling (18 samples) and para-triathlon (three samples).

In IPC athletics, the review of athletes' ABP haematological profiles assisted the IPC in its testing selections during the Games. However, this was not the case in the other sports, as the IPC APMU only gained access to the athletes' ABP profiles in ADAMS during the Games period.

Unlike the ABP haematological program, the steroidal module covered all sports in the Games' program. The IPC APMU, on a daily basis, reviewed the steroidal profiles of the analyzed urine samples and instructed the IPC to request additional analysis (e.g., IRMS) and/or to follow-up with target testing to collect additional samples for further analysis.

Recommendation no. 58:

- The IPC (and other MEOs) should either be granted full access or actively collaborate with the IFs which have full access to the ADAMS ABP haematological and steroidal profile of those athletes who they are not already the custodian of and are participating in the Paralympic Games (or other major events) in order to be able to target test effectively.

8.3 Adverse Analytical Findings and Anti-Doping Rule Violations

In total, 12 AAFs were reported by the LBCD from samples collected during the period of the Games, of which nine were covered by TUEs, and three were pursued and upheld as ADRVs. For further details, see Appendix 13.4 of this report.

No “non-analytical” ADRVs (e.g., evasion/refusal/failure to submit to sample collection, tampering, possession) were reported at the Games.

8.4 Atypical Findings

During the period of the Games, LBCD reported seven Atypical Findings (ATFs): two for Growth Hormone (GH), collected from the same athlete (the original and a follow-up sample), four for Luteinizing Hormone (LH) and one inconclusive for androstenediol (Adiols) from IRMS analysis.

The IO Team observed that a follow-up, no-advance notice sample was collected from three out of four athletes whose samples produced an ATF for elevated LH, and returned a negative result. Two follow-up tests were conducted on the athlete whose sample returned an ATF for inconclusive Adiols. However, for one athlete whose sample produced an ATF for LH, no follow-up sample was collected as indicated in the respective WADA Guidelines⁴ which were in effect at the time, in order to conclude about the elevated LH since the athlete concerned had left the PLV by the time the IPC received the relevant information. Nevertheless, for none of the four cases of ATFs for LH, as of the date of the publication of this report the IO Team received formal documentation related to the outcomes of these cases.

8.5 Long Term Storage of Samples

The IO Team was originally informed that the IPC requested the transfer of a total of 1342 samples from LBCD to the Swiss Laboratory for doping analysis in Lausanne, Switzerland for long term storage based on risk assessment.) However, the IO Team was later advised that, due to logistical reasons, all urine and serum samples from the Games were shipped to the Swiss Laboratory in Lausanne for long storage.

The IO Team requested from the IPC Anti-Doping team and the IPC ADC the IPC sample retention and reanalysis policy; however, as at the date of the publication of this report, the IO Team has not received such document.

⁴ WADA, Guidelines for Reporting and Management of hCG & LH findings, v 2.0, July 2015

Recommendation no. 59:

- The IPC should develop a sample storage and re-analysis strategy as part of the development of its Test Distribution Plan and publish this strategy, in order to maximize the deterrent effect.

9. Therapeutic Use Exemptions

The IO Team observed the IPC TUE procedure and processes at the Games but did not review the content, medical information and evidence of the TUE files themselves, or how the IPC TUE Committee evaluated the ISTUE criteria for recognizing or granting a TUE as this was not within the scope of the IO mission.

In accordance with the IPC Anti-Doping Code, all athletes participating in the Games are considered to be international-level athletes. Thus, if an athlete participating in the Games had a TUE granted by his/her NADO or IF, he/she had to apply to the IPC to recognize it; and if an athlete had no TUE, he/she had to apply directly to the IPC. Moreover, in accordance with its Anti-Doping Code, the IPC allowed for automatic recognition of TUE decisions (or categories of such decisions, e.g., as to particular substances or methods) made by certain NADOs or IFs listed on the IPC's website.

Based on the above, in practice, three different TUE application processes were applied during the Games, these included:

- For athletes with an existing NADO/IF TUE which were eligible for automatic recognition no review or approval was required;
- For athletes with an existing NADO/IF TUE which were not eligible for automatic recognition a review by the IPC TUE Committee was required; and
- For athletes requiring new TUE during the Games a review by the IPC TUE Committee was required.

All TUE requests (for recognition of an existing TUE or the granting of a new TUE) were reviewed by the IPC TUE Committee, consisting of three physicians appointed by the IPC Medical Committee, who were all members of the standing IPC Medical Committee. Although usually throughout the year, the same three members review all TUEs under the jurisdiction of the IPC, due to the volume of work in the lead up to and during the Games, other members of the IPC Medical Committee were also asked to make up the TUE Committee. In addition, the work of the IPC TUE Committee was supported by an additional member of the IPC Medical Committee, specifically for the duration of the Games.

TUE applications during the period of the Games could be filed either electronically into ADAMS, by email, or in hard copy by depositing into a secure mail box in the PLV Polyclinic. Existing NADO/IF TUEs that were received through ADAMS were approved or recognized in ADAMS whereas for those existing TUEs received in hard copy, a confirmation letter was sent to the athlete's NPC. All new applications processed by the IPC were recorded in ADAMS. The IPC Medical Manager was responsible for all the administration associated with the TUE program and for the liaison with NPCs and IFs.

All TUE requests received during Games-time were reviewed on an expedited basis and, in general, decisions on TUEs were turned around within 24 hours or much earlier in emergency situations. The IPC TUE Committee should be commended for its work during the Games.

In total, during the period of the Games, the IPC dealt with 155 TUE submissions/applications, broken down in the table below:

First Review by IPC TUE Committee	Approved: 34
	Rejected: 1
Automatically recognized by IPC	71
Recognized following IPC TUE Committee Review	25
Not recognized following IPC TUE Committee Review	2
Applications received and not requiring a TUE	21
Cancelled	1
TOTAL Submissions	155

As can be seen from the above table, a number of TUE applications received by the IPC TUE Committee during the Games (21 out of 55; 38.1%) were for substances or methods or routes of administration for which a TUE was not required. In addition, the IO Team became aware of a case of an athlete who was granted a TUE by her NADO for a non-prohibited substance. These figures, in the opinion of the IO Team could be interpreted as a lack of knowledge among athletes and/or their doctors that should be addressed through greater education of the TUE requirements and process.

Recommendation no. 60:

- The IPC, in collaboration with NPCs and IFs, should continue its efforts, to inform athletes and athlete support personnel of the TUE requirements and processes.

During the period of the Games, WADA revealed that hackers had used an IOC-created account for the Rio 2016 Olympic Games to gain access to ADAMS. The hackers then used the website fancybear.net to leak confidential medical records of athletes who had been granted a TUE. The IPC should be commended for promptly reacting to this situation by taking additional measures to minimize the risks of data breach related to athletes and the Games.

Recommendation no. 61:

- The IPC (and other MEOs) should always take measures to minimize the risk of data breaches (and in particular, medical data breaches).

10. Results Management

10.1 Rules and Procedural Guidelines

The rules and expedited hearing procedures for the Games were clearly set out in the IPC Anti-Doping Code.

In practice, the IO Team observed that following the receipt by the IPC of notice of an AAF from the laboratory, the IPC Medical and Scientific Director conducted the review of the AAF that is mandated by 2015 Code Article 7.2 (i.e., looking for an applicable TUE, and/or for any ISTI or ISL departures that could have caused the AAF). If no TUE or material departure

was found, a Notice of Charge, prepared by the IPC Medical and Scientific Director, was delivered by the IPC Medical and Scientific Director himself to the NPC of the athlete concerned.

The Notice of Charge was well drafted, outlining the facts of the case, the applicable rules including the possible consequences and the procedure to be followed. It is worth noting that the aforementioned Notice of Charge was accompanied by comprehensive oral notifications by the IPC of each NPC and the relevant athlete which were conducted promptly in the ordinary course, with hearings listed quickly unless the athlete requested more time. However, in all of the cases observed by the IO Team the Notice of Charge was produced in English only, and there was no independent or professional translator at any of these meetings, instead relying on an NPC delegate to act as impromptu translator. A number of NPC delegates noted that although they had been advised that they could bring a translator, cost was a deterrent.

As already noted, the fairness of the system would be improved if professional translation was available at no cost to the athlete. It is appreciated that in the time available during the expedited processes in place during the Games it may not always be possible to translate the Notice of Charge and the relevant communication letters into the language of the athlete however it is suggested that, where possible, efforts should be made in this respect.

No “non-analytical” ADRVs were reported during the Games. However, the IPC has to be ready to deal with such cases, and have clear process in place for identifying, and the necessary resources available for the management of, such cases, taking into account the different forensic challenges posed. In particular, in “non-analytical” ADRVs often the evidence consists mainly of witness testimony, with factual disputes between the witnesses and the athlete and the decision as to whether there is sufficient basis to bring the case forward may not be straightforward.

Recommendation no. 62-65:

- The IPC should consider providing, or assisting the athletes to obtain independent or professional translation during the initial meetings and of the Notice of Charge at least during the Paralympic Games. In this respect, the IPC should consider the use of translators provided by the LOC (and/or otherwise, including remote interpretation services).
- The IPC should consider producing a document outlining the results management rules and procedures applicable during the Paralympic Games, in several languages, to assist athletes and their support personnel become knowledgeable of and comply with the provisions of the IPC Anti-Doping Code. This could comprise a simplified visual resource which could also be provided with the notification letter to help NPCs understand the process better in advance given the legal language unavoidably required in the letters.
- The IPC should ensure that it has sufficient legal resources (both on its hearing panels and in its staff) with specific anti-doping experience available at future Paralympic Games to deal with a potentially higher and/or more complex caseload potentially involving forensic and/or other challenges that might arise.
- The IPC should have a clear process in place for identifying potential non-analytical ADRVs and bringing them forward to the IPC hearing body for decision.

10.2

10.3 Hearing and Appeal Bodies

Article 8.1.1 of the IPC Anti-Doping Code provides that the hearing body “will normally comprise of no less than three persons who may be members of the IPC ADC or other persons authorized by the IPC” and requires the hearing body to be “fair and impartial towards all parties at all times”. Additionally, in accordance with Article 13.2.1 of the IPC Anti-Doping Code, in cases arising from participation in an international event, including the Games, the decision may be appealed exclusively to the Court of Arbitration for Sport (CAS).

The IO Team observed the hearing of all cases of potential ADRVs during the Games and in all of the cases the hearing body was comprised of IPC ADC members. The IO Team is of the opinion that the IPC hearing body in all of the cases observed was of a high-quality featuring members with a broad range of experience and expertise who were well capable of managing hearings appropriately (which were sometimes complicated due to lack of professional translation, as noted) and producing comprehensive written decisions in short time in keeping with the expedited nature of the Games procedures. However, without in any way intending to comment on the individual hearing body members for this purpose whose personal qualities and integrity were beyond question, it was apparent that some members of hearing bodies perform other roles as members of the IPC ADC which may give rise to a perceived or actual conflict of interest. This includes members who have sight of and/or input into test distribution, are present in DCSs in a high-level supervisory role and/or provide advice to IPC staff and/or perform initial reviews of cases. It is noted that this was also an observation in the IO Report from the London 2012 and the Sochi 2014 Paralympic Games. Consideration would be appropriate in relation to the creation of an independent judicial committee separate from the IPC ADC, comprising of a panel of independent persons who sit on hearings, to ensure it is distinct from those individuals who have involvement in the operational planning/delivery of testing. This may not require many more people than presently at the IPC’s disposal as relevant members of the ADC could simply transfer to the judicial committee. The judicial committee could then be temporarily expanded at each edition of the Paralympic Games (on an ad hoc basis) to ensure sufficient numbers of independent judicial personnel for the caseload at Paralympic Games time (presuming there is no need for an expanded judicial committee on a permanent basis for IPC hearings in between Paralympic Games).

It was also observed that in the ordinary run of cases, the initial or preliminary review of an AAF was conducted by the IPC Medical and Scientific Director and/or his staff. It is recommended for transparency that these reviews should be conducted as a matter of course by an independent judicial committee member in all cases and not just those cases where it appears there is no violation and the case will not proceed. However, there are two important points: (i) If the Chair conducts the initial review and confirms there may be a violation and the case proceeds to a hearing, the Chair would be conflicted in relation to appointing the hearing body members (or sitting on that hearing). Accordingly, members of the independent judicial committee other than the Chair should conduct these reviews (and then take no further role in the case); and (ii) In cases where the initial review indicates that there is no case to answer (for example, a permitted route of administration is evident) it may be advisable to ensure total transparency and independence that in such circumstances a panel of two or more members formalise that review and decision not to proceed with a case.

Recommendation no. 66-68:

- The IPC should consider creating an independent judicial committee separate from the IPC ADC and ensure that the persons who sit on hearings are distinct from those individuals who have involvement in the operational planning/delivery of testing. This is not due to any actual conflict of interest observed or concern with respect to individuals in a particular case (who, it is noted, are experienced anti-doping practitioners) but rather to protect against the potential for an athlete to allege, as a minimum, a potential perception of conflict of interest and/or bias due to involvement in another capacity in relation to a particular Doping Control, operational delivery and/or test planning more broadly.
- The IPC should consider establishing a doping review panel consisting of a Chair and two or more members with experience in anti-doping to perform the initial or preliminary review of potential ADRVs referred to them by the IPC Medical and Scientific Director, including AAFs, Atypical Findings, Atypical Passport Findings and Adverse Passport Findings.
- The IPC must ensure that, at all time, the persons who sit on hearings are appointed on the basis that they are in a position to hear the cases (and, equally as importantly, be perceived to do so) fairly and impartially and shall have had no prior involvement with the case including at the operational phase.

10.4 Jurisdiction

It was noted that since the 2012 Paralympic Games, the IPC Anti-Doping Code had been amended to give the IPC hearing body full jurisdiction to impose its decision, rather than having to have that decision approved by the IPC Governing Board, as recommended by the WADA IO Team in its report after the London 2012 Paralympic Games, which is a commendable development.

In accordance with Article 20.3.7 of the IPC Anti-Doping Code, in those cases for which the IPC is not the IF for the athlete's or other person's sport, results management conducted in connection with the Paralympic Games shall only determine if a period of ineligibility is to be imposed. The consequences of ADRVs over and above those relating to the Paralympic Games shall be managed by the relevant IF.

The IO Team observed one case during the Games where the IPC is not the IF for the athlete concerned and thus does not have jurisdiction to impose the final sanction. As a result of this, the athlete is effectively subjected to another process before a different body on behalf of the athlete's IF.

10.5 Hearings

The IO Team observed the four hearings which were convened in relation to potential ADRVs during the Games⁵.

The hearings themselves were well managed and structured by the respective hearing body chairs. The hearing body members asked appropriate questions of the parties in a fair, non-intimidating manner (as did the IPC) and produced well-reasoned written decisions in relatively short time. It was also noted that the written submissions of the IPC prepared at

⁵ In addition to the three cases of AAFs that were pursued and upheld as ADRVs from the period during the Games (see paragraph 8.3 Adverse Analytical Findings and Anti-Doping Rule Violations) the IPC ADC convened a hearing for a case of an AAF referred to it by the Regional Anti-Doping Organization of the athlete concerned that was pending prior to the Games.

short notice were helpful and assisted the structure of the hearings in order to focus on the central issues. Without the benefit of a professional translator, however, it was unclear how much of these submissions were understood by the athlete and his NPC (see further below in this respect). The two hearing venues were well appointed and adequate for hearings of this nature, particularly for the protection of privacy.

The timelines for the expedited resolution of cases were observed by virtue of the IPC's efficient Games-time results management operations; however, on occasion there were delays due to external factors (for example, in one case, delays and inefficiencies by another ADO in processing results management from a pre-Games AAF led to a hearing being unavoidably held on the eve of the athlete's competition, the IPC having been forced to assume jurisdiction at short notice).

However, in the opinion of the IO Team there were two areas in particular which it became apparent were recurring themes in hearings which may benefit from review in advance of the next Paralympic Games:

a) Independent/Professional Translation

The IPC Code Article 8.1.3 puts translation at the athlete's expense. More than one athlete and NPC cited financial limitations as a reason why neither the athlete nor the athlete's NPC could provide an independent, professional translator and, in fact, there was no professional translation at any of the hearings during the Games. It is understood that this financial deterrent would be an issue for many members of the IPC athlete population. However, the ability of the athlete to understand the charges and evidence against him and to have the best opportunity to present his own submissions and evidence appropriately in order to defend his position adequately is central to natural justice.

Only one of the athletes who appeared at a hearing was fluent in English, the language in which all hearings (and pre-hearing meetings) were conducted. In some hearings (and meetings) the English limitations of the chef de mission or other unofficial NPC translator meant that the athlete did not appear to be able to understand all of the details of the process and what was required of him. In one case an individual from another national delegation was used as a translator, raising its own confidentiality issues. In another case it may have led to an athlete requesting a hearing in circumstances where he and his NPC appeared to be confused between Games disqualification and the sanctions hearing which would be held later by his International Federation (the jurisdictional issue in such cases and potential for confusion and duplication has also been commented on in paragraph 10.3 above).

Recommendation no. 69:

- The IPC should consider amending Article 8.1.3 of the IPC Anti-Doping Code such that the IPC arranges for professional translation to be available at pre-hearing meetings and hearings where requested by an athlete or where it appears necessary at least during the Paralympic Games. Alternatively, the IPC could simply do this in practice and not invoice the athlete without amending Article 8.1.3. If cost is an issue it may be an option to provide this translation remotely via telephone which would be preferable to not having professional translation at all.

b) Education

In every hearing that the IO Team observed it became apparent that the athlete had received relatively little (or no) anti-doping education prior to testing positive. Additionally,

the IPC does not appear to have records of delivery of education to individual athletes either by the IPC itself or the athlete's IF or NPC. Accordingly, when an athlete attends a hearing the only evidence of what education he or she has received is his/her own word. This hampers enforcement proceedings and the assessment of the athlete's degree of fault in the event of ADRVs based on which the appropriate sanctions are imposed. Additionally, it makes it difficult to assess the effectiveness of the prevention efforts the IPC and the athlete's NPC and IF have in place.

For more comments and recommendations about education see paragraph 11.

10.6 Publication of Sanctions

In accordance with the IPC Anti-Doping Code, the IPC issued press releases confirming the sanctions issued in short order following the expiry of the appeal deadline. However, as at 27 January 2017, the list of suspended athletes on the IPC website did not appear to have been updated to include those from the Games.

Further, the actual written decisions themselves do not appear to be published either with the press release or through a link from that online list. Given that the decisions are comprehensive and well-reasoned it may be helpful for full transparency to publish the decisions in their entirety for the purposes of media and public understanding and so they can form part of the broader anti-doping jurisprudence and be used as precedents by other Anti-Doping Organizations.

Recommendation no. 70-71:

- The IPC should ensure the timely publication of all decisions imposing sanctions under its jurisdiction, including the Games period, in respect of ADRVs, in accordance with the IPC Anti-Doping Code.
- The IPC should consider publishing the reasoned decision in respect of ADRVs –in addition to the information required by the IPC Anti-Doping Code – so they can form part of the broader anti-doping jurisprudence and be used as precedents by other ADOs.

11. Education

The IO Team considers the Games as an opportunity for the IPC as well as LOC to provide educational material for anti-doping to athletes and athlete support personnel. However, in Rio, there was only a poster in the waiting area of the DCSs describing the doping control process, prepared by the Rio 2016 Anti-Doping team. When the IO Team raised this issue, the Rio 2016 Anti-Doping team explained that the relevant resources were directed to other areas of the anti-doping program.

As already mentioned in other parts of this report, on several occasions, athletes were not aware of their rights and responsibilities during doping control. Moreover, in every hearing that the IO Team observed it became apparent that the athlete had received relatively little or no anti-doping education prior to their participation at the Games. Clearly the size of the athlete population and diverse resources and languages of NPCs and IFs (and the IPC itself) is a challenge. However, it is suggested that an online, mobile-compatible education system (with completion records kept and linked to the IPC's athlete database), possibly based on or using existing WADA e-learning programs in relevant languages be considered. There may be a possibility to link completion to the accreditation process so that the education must be completed prior to an accreditation being issued to an athlete or an

athlete support personnel to ensure the education is received. It is suggested that this (or a similar system using technology) could be trialed as a pilot project at an IPC World Championship for one sport and then, if successful and with whatever amendments may be required, it could be implemented for the next edition of the Paralympic Games and other events in future. This would at least ensure that athletes could not repeatedly participate in major events without ever (seemingly) receiving any education as was attested to by certain athletes in hearings and/or sample collection.

It is also noted that under the Preamble to the IPC Code athletes (at least) are only eligible for an IPC License to participate in an IPC Event after signing the IPC Eligibility Code. This document may provide another opportunity to include links to anti-doping education and to obtain signed confirmation from the athlete that he or she has accessed that education.

Separately, consideration may also be worthy of whether IPC Code Article 20.2.12 (the obligation to promote anti-doping education) is being properly complied with by all NPCs and, if not, what action should be taken, including possible sanctions.

Recommendation no. 72-75:

- The IPC should consider developing anti-doping educational material for athletes with impairments which can be used during the Paralympic Games and other similar events and also be made available on its website.
- The IPC should consider co-branding educational material with the LOC of future Paralympic Games.
- The IPC should consider developing an online, mobile-compatible education system (with completion records kept and linked to the IPC's athlete database), possibly based on or using existing WADA e-learning programs in relevant languages, available for all Paralympic athletes and their support personnel. Moreover, the IPC should consider the possibility to link completion of the online education to the accreditation process for participation at the Paralympic Games.
- The IPC should consider evaluating the implementation of Article 20.2.12 of its Anti-Doping Code and, if needed, to take appropriate measures towards its implementation.

12. Appendices

12.1 WADA IO Team Members

WADA IO TEAM MEMBERS, RIO PARALYMPIC GAMES			
Role	Name	Position	Nationality
Chair	Michael Petrou	President, Cyprus Anti-Doping Authority	Cyprus
Vice Chair	George Tsamis	Manager, Standards and Harmonization, WADA	Greece
Team Manager	Ying Cui	Manager, Standards and Harmonization, WADA	Canada/China
Member	Ben Rutherford	Senior Legal Counsel & Integrity Unit Manager, World Rugby	Australia
Member	Pablo Squella ⁶	Director, National Anti-Doping Agency	Chile

⁶ Mr. Pablo Squella as of November 2016 is the Minister for Sport of Chile.

12.2 Summary of Testing (based on ADAMS Data as of 17 February 2017)

Date	In Competition	Out-of-Competition	Total Tests
1/9/2016	-	27	27
2/9/2016	-	35	35
3/9/2016	-	61	61
4/9/2016	-	86	86
5/9/2016	-	78	78
6/9/2016	-	86	86
7/9/2016	-	31	31
8/9/2016	65	39	104
9/9/2016	98	44	142
10/9/2016	97	28	125
11/9/2016	95	7	102
12/9/2016	69	9	78
13/9/2016	64	5	69
14/9/2016	66	5	71
15/9/2016	72	-	72
16/9/2016	62	-	62
17/9/2016	69	2	71
18/9/2016	20	-	20
Total	777	543	1320

12.3 Number of Tests by Sport

Sportⁱ	ICⁱⁱ	OOCⁱⁱⁱ	Total Tests
IPC Athletics	232	231	463
IPC Powerlifting	100	186	286
IPC Swimming	82	19	101
Para-Cycling	61	38	99
Para-Judo	39	23	62
Wheelchair Basketball	50	2	52
Para-Canoe Sprint	18	20	38
Para-Triathlon	18	10	28
Para-Rowing	16	10	26
Sitting Volleyball	24	2	26
IPC Shooting	19	2	21
Para-Table Tennis	16	-	16
Para-Archery	14	-	14
Football 7-a-Side	14	-	14
Goalball	14	-	14
Wheelchair Rugby	14	-	14
Wheelchair Tennis	12	-	12
Wheelchair Fencing	10	-	10
Football 5-a-Side	10	-	10
Para-Sailing	6	-	6
Para-Boccia	4	-	4
Para-Equestrian	4	-	4
Total Tests	777	543	1320

ⁱ Adapted to Paralympic sports based on ADAMS sport codes.
ⁱⁱ IC refers to in-competition
ⁱⁱⁱ OOC refers to out-of-competition

12.4 Number of Samples by Sport

Sport ⁱ	Total Samples	Urine	Blood	Blood passport
IPC Athletics	581	497	61	23
IPC Powerlifting	417	305	112	-
Para-Cycling	150	103	29	18
IPC Swimming	111	103	8	-
Para-Judo	69	64	5	-
Wheelchair Basketball	56	56	-	-
Para-Canoe Sprint	53	41	11	1
Para-Triathlon	41	28	10	3
Para-Rowing	33	27	6	-
Sitting Volleyball	26	26	-	-
IPC Shooting	22	22	-	-
Para-Table Tennis	16	16	-	-
Para-Archery	15	15	-	-
Football 7-a-Side	15	15	-	-
Goalball	15	15	-	-
Wheelchair Rugby	14	14	-	-
Wheelchair Tennis	12	12	-	-
Wheelchair Fencing	11	11	-	-
Football 5-a-Side	10	10	-	-
Para-Sailing	6	6	-	-
Para-Boccia	4	4	-	-
Para-Equestrian	4	4	-	-
Total Samples	1681	1394	242	45
ⁱ Adapted to Paralympic sports based on ADAMS sport codes.				

Remark:

According to article 5.2 of TDSSA: One Test includes any number of Samples that may be collected from one Athlete during a single Sample Collection Session.

12.5 AAFs and Outcomes from the Games Period (as of 17 February 2017)

No	Sample Collection Date	Sport ⁱ	Substances	Athlete Gender	Test Type	Sample Type	Outcomes	Sanction Details
1	4/9/2016	IPC Powerlifting	Metenolone	Male	OOO	Urine	ADRV	8 years Ineligibility
2	8/9/2016	Para-Judo	Clomiphene	Male	OOO	Urine	ADRV	2 years Ineligibility
3	8/9/2016	IPC Athletics	The GC/C/IRMS result for 19-Norandrosterone is consistent with an exogenous origin	Male	OOO	Urine	ADRV	4 years Ineligibility
4	9/9/2016	IPC Athletics	Hydrochlorothiazide	Male	IC	Urine	TUE	N/A
5	9/9/2016	Para-Judo	Triamcinolone Acetonide	Female	IC	Urine	Injection of substance via permitted route. No TUE required.	N/A
6	10/9/2016	IPC Athletics	Hydrochlorothiazide	Female	OOO	Urine	TUE	N/A
7	11/9/2016	IPC Shooting	Methadone	Male	IC	Urine	TUE	N/A
8	11/9/2016	Para-Rowing	Methadone	Female	IC	Urine	TUE	N/A
9	12/9/2016	Wheelchair Basketball	Methadone	Female	IC	Urine	TUE	N/A
10	15/9/2016	IPC Swimming	The GC/C/IRMS result for Testosterone (T) and at least one of the Adiol (5aAdiol and/or 5bAdiol) is consistent with an exogenous origin; The GC/C/IRMS result for 5a-androstane-3a,17b-diol (5aAdiol) and 5b-androstane-3a,17b-diol (5bAdiol) is consistent with an exogenous origin; The GC/C/IRMS result for Androsterone (A) is consistent with an exogenous origin; The GC/C/IRMS result for Etiocholanone (Etio) is consistent with an exogenous origin	Male	IC	Urine	TUE	N/A
11	16/9/2016	Para-Cycling Road	Tibolone	Female	IC	Urine	TUE	N/A
12	17/9/2016	Para-Sailing	Methadone	Male	IC	Urine	TUE	N/A

ⁱ Adapted to Paralympic sports based on ADAMS sport codes.

ⁱⁱ Sanction imposed by the International Blind Sports Federation (IBSA)

Abbreviations: ADRV: Anti-Doping Rule Violation; IC: in-competition; OOO: out-of-competition; TUE: Therapeutic Use Exemption