

REPORT OF THE

INDEPENDENT OBSERVERS

XXIII OLYMPIC WINTER GAMES
PYEONGCHANG 2018



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We also formally record our appreciation for the incredible practical assistance we received from the various Games' volunteers who facilitated our passage and access to the events and facilities. Special thanks to the drivers whose patience and enthusiasm made our job so much easier.

2. Acronyms and abbreviations

2015 World Anti-Doping Code	2015 Code
Adverse Analytical Finding	AAF
Anti-Doping Administration and Management System	ADAMS
Anti-Doping Division of the Court of Arbitration for Sport	ADD-CAS
Anti-Doping Organization	ADO
Anti-Doping Rule Violation	ADRV
Athlete Biological Passport	ABP
Athlete Passport Management Unit	APMU
Blood Collection Officer	BCO
Court of Arbitration for Sport	CAS
Doping Control Chaperones	Chaperones
Doping Control Officer	DCO
Doping-Free Sport Unit	DFSU
Doping Control Command Center	DCCC
Doping Control Station	DCS
Doping Control Station Manager	DCSM
Erythropoiesis Stimulating Agent	ESA
External Quality Assessment Scheme	EQAS
Gate Management System	GMS
Global Association of International Sports Federations	GAISF
Gonadotropin-releasing hormone	GnRH
Growth Hormone	GH
Growth Hormone Releasing Factor	GHRF
Growth Hormone Releasing Peptide	GHRP
Homologous Blood Transfusion	HBT
Human Growth Hormone	hGH
In-Competition Test	IC Test
International Doping Control Officer	IDCO
International Federation	IF
International Olympic Committee	IOC
International Standard for Laboratories	ISL
International Standard for Testing and Investigations	ISTI
International Testing Agency	ITA
IOC Anti-Doping Rules applicable to the Olympic Winter Games PyeongChang 2018	IOC ADR
Isotope-Ratio Mass Spectrometry	IRMS
Korea Anti-Doping Agency	KADA
Local Organizing Committee	LOC
Major Event Organization	MEO
Minimum Level of Analysis	MLA
National Anti-Doping Organization	NADO
National Olympic Committee	NOC
Olympic Identity and Accreditation Card	OIAC
Out-of-Competition Test	OOC Test
Pre-Games Intelligence Taskforce	Intel TF
PyeongChang Organizing Committee for the 2018 Olympic and Paralympic Winter Games	POCOG
Registered Testing Pool	RTP
Results Management	RM
Technical Document for Sport Specific Analysis	TDSSA
Test Distribution Plan	TDP
Therapeutic Use Exemption	TUE
Therapeutic Use Exemption Committee	TUEC
WADA Independent Observer Team	IO Team
World Anti-Doping Agency	WADA

3. Executive summary

Challenging times

Like most Olympic Games, the Games of the XXIII Olympiad PyeongChang 2018 (the Games) presented some unique challenges and opportunities from a doping control perspective. These were the first Winter Olympic Games since the revelations of institutionalized Russian doping and process manipulation at the 2014 Winter Games in Sochi. It was predictable that suspicion around the integrity of the anti-doping activities would be prevalent. This suspicion was highly manifested at the start of the Games and residual suspicion by some athletes and teams lingered throughout the Games Period.

A second challenge involved the fact that the Games took place during the transitional phase towards implementation of the International Testing Agency (ITA) – a new anti-doping service provider to which the International Olympic Committee (IOC) intends to outsource most of its anti-doping responsibilities during the Games. Given that the development of the ITA's infrastructure, processes and operating methodology is still in its infancy, it is a credit to the IOC and the staff of the Doping-Free Sport Unit (DFSU) of the Global Association of International Sports Federations (GAISF) that communications, as well as problem identification and resolution, were generally well handled. A significant risk existed considering that specific roles and responsibilities remained largely undefined just a few weeks out from the start of the Games. There is little doubt that the ITA will benefit from the learnings of the PyeongChang experience.

The WADA Independent Observer Team (IO Team) was impressed by the open and active engagement we received on the ground from anti-doping stakeholders including the IOC, the GAISF DFSU and the Doping Control Team of the PyeongChang Organizing Committee for the 2018 Olympic and Paralympic Winter Games (POCOG). Daily meetings between these groups, which were attended by members of the IO Team, facilitated our understanding of the doping control-related challenges being faced and proved a useful forum in which we could raise and make recommendations concerning emerging issues. The IO Team appreciated the efforts made by the relevant stakeholders to address the issues raised. In addition, the IO Team noted with satisfaction that a significant number of recommendations made in the 2016 Rio Summer Olympic Games IO Report which were relevant to these 2018 Games had been implemented by the IOC, POCOG and WADA respectively, prior to the opening ceremony.

Knowledge transfer

It is expected that the next Olympic Games in 2020 in Tokyo will see the ITA in a much more prominent role. If that is the case, it will be important that the IOC uses its considerable influence to ensure that the ITA is successful in carrying out its functions. The IOC, as the 'owner' of the Games and the Signatory to the World Anti-Doping Code (Code), should ensure that it, the ITA, the host country National Anti-Doping Organization (NADO) and the Local Organizing Committee (LOC) commit to the early development and implementation of agreed recommendations through a mechanism similar to the Expert Pre-Games Taskforce established for PyeongChang. Transfer of doping control knowledge and experience via this mechanism should lead to continuous improvement as well as consistency of approach from one edition of the Olympic Games to the next. Unfortunately, in the lead-up to these Games, some of the Expert Pre-Games Taskforce's recommendations were not implemented by POCOG.

Harnessing the intelligence dividend

Building on the success and lessons learned from the Rio Pre-Games Intelligence Taskforce (Intel TF), which was responsible for ensuring that NADO and International Federation (IF) testing programs were coordinated in the lead-up to the Games, the IOC, in collaboration with the World Anti-Doping Agency (WADA), put in place a similar Intel TF ahead of the Games. The Intel TF conducted specific risk assessments at the sport, discipline, country and athlete level and issued over 2,800 testing recommendations. Ultimately, approximately 80% of these testing recommendations were acted upon by NADOs and IFs. Ahead of the Rio 2016 Games, approximately 60% of the recommendations had been implemented. While the Rio 2016 Intel TF operated for a shorter period of time, the work accomplished ahead of PyeongChang demonstrated progress. The concept of the Pre-Games Intel TF has now been well proven and establishment of an Intel TF should be a central feature of planning for future Games. A review should be conducted to examine aspects of

the Intel TF such as membership, longevity, role of the LOC and knowledge transfer between the Intel TF and the LOC.

Providing the POCOG Doping Control Team staff access to the Gate Management System (GMS), which indicated when athletes entered Olympic venues, was a new and beneficial initiative in PyeongChang. Determining the exact location of athletes for testing notification has been a recurrent problem at successive Games and this initiative is a good step forward. Consideration should be given to refining the electronic infrastructure and the rights of access, and ensuring that the Games Doping Control Command Center (DCCC) has the capacity and expertise to capitalize on the intelligence which can be gleaned through this technology. Indeed, at the Games, the DCCC operated in a less than optimal way. It was not staffed sufficiently and did not have the presence of enough suitably qualified personnel for it to act as the central hub or 'brain' of the doping control apparatus. Ideally, it should have been the 'go-to-place' for day-to-day operational planning and intelligence analysis. It also should have served as a source of briefing material and the latest intelligence for the POCOG staff that attended the daily meetings and acted as a 'hub and spokes' to disseminate consistent and up-to-date advice and direction to the various Doping Control Stations (DCSs).

Another element which was missing was an active and advertised mechanism for athletes, athlete support personnel or others to report possible doping or suspicious behavior. Greater use of technology such as WADA's 'Speak Up!' reporting platform, coupled with means by which individuals could confide in someone anonymously or otherwise, could have been a useful input to the DCCC so that potential non-analytical Anti-Doping Rule Violations (ADRVs) could be identified, investigated and, where necessary, acted upon.

Sample collection challenges

A major challenge encountered during the Games related to the questions surrounding the physical integrity of the sample collection kits used in PyeongChang. Following concerns raised a few days prior to the Games in relation to the closing mechanism of the sample collection kits that were due to be used at the Games (the 'Geneva' model of Berlinger kits) – and that were subsequently replaced in time for the Games – misinformation and suspicion caused some anxiety and often frustration with athletes and their support personnel. It was often the case that doping control staff, and even the IO Team members, were placed in a position of dealing with questions regarding the security features of the sample collection kits, in particular the security of the bottles being used. Regrettably, this tense atmosphere unnecessarily complicated the work of the doping control personnel.

In terms of the processes which occurred at the various Doping Control Stations (DCSs), the IO Team was generally satisfied with the efficient, effective and professional manner with which the POCOG staff and volunteers conducted themselves. The stations themselves were found to be adequate, clean, well equipped and maintained. The IO Team observed some inconsistencies in the approaches taken across the different DCSs during the startup phase, partly due to the recall of the 'Geneva Kits'. However, after this initial 'teething' period, the POCOG Doping Control Team ensured there was greater consistency across the DCS network.

The role played by the International Doping Control Officers (IDCOs) was seen as a critical success factor, particularly in terms of problem solving, language difficulties and general knowledge transfer to local staff. Consideration should be given to ways in which to incentivize and better reward the IDCOs for their work, which proved vital in the overall smooth management of the DCSs. Consideration could also be given to appointment of IDCOs as Deputy DCS Managers (DCSMs) if, as with these Games, local staff are appointed as the DCSMs.

In relation to Doping Control Chaperones (chaperones), the IO Team commends the enthusiasm that they brought to their role and visibly noted their growing competence and confidence as the Games progressed. It is noted that more than 500 chaperones attended a two-day workshop approximately six months prior to the Games and arrived for some additional training only a couple of days before the Games started. Consideration should be given to the selection and training of chaperones, particularly in language proficiency, as in the early days there were several incidents around athlete notification which created some confusion and misunderstanding. The involvement of IDCOs in the notification procedures at some stations, coupled with ongoing training via the DCS staff, assisted in alleviating this issue. This is particularly important given the notification of an athlete by a chaperone is essentially the first point of contact for the overall procedure and a successful first encounter can largely determine the mood of the engagement.

Athlete support personnel

Much of the engagement between athletes and doping control staff is influenced heavily by the impressions, opinions and demeanor of accompanying athlete support personnel. These personnel play an essential role in the athletes' experience with the doping control program and they were mostly found to be supportive of the fight for clean sport. Unfortunately, particularly in the early days, some athlete support personnel acted in a manner which exacerbated friction, misunderstandings and tension.

On more than one occasion, the IOC's involvement in initiating specific discussions with particular delegations or individuals proved highly beneficial in terms of resolving issues and defining expectations. It is considered that additional specific pre-Games' briefings, particularly around Games rules and protocols and highlighting any changes from previous Games or protocols, to athlete support personnel who will accompany their athletes in DCSs, would be a useful way to discuss and clarify issues prior to the processes beginning.

Sample security and analysis

Sample transportation was monitored from collection at various DCSs through to the WADA-accredited laboratory in Seoul. Each transfer of the samples was recorded in the chain of custody and the security arrangements during transportation were observed to be generally robust. The system involved three daily shipments to the laboratory, which assisted the laboratory to efficiently allocate resources at the proper times.

Security at the WADA-accredited laboratory in Seoul was based on a multi-level approach featuring restricted access in which each vehicle and individual entering the campus was recorded and documented. Access to the laboratory itself included an electronic card key and biometric access system. Further, each analytical area required the presentation of the e-keycard and fingerprint to enter and exit. Security guards and the presence of 24-hour closed-circuit television (CCTV) cameras enhanced the integrity of sample reception, processing and storage.

Laboratory operations

Laboratory operations were conducted satisfactorily, in accordance with the International Standard for Laboratories (ISL), and included a significant effort from the Seoul laboratory to enhance and expand their scientific expertise, procedures, instrumentation and methodologies to meet the requirement of the Games' anti-doping program. Scrutiny of procedures within the laboratory indicated a professional and efficient approach compliant with technical requirements. The laboratory's system to record sample non-conformities to the IOC/GAISF DFSU was structured and comprehensive. The presence and roles of four directors of other WADA-accredited laboratories, who were appointed by the IOC and who reported to the GAISF DFSU as experts in the laboratory during the Games testing period, is a matter which warrants further consideration; however the IO Team wishes to make it clear that it did not observe any undue interference from the IOC or the DFSU in the conduct of the analyses. The laboratory is commended for its efficiency and effectiveness in managing the volume of samples to be analyzed and turnaround expectations presented by an event of this magnitude.

Therapeutic Use Exemptions

The management of Therapeutic Use Exemptions (TUEs) was seen as an example for future Games to follow. In particular, the proactive stance adopted by the TUE Committee (TUEC) included review of all existing TUEs, careful analysis of new applications and review of all Doping Control Forms (DCFs) submitted. Additional intelligence was gained by the TUEC through examination of substance declarations submitted by teams upon arrival in South Korea. This proactive, intelligence-driven approach is to be commended.

Results management

The Results Management (RM) for potential ADRVs that arose during the Games was generally conducted in an efficient manner, despite some significant information technology challenges. The Anti-Doping Division of the Court of Arbitration for Sport (ADD-CAS) that was put in place as the first instance level of adjudication for the Games was able to handle cases promptly and effectively. The IO Team is of the view that all of the cases were handled fairly and that the parties to each case were provided with reasonable deadlines to make submissions and with the opportunity to be heard promptly.

For the first time since the IOC's decision to use the ADD-CAS at the 2016 Rio Olympic Games, the relevant IF was allowed to join the proceedings as a co-applicant with respect to the period of ineligibility to be imposed on the athlete if the IOC was successful in establishing the ADRV earlier in the first stage of the proceedings. The IO Team recognizes that having the IF join the proceedings as a co-applicant can have benefits from an efficiency perspective and would encourage the Court of Arbitration for Sport (CAS) to ensure that the applicable procedural rules are clarified for the next Games should it be decided to continue with this format.

Conclusion

In conclusion, despite a number of issues and challenges highlighted in the following pages, overall the IO Team was satisfied with the end-to-end doping control arrangements put in place for the Games and congratulates the IOC, the GAISF DFSU, POCOG, the Korea Anti-Doping Agency (KADA), the WADA-accredited Seoul laboratory, CAS and the other stakeholders involved on the considerable investments, efforts and opportunities that were seized upon to protect clean sport. The IO Team thanks the IOC, GAISF DFSU, POCOG, KADA, CAS, doping control personnel, laboratory staff and the many volunteers who gave us their time and their insights to help us shape this report.

4. Mandate, role and functions of the WADA IO Team

Independent scrutiny of the end-to-end doping control and result management processes of a Major Event such as the Games is designed to enhance athlete and public confidence in those processes. The IO Program itself is an integral element of the Code and is an important vehicle for WADA in the constant identification and pursuit of best practice. Continuous improvement can only be achieved through ongoing learning and experience.

The Games Period for doping control was from 1 to 25 February 2018, with the IO Team represented in PyeongChang from the start of the Games Period. Active observations of the doping control procedures commenced on 8 February following the official opening of the Games on 7 February while laboratory monitoring began on 1 February. The IO Team was well supported in terms of being able to access, observe and report upon a broad spectrum of anti-doping activities and processes. These included but were not limited to:

- Test distribution planning and athlete selection methodology;
- Information and intelligence workflows;
- DCS facilities, equipment and doping control documentation;
- Sample collection;
- Sample storage, transportation and chain of custody;
- Management and analysis of samples at the WADA-accredited Seoul laboratory;
- Use of the Anti-Doping Administration and Management System (ADAMS);
- Anti-Doping Taskforce, IOC Medical Commission and other relevant meetings;
- Review of DCFs and laboratory analysis documentation; and
- RM processes and ADD-CAS proceedings.

The IO Team was represented (normally by the Chair and/or Vice Chair) at daily meetings with representatives from the IOC, GAISF DFSU (which chaired the meetings), POCOG and KADA where anti-doping program matters were discussed in an open and transparent way. Issues raised by the IO Team were the subject of specific discussion and all attendees worked cooperatively to address issues on a real-time basis. This collaborative forum enabled emerging issues to be addressed quickly and effectively rather than fester and continue, potentially to the detriment of the Games doping control program. A living list of IO Team recommendations and IOC/GAISF DFSU/POCOG responses was maintained and regularly addressed in support of a 'no surprise' approach proposed by the IO Team. The IO Team was most appreciative of the welcoming and professional approach adopted by the IOC, GAISF and POCOG during these interactions.

This particular IO mission marked completion of approximately 50 WADA IO missions dating back to the first, which was conducted at the 2000 Sydney Summer Olympic Games. Many of the resultant IO Reports feature common, persistent themes, which continue to hamper the efficiency and effectiveness of the anti-doping programs of Major Events. Therefore, the first recommendation of this IO Report is that WADA conduct a comprehensive review of all IO Reports thus far compiled, with a view to bringing focus and attention to those issues, which are identified in successive reports.

WADA Recommendation no. 1

Initiate a comprehensive review of the approximately 50 IO Reports for Major Events conducted since 2000 with a view to focus attention on the most significant repetitive issues arising. The review should also make recommendations as to the most effective mechanisms for ensuring due consideration of IO Report recommendations and, where deemed appropriate, ensuring their adoption.

4.1 IO Team membership

The multi-national, multi-discipline makeup of the IO Team was beneficial in enabling specialist skills and experience to be brought to particular issues.

The IO Team was composed of the following members:

Ben McDEVITT (Chair) –

Former Chief Executive Officer, Australian Sports Anti-Doping Authority (ASADA) – Australia

Frédéric DONZÉ (Vice Chair) –

Chief Operating Officer, WADA – Switzerland

Osquel BARROSO –

Science and Medicine Deputy Director, WADA – Cuba/Italy*

Ilaria BAUDO (Team Manager) –

Standards and Harmonization Manager, WADA – Italy

Thierry BOGHOSIAN –

Laboratory Accreditation Senior Manager, WADA – USA**

Zhiyu CHEN –

Executive Director General, China Anti-Doping Agency (CHINADA) – China

Karine HENRIE –

Standards and Harmonization Manager, WADA – Canada*

Adam KLEVINAS –

Legal Affairs Senior Manager, WADA – Canada**

Dominique LEROUX –

Head of Legal Anti-Doping Services, International Cycling Union (UCI) – Canada/Switzerland

Kadidiatou TOUNKARA –

Retired athlete and member of WADA Education Committee – Mali

*First part of the Games

**Second part of the Games

4.2 The IO as auditor, umpire and confidant

Much of the early work of the IO Team was, as would be expected, conducted by physically attending the various sporting venues and observing the sample collection processes in real time. What became apparent very quickly in PyeongChang was that many of the 'observation' sessions involved IO Team members playing a more active role than initially contemplated. Examples relayed by the team members included:

- An observer feeling obliged to intervene between a rather passive DCO and a particularly aggressive athlete support person whose behavior bordered on bullying;
- Observers finding themselves in the role of translator between athletes and doping control staff during sample collection processes;
- Observers being called upon to explain the integrity features of testing kits to unhappy and/or misinformed athlete support personnel; and
- Observers consoling distressed doping control staff or trying to calm down agitated athletes.

Feedback received indicated that in general the presence of an IO in the DCS had a positive effect in that they were viewed as fair and impartial, particularly in instances where there was some tension between DCS staff and athletes and/or athlete support personnel. On more than one occasion, IOs were sought out to act as referees where there was an issue of disagreement as to whether a doping control protocol or procedure was being adhered to. At one venue in particular, all parties agreed that having an IO present in the DCS was important in terms of maintaining confidence in the procedures.

These particular observations are made to ensure that consideration is given to the facilitative role and skills needed by IOs and the expectations often held of the IO. Fortunately, in PyeongChang, the IO Team proved they were capable of treading the fine line between traditional observer and umpire and played facilitative roles, which enhanced understanding of processes and reduced tension without extending to interference in the activities under observation.

A final point here relates to the size of the IO Team. When considering that one team member was assigned to the Seoul laboratory and taking into account the impact of assigning staff to administrative functions, attendance at meetings and ancillary tasks, the number of actual observers in the field was reduced to four or five. This necessitated long working hours, particularly during the first week of the Games when many issues were being identified, corrective actions being recommended and their effect being the subject of observation again. There was not enough redundancy, and the sporadic illness of team members exacerbated the issue and increased the workload for those in the field. The increased number of events from previous Olympic Winter Games and the distances between venues also impacted staffing requirements. There is also a need to have further capacity for individual IOs to work 'offline' to explore specific arising issues in depth while still maintaining coverage on routine observational work.

WADA Recommendation no. 2

Consideration should be given to ensuring there is adequate capacity and redundancy for sickness, special tasks or other unforeseen impact on the IO Team resources.

5. PyeongChang overview and operating environment

Athletes taking part in the Games competed in 102 events across 15 sport disciplines. These Games were the first ever Olympic Winter Games with over 100 gold medals on offer. Snowboard Big Air (men, women), Speed Skating Mass Start (men, women), Curling Mixed Doubles and the Alpine Skiing Team Event were all new additions to the Games' program. Further, PyeongChang 2018 featured the largest number of women's and mixed events in the history of Olympic Winter Games. The doping controls of all sports and disciplines as listed below were subjected to observations and assessment by the IO Team.

- Biathlon
- Bobsleigh (Bobsleigh/Skeleton)
- Curling
- Ice hockey
- Luge
- Skating (Speed skating/Short track/Figure skating)
- Skiing (Cross-country skiing/Ski jumping/Nordic combined/Alpine skiing/Freestyle skiing/Snowboard)

As will be more fully described in this IO Report, the Games were in many respects unique from an anti-doping perspective.

These were the first Olympic Winter Games following the Sochi 2014 Games, which were later revealed to be at the heart of a widespread doping and manipulation scheme by the host nation. These were also the first Olympic Games at which the IOC – the organizer of the event – outsourced the management of most of its anti-doping program to a separate body – the GAISF DFSU (which in effect will become the nucleus of the ITA). In addition, following identification of issues pertaining to the integrity of the doping control bottles intended to be used in PyeongChang only a few weeks before the Games opening, all bottles were replaced by a different model at the last minute.

This unique situation made the task of the IO Team particularly important. It also resulted in a number of challenges for the parties responsible for managing and delivering the Games anti-doping program, both from an environmental and structural standpoint, which are described below.

5.1 The hangover from Sochi

A reality for all involved in the Games was that they were the first Olympic Winter Games following those held in Sochi in 2014, which were later revealed to have been significantly tainted by the Russian doping and manipulation scandal. This fact became evident at the PyeongChang Press Conference where the IO Program was introduced and during which journalists asked questions to the effect of what would be done differently by the IO Team to ensure there was no repeat of what had occurred in Sochi and what guarantees could be given that these Games would be clean.

As the IO Program got underway in earnest, it was clear that many competitors retained residual doubts and concerns around the effectiveness of the anti-doping program and the ability for it to detect cheats. In particular, the integrity of the sample collection kits and perceived vulnerabilities of the sample collection bottles were questioned by multiple athletes across multiple events.

It was clear that for some teams and across some disciplines, there was a general sense of suspicion and distrust in relation to the effectiveness and integrity of the anti-doping program. It is a great credit to the partnering organizations involved that this suspicion and distrust dissipated somewhat with factual explanations and first-hand witnessing of the professional approach by doping control staff. Despite this, a residual sense of doubt over the effectiveness of the doping control activities remained throughout the Games Period and was reflected in feedback obtained from a number of athletes.

5.2 Sample collection kit challenges

A central and unfortunate feature of the PyeongChang anti-doping program was the mistrust from a number of athletes and athlete support personnel towards the sample collection kits being used.

Three weeks before the Games opening, WADA was informed by the WADA-accredited laboratory in Cologne, Germany that security bottles of the new generation 'BEREG-KIT Geneva', introduced in September 2017 by Swiss manufacturer Berlinger Special AG (Berlinger) to collect athletes' urine, could potentially be susceptible to manual opening¹. Sample collection equipment, which includes A and B security bottles, is purchased by Anti-Doping Organizations (ADOs) and Major Event Organizers (MEOs) to collect, transport and store urine and blood samples.

A WADA investigation conducted in collaboration with ADOs, laboratories and other sample collection agencies confirmed that a proportion of the new generation 'BEREG-KIT Geneva' security bottles were susceptible to manual opening without leaving any evidence of tampering. This prompted WADA to recommend to the IOC on 30 January, two days before the start of testing in PyeongChang, that it use earlier 2016 model BEREG-KIT security bottles in PyeongChang as a precautionary measure². The use of this earlier model, which was previously used at the Rio 2016 Games with no reported security issues, was made possible by the swift reaction of the parties involved in the Games anti-doping program, as well as the quick shipment to PyeongChang of the previous bottle model by a number of Asian NADOs and the agreement by the manufacturer to restart production of this 2016 model. This showed strong collaboration and support by surrounding NADOs (South Korea, Japan and China) in a time of need.

However, the discovery of this flaw, coupled with the echo given to it by a number of media reports, created an atmosphere of suspicion around the anti-doping program which prevailed until the end of the Games. While the IO Team observed no issues with the integrity of the bottles during its multiple visits to the DCSs and the laboratory, it witnessed several instances where athletes and/or their support personnel (mainly coaches and doctors) – and even a few IF anti-doping delegates – raised concerns, sometimes aggressively, about the quality of the sample collection kits.

This tense atmosphere complicated the work of the doping control personnel considerably. It also led the IOC and the GAISF DFSU to issue a number of communications to the participating athletes, including text messaging and posting of notices about the sample collection kits in all DCSs. Offers were also made by the IOC to meet athletes and other concerned participants in person, to clarify any question and address the concerns. While these initiatives could have been provided earlier, they must be commended and were appreciated by those concerned, but they did not suffice to dispel all concerns.

5.3 The transition to the International Testing Agency (ITA)

With a view to make anti-doping at the Games 'more independent', the IOC announced before these Games its intention to outsource most of its anti-doping program to the ITA. This new body, which was formally established under Swiss law in February 2018, is intended to provide doping control and other anti-doping services to IFs and MEOs such as the IOC that wish to delegate parts or all of their anti-doping programs in the future. However, as is the case with the IOC for the Olympic Games, its clients will remain ultimately responsible for their compliance with the Code and the associated International Standards.

Given it became clear in 2017 that the ITA would not be operational in time for PyeongChang, the IOC turned to the GAISF DFSU, a few months before the Games, to delegate part of its obligations set forth in the IOC Anti-Doping Rules (IOC ADR) to the DSFU. The GAISF DFSU has extensive experience in developing and handling anti-doping activities for its clients. Created in 2009 to provide anti-doping expertise to IFs, it has worked with dozens of IFs and a few MEOs over the years and its staff will be the nucleus of the ITA. During the Games, the GAISF DFSU worked in close collaboration with POCOG, which was responsible for implementing and delivering the anti-doping program.

¹ See WADA press release of 28 January 2018: <https://www.wada-ama.org/en/media/news/2018-01/wada-investigates-potential-integrity-issue-with-new-generation-bereg-kit-geneva>.

² See WADA press release of 31 January 2018: <https://www.wada-ama.org/en/media/news/2018-01/wada-update-regarding-new-generation-bereg-kit-geneva-security-bottles>.

The IOC's decision to contract the GAISF DFSU for the purpose described above provided a good transitional solution before the ITA becomes operational in the coming months. This was in great part thanks to the professionalism of the GAISF DFSU representatives and the timely support provided by the Legal and Medical & Scientific Departments of the IOC. However, despite the pre-Games agreements signed between the parties and the clarifications contained in the IOC ADR, this arrangement also resulted in some occasional confusion in practice, in terms of roles and responsibilities, between the IOC (which had the experience and knowledge of previous Games and attended the daily anti-doping meetings held during the Games Period in an advisory capacity, together with the GAISF DFSU, POCOG, KADA and representatives of the IO Team), the GAISF DFSU (which, on short notice, became responsible for managing the Games' anti-doping program for the first time) and POCOG.

One such example was a certain lack of coordination between the GAISF DFSU and POCOG, in the first week of the Games, in acting upon new intelligence received and conducting target testing, thus resulting in occasional testing delays. Another example was the lack of follow-up from the IOC, the GAISF DFSU and POCOG, until the end of the first week of the Games, with National Olympic Committees (NOCs) that had not provided their athlete rooming lists and other relevant whereabouts information to POCOG as requested by the IOC prior to the Games. The IO Team attributes this situation to the limited human resources of all parties involved in the program and the relatively late involvement of the GAISF DFSU in the preparations for the Games, as well as the amount of additional work for the organizations involved resulting from the replacement of the 'Geneva Kits'.

To the credit of the IOC, the GAISF DFSU and POCOG, the individuals involved in managing and leading the delivery of the anti-doping program were generally quick to respond to recommendations made by the IO Team or other relevant parties and to consequently make adjustments to the program when needed and where necessary. In this regard, they displayed exceptional dedication and resilience. Despite limited human resources, they worked hard together to find proper solutions and ensure effective management of the program.

IOC Recommendation no. 1

The IOC and the ITA (once operational) should fully clarify each party's roles and responsibilities for the next Olympic Games. In particular, they will need to determine if the IOC, as the Signatory of the Code and the organization responsible for its own compliance with the Code, remains operationally involved in the Games anti-doping program and if so, in what role.

Given the volume and intensity of the work during the Games, it is critical that the LOC recruits enough staff, with proper anti-doping experience, for its anti-doping operations management team. The head of POCOG's Doping Control Team and most of her team were former KADA employees or were seconded by KADA, therefore providing experience and expertise.

It also critical for the LOC to ensure responsibilities are shared amongst the team to avoid overburdening the doping control team leader(s) and cater for any unplanned event (e.g., illness). This was not the case in PyeongChang and, had the team leader been incapacitated for any reason, elements of the delivery of the anti-doping program would have been significantly jeopardized.³

One option the IO Team recommends to the LOC and the IOC to seriously consider is the replacement of the LOC's anti-doping team by the NADO of the host country, if the NADO has the capacity to fulfil this role. This approach would have the benefit of harnessing existing expertise and not having to create and capacitate a brand new anti-doping team for the purpose of the Games. It would also assist in optimizing coordination between the pre-Games testing program and the Games Period testing program given the NADO could use its existing contacts with other Anti-Doping Organizations (ADOs) and participate fully in the pre-Games Intel TF.

³ The same recommendations would apply to the ITA as relates to the Olympic Games. Please note however that the IO Team refrained from making recommendations to the ITA given that it was not involved in these Games.

LOC Recommendation no. 1

Serious consideration should be given to utilizing the host country's NADO in the first instance for the provision of anti-doping services at the Games.

6. The athlete experience

Each of the three issues addressed above – the hangover from Sochi, sample collection kit challenges, and the transition to the ITA – had an influence upon the athletes approached by the IO Team regarding their impressions of the doping control processes at the Games.

Although athletes were cooperative and recognized the pivotal role of the anti-doping efforts during the Games to ensure a clean and fair playing field for them, some of the behaviors observed at the Games revealed underlying feelings which included skepticism, doubts and fears.

A key factor related to the pending decisions in the lead-up to the Games regarding the status of appeals and Russian athletes (some of whom had been declared eligible to compete under the Olympic flag). Commentary about the Sochi findings was a recurrent topic of conversation among athletes and their entourages, with persistent fears that a third party could possibly tamper with their samples. The trust in the system and the chain of custody of samples was challenged, and the impact of the Sochi experience could not be dissociated from the perceptions of the Olympic athletes towards anti-doping procedures.

Allegations and intense media coverage of the recent doping scandals as well as investigations conducted between the Sochi and PyeongChang Olympic Winter Games contributed to questions and doubts among some athletes, resulting in increased nervousness towards the doping control procedures. German Olympic athletes, in particular, seemed the most affected by this situation. Germany is the source of several highly publicized media investigations and documentaries but also the first country that hosted the initial whistleblowers of the Russian doping scandal. As a result, German athletes and their entourages appeared to be among the most informed regarding these issues and therefore very vocal in relation to the doping control procedures in PyeongChang.

Reports of issues around the closing of some sample collection bottles a few weeks prior to the Games had a clear impact among the Olympic athlete community. Consequently, athletes frequently questioned the integrity of the sample collection kits and the possibility of tampering. Some athletes tried forcibly to tighten the cap of the sample collection bottles to ensure they closed properly and avoid any risks despite being informed that the bottles had been replaced with an earlier and more secure version for the Games. On at least two occasions, in the presence of an IO Team representative, athletes tightened caps to the extent that the caps cracked.

Lack of anti-doping education for some athletes was observed to be a factor leading to some of the perceptions of mistrust during the doping control procedures. Some of the most difficult procedures to witness from an IO's standpoint involved Olympic athletes apparently being tested for the first time at the Games – a serious issue in its own right – and who were not familiar with the procedures. During sample collection procedures, a clear distinction could be detected between their level of anxiety and the more confident behavior of athletes with prior experience of the doping control procedures. The IO Team noted that unfortunately the educational brochures displayed within the DCSs waiting areas were seldom used – and were sometimes not available in the language spoken by the athlete. There also seemed to be a general lack of reference to the availability of the educational material by doping control staff.

The WADA Outreach Booth located in the two Athlete Villages played a key role in promoting both knowledge of, and confidence in, the anti-doping efforts. The majority of athletes and their support personnel were happy to stop by the Booth, either to undertake the 10-question quiz and win prizes or just watch events on TV.

The lack of English language proficiency of the local doping control staff significantly impacted the perception of the athletes towards the doping control process. The inability of some doping control staff to communicate effectively with the athletes and to provide specific answers to their comments or questions severely jeopardized the credibility of the procedures on a number of occasions and resulted in frustration for the athletes since the procedures were sometimes longer than usual. Numerous observation reports noted instances where chaperones and local DCOs were not able to communicate effectively with athletes.

Out-of-competition (OOC) testing notifications and timing also led to complaints and frustrations from some athletes. Indeed, certain athletes resented being tested on the day they were due to compete, prior to their competition, while other athletes spent long hours in the DCS waiting area in the early morning hours because multiple athletes had been notified simultaneously and the staff could not manage the influx of athletes due to the comparatively limited number of processing rooms and DCOs available.

Discussions with experienced athletes highlighted a general frustration and perception that TUEs were being abused. TUEs appeared to these experienced athletes as an improper way to access and use prohibited substances legally. There was a perception by some athletes that certain doctors could be easily convinced to support a TUE application, even though the system in place required that all TUE applications be assessed by the relevant TUEC.

For the trust of the athletes to be restored in the anti-doping efforts, and to strengthen WADA's ability to advocate for clean competition, ongoing communication with, and education of the athletes are critical elements to be addressed.

Another critical element relates to the impact and influence of athlete support personnel upon the athletes under their care. It is not difficult to accept that an athlete's perceptions around doping control processes might be influenced by witnessing their coaches' or doctors' interactions with doping control staff.

The IO Team recognizes and welcomes the very important supportive role played by athlete support personnel during doping control processes at the Games. Many instances were observed during which athlete support personnel assisted their athletes by clarifying doping control procedures, answering their questions and generally supporting them. Most were found to be respectful, cooperative and understanding in their interactions with doping control personnel. Many were clearly champions for clean sport and fair play.

Unfortunately, there were several incidents witnessed by IO Team members during which the attitude and behaviors of a small number of athlete support personnel did not reflect well upon them. On a few occasions, the aggressive demeanor of athlete support personnel within the confines of the DCS served to have a negative impact upon other athletes, athlete support personnel and doping control staff present at the DCS. In most instances, the issue at the heart of the tension revealed a lack of understanding regarding processes, procedures and protocols by the athlete support person. Often the issue related to a minor variation in procedures or processes, such as the treatment of excess chain of custody barcode stickers, from that which the athlete support person may have previously experienced.

Ultimately, following a few recurrent incidents with particular athlete support personnel, the IOC was required to intervene and reach out directly to individual athlete support personnel or to NOCs to clarify both procedures and expectations. Fortunately, these interventions appeared to have the desired effects.

LOC Recommendations no. 2-4

Doping control personnel must be trained to be able to address athletes' questions during all phases of the doping control procedures.

DCS educational documents should be updated to ensure they are effective and utilized by the athletes. A phone application or video clip might be a more suitable communication platform aligned with current athlete lifestyles and communication patterns.

A safe communication platform could be made available and advertised to athletes to provide feedback on their experiences with the doping control procedures at the Games or to report any suspicious activity they may witness.

IOC Recommendations no. 2-3

Consideration should be given to require every Olympic athlete and accredited athlete support personnel to complete an anti-doping educational workshop or quiz before attending the Olympic Games, as is the case with National Olympic Committees' physicians. The aim would be to ensure that all have a basic level of understanding of the doping control procedures and their roles and responsibilities.

Specific pre-Games briefings, particularly around Games rules and protocols and highlighting any changes from previous Games or protocols, should be delivered to athlete support personnel to discuss and clarify potential issues prior to the processes beginning.

7. Pre-Games initiatives

While the IO Team focused its observations on the actual Games Period, the anti-doping program implemented in PyeongChang was the result of many months of preparations. In this respect, the IO Team felt it was important to review in particular a couple of pre-Games initiatives launched by the IOC to attempt to optimize the event's anti-doping program and prevent cheats from participating in the Games.

7.1 The PyeongChang 2018 Expert Pre-Games Taskforce

Following its adoption for the Rio 2016 Summer Olympic Games, the IOC again established an Expert Pre-Games Taskforce prior to the Games. This Taskforce was composed of the IOC Medical and Scientific Director, WADA's Deputy Director General and an external expert (WADA's former Director of Standards and Harmonization). It was tasked with making recommendations as to how the preparations could be optimized, how the various parties involved (in particular the LOC and the local NADO, KADA) could further collaborate, and how to strengthen the Games anti-doping program. The group met on a number of occasions and traveled to South Korea twice, in February 2017 (PyeongChang) and September 2017 (Seoul). In addition, following recommendation of the Expert Pre-Games Taskforce, a representative from the GAISF DFSU traveled to PyeongChang in November 2017 to support POCOG for a DCO training session.

This work resulted in a series of recommendations, which, for the most part, were implemented ahead of the Games. Examples of these measures included the incorporation of a number of KADA staff members in the PyeongChang doping control team or in support of the Games' TUEC; the agreement signed by the IOC and KADA to enable KADA to conduct tests outside the two Athlete Villages and Games venues during the Games Period; as well as the possibility – for the first time in the history of the Games – for some doping control staff to have access to athlete whereabouts information through the GMS, which showed when athletes entered one of the Villages.

However, some recommendations were clearly not followed. For example, POCOG did not manage to reach an agreement with South Korean Customs and law enforcement agencies for sharing of intelligence ahead of and during the Games. Despite the insistence of the Taskforce, POCOG did not allocate budget to cover air travel of IDCs, a critical group for the success of the testing program, to South Korea. Neither did the organizing committee fully ensure that all local doping control personnel had a satisfactory command of the English language.

While this lack of follow-up did not jeopardize the implementation of the Games' anti-doping program, it was a missed opportunity to further enhance the quality of the program and the anti-doping legacy for South Korea.

IOC Recommendations no. 4-5

For the 2020 Tokyo Summer Olympic Games, the Expert Pre-Games Taskforce should involve both the ITA and the IOC as the 'owner' of the event and Code Signatory, and work in relation to the Tokyo Games should start at least two full years prior to the opening of the Games. In the long term, the ITA, in its leading role, should aim to ensure an efficient transfer of knowledge and experience in the anti-doping area between LOCs as well as a consistent approach from one edition of the Olympic Games to the next. In addition, the ITA and the IOC should continue to ensure that the LOC engages the local NADO as a part of this cooperation.

The IOC should ensure the implementation of all Expert Pre-Games Taskforce recommendations. Given the intensity and the very heavy workload faced by the LOC from the opening of the Athlete Village(s), substantial recommendations are much less likely to be implemented during Games time.

7.2 The Pre-Games Intelligence Taskforce

Building on the success of the Rio 2016 Pre-Games Intel TF, the IOC, in collaboration with WADA, put in place a similar Intel TF ahead of the Games.

In June 2017, the IOC, WADA and GAISF (SportAccord at the time) signed a Tripartite Agreement in order to set up the Intel TF. The role of the Intel TF was to develop an intelligence-based risk assessment in order to propose a minimum level of testing of prospective athletes; to work in collaboration with NADOs and IFs to propose testing recommendations and track implementation; and to share the outcomes of that exercise with the IOC and POCOG to inform the TDP for the period of the Games.

WADA appointed a group of five NADOs to the Intel TF – namely, Anti-Doping Denmark (ADD), the Canadian Centre for Ethics in Sport (CCES), the Japan Anti-Doping Agency (JADA), United Kingdom Anti-Doping (UKAD) and the United States Anti-Doping Agency (USADA) – with WADA and the IOC providing oversight and access to information. The GAISF DFSU acted as the Secretariat for the Taskforce and the Association of International Olympic Winter Sports Federations (AIOWF) was granted observer status. POCOG was also invited to be an observer after the Intel TF had been operating for some months.

In its report following the Rio 2016 Summer Olympic Games, the IO Team had suggested that Intel TFs begin their activities in the twelve months leading up to the Games. Following this recommendation, the PyeongChang Intel TF operated from June 2017 through to the opening of the Athlete Villages on 1 February 2018.

The Intel TF focused its work on the top 20 athletes in each individual sport/discipline as predicted by Gracenote data (Virtual Medal Table)⁴. The Intel TF requested from IFs, and reviewed, Registered Testing Pool (RTP) composition, pre-Games testing plans and prospective PyeongChang athlete testing histories. The Intel TF conducted a specific risk assessment on each winter sport, discipline, country and athlete and established a matrix to set a minimum level of testing which recommended a certain number of tests to be conducted on at-risk athletes and athlete groups prior to the Games. The risk assessment took into account factors such as physiological demands of the sport/discipline, ADRV history in the sport/discipline, environmental factors (popularity of the sport, financial rewards, corruption index, etc.), athlete performance (current and forecasted) and testing history.

⁴ For more information on the Virtual Medal Table, please visit: <http://www.gracenote.com/virtual-medal-table/>.

For athletes competing in individual sports/disciplines, based on the comprehensive assessment as described above, the following matrix outlining a minimum level of testing was established:

Sport/Discipline Risk	High risk athlete	Medium risk athlete	Low risk athlete
High	6	5	4
Medium high	5	4	3
Medium low	4	3	2
Low	3	2	1

For team sports (e.g., curling and ice hockey), specific athletes were not nominated. The Intel TF instead recommended that IFs and NADOs aim to test each athlete on the final Olympic team at least one or two times.

This resulted in 2,882 testing recommendations provided for 1,062 athletes from 36 countries, to be implemented between 25 August 2017 and 31 January 2018. Recommendations also included specific test types (e.g., IC, OOC, urine, blood, Athlete Biological Passport [ABP]) as well as specific analyses to be conducted (i.e., Erythropoiesis Stimulating Agents [ESAs], Growth Hormone [GH], Growth Hormone Releasing Factors [GHRFs]). It should also be noted that, in addition to any athlete that was included in the top 20, the Taskforce reviewed all Russian athletes included on the IOC Long List⁵ and provided specific testing recommendations to RUSADA.

Of these 2,882 recommendations, 80% were implemented by IFs and NADOs. Of the 1,062 athletes for which the Intel TF provided recommendations, as of 31 January 2018 (the end of the Taskforce's mandate) less than 25 athletes still had not been tested at least once since 1 April 2017⁶. All recommendations provided to RUSADA were implemented.

To serve as a comparison, the Rio 2016 Intel TF issued 1,333 recommendations and of those, approximately 40% were accepted and actioned in full by the relevant IF/NADO and approximately 23% were accepted and actioned in part (e.g., urine samples collected but not blood samples as recommended). While the Rio 2016 Intel TF operated within a much shorter timeframe (i.e., less than five months prior to the opening of the Athlete Village in Rio), the work achieved by the PyeongChang Intel TF and the relevant NADOs and IFs demonstrated a continued improvement to Pre-Games programs.

Throughout the period of its operation, the Intel TF provided support to IFs and NADOs as needed, and monitored and reviewed implementation of recommendations in order to propose further recommendations as appropriate. IFs and NADOs responded to requests and recommendations from the Intel TF and demonstrated best efforts to work in collaboration to implement the recommendations.

The recommendations resulted in nine Adverse Analytical Findings (AAFs), distributed across five different sports and six different nationalities. While some of the AAFs may have been the result of an IF or NADO implementing testing based on their own TDP, the outcomes show that the work of the Intel TF was successful in identifying at-risk athletes.

⁵ A list provided by NOCs that refers to athletes who could potentially participate in the Games.

⁶ It is important to note that the Intel TF issued recommendations that focused on the predicted top 20 athletes in each individual sport/discipline and not on all athletes with the potential to participate in the Games. The Intel TF did not review testing history or any other data and did not issue testing recommendations for athletes outside of the predicted top 20 (except for Russian athletes mentioned above).

The work of the Intel TF ended on 31 January 2018. As the GAISF DFSU was also on site during the Games and responsible for the Games Period program, this greatly assisted with the knowledge transfer to POCOG and facilitated the transition between the Pre-Games work and the Games Period testing plan. Specifically, the Intel TF Secretariat (GAISF DFSU) provided POCOG with a list of athletes for which not all the recommendations had been implemented as well as a list of athletes who had not been tested since 1 April 2017 (based on its top 20 list of 1,062 athletes).

In addition to providing POCOG with the information that stemmed from the Intel TF's work, the GAISF DFSU conducted a review of all the confirmed participants for the Games (a list of a bit less than 3,000 athletes) and determined that less than 500 athletes had not been tested since 1 April 2017 (less than 18%)⁷. In addition, and as it relates to the participation of North Korean athletes in the Games, the GAISF DFSU worked with POCOG in determining their testing history and ensuring appropriate testing. This was all very valuable intelligence that assisted in refining the TDP for the Games. Sharing of information and discussion were also facilitated by the fact that this could be done in person and on site.

IOC Recommendations nos. 6-7

While the Intel TF was a successful initiative which saw IFs and NADOs working together to implement recommendations, Olympic IFs and NADOs should be undertaking this type of gap analysis and testing themselves, in a collaborative manner, in the twelve months leading up to the Games. If the Intel TF initiative continues, it should continue to be set up well in advance of the Games (as was done for PyeongChang) and, if possible, at least 12 months ahead of the Games.

If such Intel TFs continue, thought should be given to incorporating IF members and the LOC (if the local NADO is not given responsibility for the Games anti-doping program as per LOC Recommendation no. 1 above). While POCOG joined the Taskforce in the fall of 2017, it might have been beneficial for them to have been a member from the start. This could have facilitated Games Period risk assessment and TDP development. Furthermore, while a member of the AIOWF participated as an observer, the Intel TF could have benefited from the presence of IF members.

WADA Recommendation no. 3

Given its role in monitoring compliance of IFs and NADOs with the World Anti-Doping Code and related International Standards, WADA should reconsider whether it should be part of such Intel TFs.

⁷ For clarity, this review included all confirmed Olympic participants (a bit less than 3,000 athletes) and not only the predicted top 20 list of athletes (1,062 athletes) on which the Intel TF had focused its work and issued recommendations.

8. Test distribution planning and delivery

In a number of previous IO reports, the IO Team noted the importance of planning and delivering an effective and intelligent Games Period test plan that focuses on quality versus quantity. The IOC implemented that recommendation in Rio and did so again in PyeongChang.

The TDP for PyeongChang was developed based on a genuine assessment of doping risk and moved away from relying on a large number of random tests to achieve testing numbers. Samples collected were also analyzed for additional substances based on WADA's Technical Document for Sport Specific Analysis (TDSSA) and on intelligence received. Members of the Intel TF were subsequently on site during the Games and able to influence the POCOG TDP.

IOC Recommendation no. 8

The advances in test distribution planning based on intelligence-led risk assessment that were demonstrated in PyeongChang should be consolidated and expanded upon for future Games. In particular, if Pre-Games Intel TFs continue, the information and intelligence gained from this endeavor should be shared with the LOC in 'real-time'. Having a member of the LOC part of the Intel TF, or having the NADO fulfil the role of the LOC, could address this and ensure that the risk assessment and TDP developed for the Games benefit, well ahead of time, from the information from the Intel TF. This will contribute to a seamless transition between pre-Games and Games Period risk assessment, planning and delivery.

8.1 Target Tests

Just as importantly, the TDP was refined and updated throughout the Games Period based on further intelligence obtained, including whereabouts anomalies, intelligence provided by IFs or NADOs, atypical or suspicious analytical findings reported by the Seoul laboratory, as well as Athlete Passport Management Unit (APMU) requests for follow-up testing.

However, some challenges in assimilating and implementing these target test requests were observed. For instance, while the Intel TF identified a list of athletes to target-test and provided this to POCOG, on a number of occasions large groups of athletes (e.g., whole hockey teams) were still tested and tests often took place at the same time and the same locations every day (i.e., only at the two Athlete Villages). On some occasions, conducting target tests in a quick and efficient manner proved to be difficult. Very few LOC staff members were assigned to the issuance of daily out-of-competition mission orders, which constitute the bulk of the target tests. Some of the factors that prevented swift reactions may have been due to this lack of manpower as well as a lack of capacity to obtain and verify whereabouts information and to test outside of the Athlete Villages prior to competition. While POCOG had mobile DCSs, it does not appear that they were used efficiently.

LOC Recommendation no. 5

The LOC should ensure that out-of-competition testing plans are unpredictable, i.e., that athletes are tested in various locations and at different times each day. If, in the lead-up to the Opening Ceremony, athletes are only tested in the Athlete Village(s) and in the mornings or evenings, this becomes very predictable and less effective. To improve reaction time regarding target tests, the LOC should ensure that testing can occur at all Olympic venues from the opening of the Athlete Village(s), ideally including training venues. Sufficient numbers of LOC staff should be assigned to out-of-competition and other targeted missions. LOC personnel should also be able to verify whereabouts information and adapt testing missions in a prompt manner.

8.2 Testing outside of Olympic venues

Similar to what occurred at the Rio Olympic Games, different sample collection authorities were responsible for testing athletes outside of the Olympic venues during the Games Period. The GAISF DFSU was responsible for organizing OOC tests on behalf of the IOC outside of South Korea, and KADA was responsible for OOC tests in South Korea outside of the Olympic venues. While this aspect of the anti-doping program greatly enhanced the coverage offered by the TDP, most of these tests seem to have been planned and conducted in the period between the opening of the Athlete Villages and the Opening Ceremony

IOC Recommendation no. 9

For future Games, the IOC should continue to work with different sample collection authorities for tests outside of Olympic venues. This mechanism should enable a greater proportion of the testing contemplated in the TDP to be conducted over a longer period of time, when necessary.

8.3 Athlete Biological Passport

The IOC appointed two ABP experts from the WADA-accredited laboratory in Montreal for the duration of the Games. The task of the two appointed experts was to provide a rapid review of results from samples collected during the Games, in the context of existing passports where applicable, in order to propose, in a timely manner, additional target testing and additional specific analysis (i.e., Isotope-Ratio Mass Spectrometry [IRMS], ESAs/Homologous Blood Transfusion [HBT]) to be conducted. The two experts performed their roles from the Montreal Laboratory.

The appointment of passport experts, which was first implemented by the IOC in Rio 2016 and commended by the IO Team at that time, added another layer to the review of atypical and/or suspicious findings obtained from samples collected at the Games, which complemented the existing mandatory procedures, but is, in and of itself, not mandatory according to any WADA standards⁸.

In order to carry out this function, the IOC provided the two experts with a list of newly analyzed samples from athletes participating in the Games. The experts reviewed the list of the new samples and the athletes' steroidal and hematological profiles in ADAMS, but the recommendations provided by the experts to the IOC were made outside of ADAMS (since the experts were not operating as the official APMU for these passports).

Though not essential to fulfill their mandate, the recommendations provided by the experts appointed by the IOC could prove valuable to the Passport Custodians of the athletes. The IO Team was informed that during the Games Period, the IOC did proactively liaise with IFs to determine follow-up actions pertaining to ABP recommendations on a case-by-case basis. For future Games, the IO Team encourages the IOC to share all recommendations from their appointed experts with the relevant Passport Custodians in order to optimize resources and information sharing.

During the Games, the IOC received recommendations from these two experts but also from other APMUs associated with the IFs. The IOC received 116 recommendations, of which 95 were provided by the IOC-appointed experts and 21 by other APMUs. All recommendations but four (which are still pending) were implemented.

The expert review of hematological and steroidal ABPs provided timely feedback for additional testing including application of GC/C/IRMS and ESA tests on suspicious samples. By the last day of the Games, the laboratory had received more than 90 requests for additional follow-up testing. While these more than 90 requests for additional follow-up testing did not lead to the identification of further doping infractions, the procedure implemented is an important tool in the testing program.

The overall ABP program was well managed during the Games, and it is recommended that the IOC continues to utilize the expertise of knowledgeable experts in order to deliver an overall intelligence-based target testing program.

⁸ It is important to clarify that the two Experts were not an Athlete Passport Management Unit (APMU) due to the fact that the IOC, as an MEO, cannot be the Passport Custodian of any athlete. As such, the Passport Custodians remained either the IFs or the NADOs of the athletes and these APMUs retained their responsibilities as outlined in the International Standard for Testing and Investigations (ISTI).

IOC Recommendations no. 10-12

For future Games, the IOC should continue to utilize the knowledge and expertise of specialized ABP experts. The IOC should also consider whether any Games Period experts could also be involved in the Pre-Games Intel TF moving forward. The ABP program should continue to be coordinated with the relevant IFs and NADOs in advance of the Games.

The IOC should share any recommendations provided by its appointed experts with the athlete's relevant passport custodian (IF or NADO).

In addition, where a targeted athlete is ultimately not tested at the Games, or his/her Games Period Athlete Biological Passport (ABP) test results are suspicious, the IOC should provide full details to the relevant IF/NADO (and WADA) for follow-up testing after the Games as appropriate.

8.4 International Federation protocols

In its Rio Report, the IO Team recommended that the IOC re-introduce its policy of establishing written protocols with each IF in advance of the Games, as had been its practice at previous Olympic Games. The IOC subsequently developed IF protocols with each IF ahead of these Games. The protocols included agreements on how post-competition testing would be conducted and how athletes would be selected (e.g., finishing position, random, etc.). In all protocols, the specific numbers of tests planned were included. While this helped the LOC plan the post-competition program and the resources required for each competition venue, it also committed the IOC to a large number of tests for the in-competition program. While the protocols included a comment indicating that the number of tests could differ depending on the intelligence gathered, this element created the risk of adversely impacting the delivery of a targeted and integrated pre-competition and in-competition testing program. However, aside from this information, the protocols were for the most part very general in nature.

IOC Recommendation no. 13

The IOC should continue to work with each Olympic IF to develop detailed anti-doping protocols in advance of each Games. These protocols should be provided to the LOC as soon as practically possible in order to assist the DCSM to better understand the sport-specific requirements that must be followed during the Games. The IOC should develop a template that can be adapted for each IF but should aim to include the following:

- a broad description in terms of test type, number and timing (instead of committing to specific numbers);
- who the IF technical delegate will be (name and contact information) and his/her responsibilities during the Games;
- specific information on selection draw requirements and materials;
- procedures regarding testing athletes who achieve record performances;
- any additional accreditation requirements for access to the field of play;
- any sport-specific anti-doping procedures; and
- an agreed procedure for how information and intelligence held by the IF can be shared with the IOC as well as how the IF can request target tests during the Games (i.e., contact name, contact method – phone or secure email, etc.).

8.5 Whereabouts challenges

Out-of-competition testing is virtually impossible without complete and up-to-date whereabouts information. Unfortunately, as has been observed in past Olympic Games (both Winter and Summer), obtaining accurate and complete whereabouts information from NOCs during the Games in a timely manner was again an important issue that impacted the effectiveness of the OOC testing program conducted throughout the Games.

Prior to the start of the Games, the IOC established a framework to obtain certain whereabouts information in order to minimize the administrative burden on athletes. Although the IOC was granted ADAMS access for athletes who provide whereabouts information as a result of their inclusion in an IF or NADO RTP, the IOC requested in its ADR that every NOC provide rooming information (i.e., building and room numbers in the Athlete Villages) for all of their athletes, in addition to arrival/departure dates and training schedules, irrespective of whether the athlete was in an IF or NADO RTP.

In addition, the IOC followed up on the recommendation of the IO Team in Rio to include consequences for NOCs that failed to provide the whereabouts information described above. Article 5.6.2 of the IOC ADR provided that such failures could lead to measures and/or sanctions pursuant to Rule 59.1 and/or Rule 59.2 of the Olympic Charter⁹.

While the IO Team found that this approach was, in principle, fit for purpose, the implementation of the foreseen procedure resulted in a confusing situation in terms of whereabouts obligations as well as from an operational standpoint.

With regards to complying with their whereabouts obligations, many RTP athletes relied on their NOCs to provide a rooming list to complement their whereabouts information in ADAMS (for example, many athletes indicated 'Olympic Village' for the Games Period, but without details such as the building or room number). However, many NOCs did not provide such information and, in certain cases, when rooming lists were provided, they were not reliable because the document was provided in the NOC's native language or otherwise difficult to comprehend.

The IO Team also observed that, while the IOC ADR outlined the process for the referral of results management authority for whereabouts failures to the athlete's whereabouts custodian, during the Games, this did not always take place in a prompt manner, which sometimes impacted the ability to remedy whereabouts deficiencies in a timely fashion. The transitional phase of shifting anti-doping responsibilities to the GAISF DFSU and the relatively late involvement of the DFSU to provide assistance are possible explanations for this shortcoming. Nevertheless, although there was no system in place to report potential whereabouts failures to the competent results management authority as soon as the potential failure occurred,

⁹ Article 59.1.4 of the Olympic Charter: 'With regard to NOCs: a) suspension (IOC Executive Board); in such event, the IOC Executive Board determines in each case the consequences for the NOC concerned and its athletes; b) withdrawal of provisional recognition (IOC Executive Board); c) withdrawal of full recognition (Session); in such a case, the NOC forfeits all rights conferred upon it in accordance with the Olympic Charter; d) withdrawal of the right to organise a Session or an Olympic Congress (Session).'

Article 59.2. of the Olympic Charter: 'In the context of the Olympic Games, in the case of any violation of the Olympic Charter, of the World Anti-Doping Code, or of any other decision or applicable regulation issued by the IOC or any IF or NOC, including but not limited to the IOC Code of Ethics, the Olympic Movement Code on the Prevention of Manipulation of Competitions or of any applicable public law or regulation, or in case of any form of misbehaviour:

2.1 with regard to individual competitors and teams: temporary or permanent ineligibility or exclusion from the Olympic Games, disqualification or withdrawal of accreditation; in the case of disqualification or exclusion, the medals and diplomas obtained in relation to the relevant infringement of the Olympic Charter shall be returned to the IOC. In addition, at the discretion of the IOC Executive Board, a competitor or a team may lose the benefit of any ranking obtained in relation to other events at the Olympic Games at which he or it was disqualified or excluded; in such case the medals and diplomas won by him or it shall be returned to the IOC (Executive Board);

2.2 with regard to officials, managers and other members of any delegation as well as referees and members of the jury: temporary or permanent ineligibility or exclusion from the Olympic Games (IOC Executive Board);

2.3 with regard to all other accredited persons: withdrawal of accreditation (IOC Executive Board);

2.4 the IOC Executive Board may delegate its power to a disciplinary commission.

2.5 Notwithstanding Rules 59.1 and 59.2, the competent IOC body (Session, IOC Executive Board, disciplinary commission) may also, or in lieu of the measures and sanctions authorized by such Rules, impose financial sanctions on the relevant individuals, teams or entities, taking into account factors such as the gravity and extent of the violation and the ability of those concerned to bear the financial consequences of the sanctions. The sanctions may include fines and/or the suspension or cancellation of any form of financial support by or emanating from the IOC. In all cases, the IOC shall be entitled to recover its related expenses and costs. 3. Before applying any measure or sanction, the competent IOC body may issue a warning.'

the GAISF DFSU did report potential missed tests and filing failures to the competent authorities on a case-by-case basis.

With respect to non-compliant NOCs, the issue was only reported by POCOG to the IOC and the GAISF DFSU midway through the Games upon the request of the IO Team. The IOC subsequently sent out a reminder to all NOCs requesting that they provide complete and accurate whereabouts promptly; however, the IOC did not provide for the possibility of sanctions being imposed against the NOCs in the event of continued non-compliance. While some updated whereabouts were obtained after the reminder, the overall response rate remained unsatisfactory.

While imposing sanctions on non-compliant NOCs could have improved NOC compliance to obtain whereabouts information to conduct effective OOC testing, for future Games, the IOC or the responsible entity should consider establishing a system that includes the possibility to impose proportionate and realistic coercive measures against NOCs in a prompt manner. In the IO Team's view, the entity in charge of following up on whereabouts information must be empowered so it can effectively exert pressure on the NOCs.

Above and beyond the lack of systematic follow-up on whereabouts failures, which is administrative in nature, the deficient whereabouts information hindered OOC testing operations at the two Olympic Village DCSs.

When accurate whereabouts information was not available, the staff at the DCSs endeavored to obtain the information by different means, such as sending chaperones into the Athlete Village buildings to take note of athlete names which were sometimes indicated on the doors of the rooms. Chaperones also had access to the athlete pictures, which were used as they waited at the entrance of the dining hall, with the hopes of identifying them for target OOC testing.

The DCCC's access to the GMS, which indicated when athletes entered Olympic venues, was very helpful to locate athletes and to plan missions. Chaperones would be posted at the entrance of the Athlete Village and the DCS would inform them over the radio that a targeted athlete had entered the Village. However, since the GMS did not record when athletes exited, the information was not always reliable and actionable.

Even though the GMS initiative was beneficial and despite the efforts of doping control personnel, in many cases they had to cross-reference different sources of information to try to determine the location of the athletes. Chaperones would be sent to look for athletes without concrete information regarding their schedules or precise location. In addition, chaperones often lacked the experience to react quickly when looking for an athlete.

In the end, many OOC missions were cancelled or carried over to the next day or for target in-competition testing. On some days, more than 50% of the scheduled missions were aborted. The IO Team is not aware of the number of athletes targeted during the Games who ultimately were not found to provide a sample.

IOC Recommendations no. 14-19

To assist in the planning of OOC testing missions, doping control staff should have access to the IOC Sports Information System, which contains the training schedules at each venue.

At least one staff member from the IOC/ITA or the LOC should be dedicated to verifying the submission and accuracy of whereabouts information and tasked with following up with NOCs and IFs/NADOs with respect to any whereabouts failures.

DCSMs could have access to GMS information if it is available. The information would be far more valuable if accreditation scanning was extended to include not only entry points, but also exit points of Olympic venues.

The IOC should liaise with NADOs and IFs to ensure that RTP athletes are reminded of their personal obligation to provide complete and accurate whereabouts during the Games, including their room numbers, to avoid reliance on the NOC rooming lists.

NOCs should be requested to provide the dates and times of athlete arrivals and departures from the host country ahead of the opening of the village. NOCs should also be requested to use the same template form to provide the rooming lists.

The IOC should include in its Anti-Doping Rules a mechanism for proportionate penalties for NOCs that fail to provide location information. The entity in charge of whereabouts management during the Games should notify the IOC of any instances where NOCs do not comply so that sanctions against NOCs who fail to provide the required information can be imposed by the IOC

9. Doping control staff

9.1 Local staff – Recruitment, training and management

The IO Team commends POCOG both on the significant number of volunteers recruited for doping control duties, and on the high levels of enthusiasm and dedication that those recruited took to their roles. Volunteers worked long shifts and their respectful, helpful and friendly disposition made them very special representatives both for POCOG and their country.

Unfortunately, for many of those tasked with roles in the doping control program, particularly chaperones, the language barriers proved quite daunting and ultimately became a source of frustration for some athletes. Consideration should be given to the selection and training of doping control staff, particularly in language proficiency.

Elimination of any misunderstanding and setting expectations is particularly important when a chaperone notifies an athlete of their selection for doping control, given it is essentially the first point of contact for the overall encounter and can largely determine the mood of the engagement. It is critical that language barriers at the point of athlete notification do not impede effective processes, including the notification of an athlete's selection and the understanding of their rights and responsibilities for doping control. If an interpreter (including from the LOC) is not present, multi-language cards should be readily available. The need for language fluency is greatest for OOC missions when an athlete may not be expecting an approach from doping control staff.

Another issue around staff management which requires further consideration relates to the balance between workload and staffing. It was noted that most DCOs and chaperones worked eight-hour shifts yet performed only one test or one notification per shift. It was also obvious on several occasions that there were an excessive number of chaperones present in DCSs.

LOC Recommendation no. 6

Multi-language cards should be available for use by chaperones at the point of athlete testing notification, and those chaperones possessing the best language skills should be dedicated to the out-of-competition missions in the Athlete Village(s) and other venues.

9.2 Specific staff roles and responsibilities

Most of the local DCOs performed their roles admirably. That said, the skills of some of the most capable local DCOs were not fully utilized as they were instead assigned to administrative or management roles. This resulted in some frustrating encounters for athletes. On at least one occasion, an athlete requested the entire sample collection process be ceased midway through and recommenced with an IDCO instead due to their inability to communicate effectively with the local DCO.

The IO Team was generally impressed with the manner in which the DCSs were managed. The stations themselves appeared adequate, clean, well equipped and maintained. This was largely due to the efforts of the DCSMs and Coordinators assigned to the stations who, as indicated above, were among the most competent of the local DCOs. Unfortunately the efficiency of the stations themselves seemed to have priority over the effectiveness of the interactions between DCOs and athletes. The IO Team recommends alternate models be considered such as using IDCOs as Deputy DCSMs and/or combining the roles of DCSM and Coordinator, thus freeing up skilled capacity to be either deployed to the DCCC or back to the key role of DCO which, after all, is their core business.

Language and communication skills of the chaperones and local DCOs did not appear to have been adequately evaluated or tested. This may have been due to emphasis being placed on securing staffing numbers and ensuring drop-out prevention rather than focusing on the individual's capacity to fulfill their task. Subsequently, many of the chaperones were not able to communicate satisfactorily in English and could not fulfill their duties properly because they could not interact with athletes and explain their role and responsibilities.

The IO Team is of the view that the importance of the chaperone role and functions was perhaps underestimated in the recruitment process. Unfortunately, the lack of training for chaperones resulted in situations where they were observed running after athletes for notification delivery or were observed being intimidated by the athletes.

It is noted the chaperones attended a workshop six months prior to the Games, and then were brought together again a couple of days before commencing duties. For a contingent of over 500 participants, this is considered insufficient to empower chaperones to deal with the many challenges faced during the Games.

In particular, language proficiency and knowledge of the anti-doping procedures need to be included in training and final selection of those fulfilling doping control roles.

LOC Recommendation no. 7

Specific role requirements should be stipulated to clearly define profiles and training requirements for each category of the doping control staff and should be standardized for Major Events. In particular, language proficiency and knowledge of the anti-doping procedures should be included in training and final selection of those fulfilling doping control roles. WADA's Guidelines for Major Events (<https://www.wada-ama.org/en/resources/world-anti-doping-program/guidelines-for-major-events>) could be utilized as a reference to help in this regard.

9.3 International Doping Control Officers

The long-established IDCO program has proven over successive Games to be extremely successful. The IO Team is of the view that the IDCO presence in PyeongChang was a critical success factor for the doping control program. IDCOs bring a wealth of international expertise, knowledge, skills and abilities, including diverse language skills, while ensuring global representation. That said, it is important that individuals selected to perform the roles of IDCOs are recruited based not only upon their previous experience but also taking into account their interpersonal skills and capacity to integrate effectively and foster cooperation and teamwork with local staff.

The IO Team considers that better integration and facilitation of a team environment among IDCOs and local staff could be achieved if greater pre-Games time was dedicated to on-site training and team building activities. Such activities should include a focus on greater consistency in the approaches to be taken by all DCOs, local and international, and on processes and protocols for the particular Major Event they are attending. As an example, the multiple and different approaches taken in PyeongChang by DCOs towards management of the excess chain of custody barcode stickers created some unnecessary confusion and complaints by athletes.

The opportunity for knowledge transfer in the DCSs is huge, and the most effective IDCOs in PyeongChang shared their expertise and enhanced the competence and confidence of local staff.

Despite some preventable rostering and logistical issues, which caused frustration and discomfort for some IDCOs, they generally just got on with the job and added great value to the overall effectiveness of the doping control activities. It should also be noted that the IO Team received a number of comments from IDCOs regarding their accommodation. In some instances, IDCOs had to travel for hours to reach the Villages and/or competition venues and in others, some IDCOs, due to the insufficient number of beds in the rooms, had to sleep on the floor.

The IO Team was surprised that the model of integration of IDCOs into the DCSs, which was very successful, was abandoned for the final day of competition, which featured four events at four different locations requiring the collection of multiple samples. Due to circumstances or planning, there were no IDCOs present for the last day of competition – a situation that created a potential risk and vulnerability which could have been avoided.

LOC Recommendations no. 8-9

Considering IDCOs come from different ADOs, where the sample collection kits and specific procedures often differ slightly, it is recommended that a pre-Games on-site workshop attended jointly by IDCOs and local DCOs, including scenario training and exams, be held to ensure consistency.

The LOC should also plan to keep some IDCOs engaged until the very end of the Games.

IOC Recommendation no. 20

As was recommended in previous Olympic Games' IO reports, the IOC should consider building a provision in the host city contract to cover all costs of IDCOs, including travel, meals, per diems and accommodation.

10. Sample collection management

10.1 Doping Control Command Centers

A DCCC was set up in each of the two Athlete Villages located in PyeongChang and Gangneung. The main DCCC was in PyeongChang. The IO Team was advised that the main responsibilities of the DCCC included maintenance and delivery of the TDP and allocation of human resources against the TDP. The DCCC also performed a logistics function, overseeing the supply of sample collection kits and related materials, sample transportation, management and other logistical supports for each DCS.

While the PyeongChang DCCC was physically adequate, it did not have sufficient resources or expertise to actually act as a central 'command center' for the doping control activities. Instead of being an information and intelligence hub issuing directions as in a 'hub and spokes' model to the various DCSs, it was instead placed in a position where it simply reacted to decisions made elsewhere regarding changes to the TDP or test missions. Moreover, the IO Team found that despite the LOC staff's efforts towards the issuance of daily mission orders for both Athletes Villages, the lack of manpower within the PyeongChang DCCC assigned to such tasks was one of the main causes for the low completion rate of daily targeted testing conducted in the Villages.

Ideally, greater command and control should have been vested in the DCCC and it should have been the 'go-to place' for key meetings and decision-making in relation to all of the doping control activities. It should also house risk assessments and contingency plans pertaining to each DCS. Such plans should ensure there is a consistent response to any particular issue (e.g., an athlete refusing a test or an athlete being injured) which may arise at one or more of the DCSs.

10.2 Information dissemination

Timely information dissemination could have been an additional role performed through the DCCC to ensure consistency across the various DCSs. On several occasions, decisions were taken in relation to particular aspects of the doping control processes which took several days to become known and embedded across the DCSs. Examples included issues raised by the IO Team in relation to some refrigerators in DCSs being unlocked, DCS access control not being standardized, and usage of cell phones in processing rooms. Stronger directional control and communication from the DCCC could have seen a consistent approach to these issues being adopted more swiftly.

LOC Recommendation no. 10

Establishment of a properly tasked, staffed and functioning DCCC can be a significant asset in ensuring effectiveness and efficiency across the entire doping control program. The DCCC should be a hub for decision-making, intelligence and information analysis, and command and control. It should house all relevant doctrine and include facilities for daily management meetings.

10.3 Doping Control Stations

DCSs were located at each competition venue, as well as at the two Athlete Villages and the PyeongChang Olympic Plaza (where medal ceremonies were held). There were also four mobile DCSs (vans) available for target testing or transferring athletes from venues to the medal plaza. Generally, the DCSs were found to be functional, spacious and well equipped.

Unfortunately, the lightly constructed DCS in the Gangneung Village was partially destroyed by strong winds. As a safety precaution, doping tests were suspended until the facility was repaired the next day. Other DCSs located in permanent buildings suffered no down time.

The IO Team noted on a few occasions that the morning shift at the Villages' DCSs was busy, which resulted in athletes having to wait for a long period of time before being called to process their samples. The large number of missions conducted in the morning in comparison to the number of processing rooms in the DCS created a bottleneck effect. The delays generally further aggravated the athlete's experience given that after being awoken from their sleep and required to go to the DCS, they found themselves having to wait for sometimes two hours before being called to provide their samples. In addition, there were occasions in indoor venues when the lack of chaperone waiting rooms led to overcrowding of the DCS during high volume testing periods.

LOC Recommendation no. 11-20

Whereas the IO Team finds that unpredictability of the target testing should be increased during the out-of-competition period and testing should thus not occur only in the morning, the DCSs in the Athlete Villages should have the capacity to process large numbers of athletes at the same time. The LOC should ensure that DCSs in the Athlete Villages have the capacity to process large influxes of samples within short time periods.

The LOC should also ensure that chaperone waiting areas are available in all high volume DCSs to avoid overcrowding of the DCS.

10.4 Registration and security at the Doping Control Stations

No security staff were present in front of some of the DCSs, which meant anyone was free to enter. Having the check-in and check-out desk inside the waiting area, rather than at the entrance of the DCS, would provide greater access control. There was also some confusion and inconsistency in relation to the requirements for persons holding a DCS Pass to sign the register each time they entered or departed the DCS.

LOC Recommendation no. 13

DCS access control should be made more robust by adding security personnel, setting the access control at the entry and ensuring all persons entering or exiting sign the relevant register.

10.5 Sample collection

As discussed previously, there was a general sense of suspicion over doping controls and processes lingering over the Games. Unfortunately, where athletes or athlete support personnel detected inconsistency or differences in the way sample collections were conducted, they tended to become even more suspicious. Examples of inconsistencies in processes being questioned and causing some frustration included:

- Use in some DCSs of two different kits – a version with plastic bags and another without plastic bags¹⁰;
- Disposal of the excess chain of custody barcodes;
- Waiting periods before checking specific gravity readings;
- Introduction of all present in the processing room;
- Presence or otherwise of a chaperone with a support person when the DCO and the athlete were in the toilet cubicle;
- Timings around advising athletes of their rights and responsibilities; and
- Partial samples being stored in 'A' or 'B' bottles.

As discussed previously, some of these matters may appear relatively minor but when they arise in a climate of suspicion and are difficult to deal with because of communication barriers, they can quickly lead to an escalation of tension.

11. Security, transport and chain of custody of samples

WADA's International Standard for Laboratories (ISL) recommends that MEOs consider transporting samples to the existing facilities of a WADA-accredited laboratory instead of establishing a new satellite laboratory facility, which would require significant resources and efforts. However, the ISL also recognizes that, in some cases, the reporting time requirements for a Major Event may demand that the laboratory facility be located in proximity to the competition so that samples can be delivered by doping control staff. For the 2018 Games, the existing WADA-accredited laboratory located in Seoul (Doping Control Center of the Korea Institute of Science and Technology, KIST), located approximately three hours by car from PyeongChang, was utilized for analytical testing services.

POCOG staff delivered samples to the laboratory by fleet vehicles three times per day. On three separate occasions, an IO Team member observed the transfer of samples from a DCS to the DCCC and subsequently to the secured zone in the laboratory.

¹⁰ To comply with the International Air Transport Association's (IATA) packaging regulations for the transportation of 'exempt human specimens', most Berlinger sample collection kits contain two watertight plastic bags. If samples are transported via planes, Berlinger bottles, once sealed, must be placed in those plastic bags. Given that samples were transported by car to the Seoul laboratory during the Games, there was no need for the Berlinger bottles to be placed in those watertight plastic bags. To address the 'recall' issue regarding the Berlinger kits, some of the kits that were used had plastic bags and some (i.e., those that were issued specifically for the Games) did not.

During a collection session, collected samples were kept in secured refrigerated conditions in the DCSM office until the session was completed and all athletes and support personnel had left the DCS. The DCS was locked and all samples were placed into transport bags and sealed with tamper-evident and numbered blue security seals. Blood samples were transported in portable refrigerator coolers, which were also secured with the tamper-evident and numbered blue security seals. The samples were brought to a POCOG fleet vehicle and driven from the venue DCS to the local DCCC (PyeongChang or Gangneung) for secure storage until the next scheduled delivery to the laboratory. In case of samples collected in the Coastal Cluster (Gangneung), the delivery car sometimes stopped by the Coastal DCCC to pick up additional samples stored from earlier events, and then drove to the Mountain DCCC (PyeongChang) in order to pick up any further samples stored at that location before proceeding to the laboratory in Seoul. The transport schedule from the Mountain DCCC to the laboratory was generally conducted at 17:00, 23:00 and 2:00-3:00 (depending on the last samples collected from the late events) each day.

The DCFs were provided in sealed envelopes, which contained copies to be delivered to each of the relevant organizations including the IOC, POCOG, the IO Team and the laboratory.

The POCOG staff delivering the samples worked in teams of two (as recommended in the Rio IO Report). One signed the Chain of Custody Forms (which were signed to record the transfer of samples from the DCSM to the DCO, DCO to DCO in some cases and DCO to the laboratory) and assumed custody of the samples while the other drove the POCOG vehicle.

The DCOs picking up the samples at a mountain cluster venue:

- took custody of the samples to the Mountain DCCC in order to drop off the samples for storage until the next scheduled delivery to the laboratory; or
- took custody of the samples to the Mountain DCCC where additional stored samples were included in the shipment to the laboratory.

The DCOs picking up the samples at a coastal cluster venue:

- took custody of the samples to the Coastal DCCC in order to drop off the samples for storage until the next scheduled delivery to the Mountain DCCC; or
- took custody of the samples to the Coastal DCCC where additional stored samples were included in the shipment to the Mountain DCCC for storage until the next scheduled shipment to the laboratory; or
- took custody of the samples to the Mountain DCCC where additional stored samples were included in the shipment to the laboratory.

While there were teams of two working together to securely transport samples from the venue to the laboratory, there were two instances in which both POCOG staff left the vehicle to go through the necessary security checks upon entering the Athlete Villages (where each of the DCCCs were located), leaving the samples unattended for a few minutes. However, there was no impact and no issue was noted with regard to sample integrity by POCOG or the laboratory.

Once the vehicle arrived at the main gate of the laboratory, the laboratory security verified the identities of the POCOG staff and called the laboratory regarding the delivery. The POCOG vehicle would enter through a gate into a restricted space with the help of laboratory security staff. The gate was closed behind the vehicle before the samples were removed. The samples were then handed over to the laboratory reception staff.

The sample transportation procedures put into place ensured the integrity of the samples from collection to delivery to the laboratory. In these Games, the maintenance of custody was multilayered and included a combination of secured storage and possession by POCOG staff. In addition, the documented chain of custody provided a sufficient level of confidence in the security of the anti-doping procedure from the time the sample left the athlete's view to the reception at the laboratory.

12. Seoul laboratory

12.1 Enhanced security measures

The Seoul laboratory's security was based on a multi-level approach. At the first level was the security of the KIST campus (where the laboratory resides), which imposed a restricted access by which each vehicle/individual entering the campus was recorded and documented. At the second level, the building in which the laboratory is located within the campus had restricted access for staff upon entrance into the building (KIST electronic card key). Finally, the laboratory entrance on the sixth floor was controlled by an electronic card key and biometric access system (fingerprints). The entrance was also monitored 24 hours a day by a security guard. Presentation of the e-key card and fingerprint recognition was required to enter and exit each room within the laboratory.

Further, four security guards monitored the laboratory 24 hours a day including the CCTV cameras installed at each entrance point of the laboratory as well as within the laboratory hallways and analytical rooms. Particular focus was placed on the sample reception, processing and storage rooms. Security guards monitored the camera images at the laboratory entrance on the sixth floor of the building and in the main security office in the basement. No issues were observed with this comprehensive monitoring system.

After sample receipt and registration at the laboratory, the 'A' and 'B' bottles were stored in a secured sample storage room, which was monitored by a combination of physical and electronic surveillance 24/7. This included personalized recorded access (e-key card plus fingerprint recognition). The laboratory implemented a system limiting the entry of only two persons into the sample storage room. If only one person or more than two persons entered the sample storage room, the system would set off an alarm and security would investigate. It was noted that the principle should have prevented having only one person to operate in the sample storage room alone and not to necessarily limit access to two persons. The system required that the first person entered and then after a few seconds, the second person was allowed to enter. This resulted in the first person being in the sample storage room alone, albeit, for a very short period of time. However, it was noted that the CCTV monitoring by security was key and therefore there was no impact on the integrity of the stored samples.

12.2 Staffing arrangements

The laboratory supplemented their 25 permanent staff members with approximately 50 trained national volunteers who were selected from a pool of university students. In addition, the laboratory invited approximately 40 international experts from other WADA-accredited laboratories. The experts were chosen to complement the existing staff and allow high level scientific expertise to be distributed throughout the shifts required for the 24-hour a day operations. The international experts were placed into various shifts to complement the South Korean scientists in most of the test methods.

12.3 The Norovirus impact

Early in the Games Period, several laboratory staff experienced an unfortunate illness that seemed to be connected to the outbreak of the norovirus identified in PyeongChang. It is estimated that up to 40 staff members fell ill within the first week of the Games, which included national volunteers as well as local and international experts. While this did not lead to a full interruption in the laboratory operations, there was a temporary delay in the reporting of results in the few days when the number of sick staff was at a maximum.

12.4 Sample reception

After the transfer of samples from POCOG to the laboratory staff in the basement of the building, samples were verified against the accompanying DCFs and chain of custody paperwork before transferring the samples to the sixth floor processing room, using a dedicated elevator, where the 'A' bottles were opened and the details were recorded into the Laboratory Information Management System (LIMS).

12.5 Sample storage

The 'B' samples were moved immediately into the sample storage room's locked freezers through a secured door which operated with an electronic access system that only allows two people to enter the space (see above). In addition, all persons entering the sample storage room had to sign a logbook including time of entry and time of exit. 'A' bottles were stored in locked refrigerators in the sample storage room after the aliquoting procedure was completed. Two CCTV cameras at both ends of the room allowed security to monitor the entire sample storage room and react if anything unusual was detected. No security incidents were registered during the Games as far as the IO Team is aware.

In addition, as with prior Games, the IOC will make arrangements for the samples to be transported to the WADA-accredited laboratory in Lausanne, Switzerland for long-term storage as part of the IOC's further analysis strategy.

12.6 Sample analyses

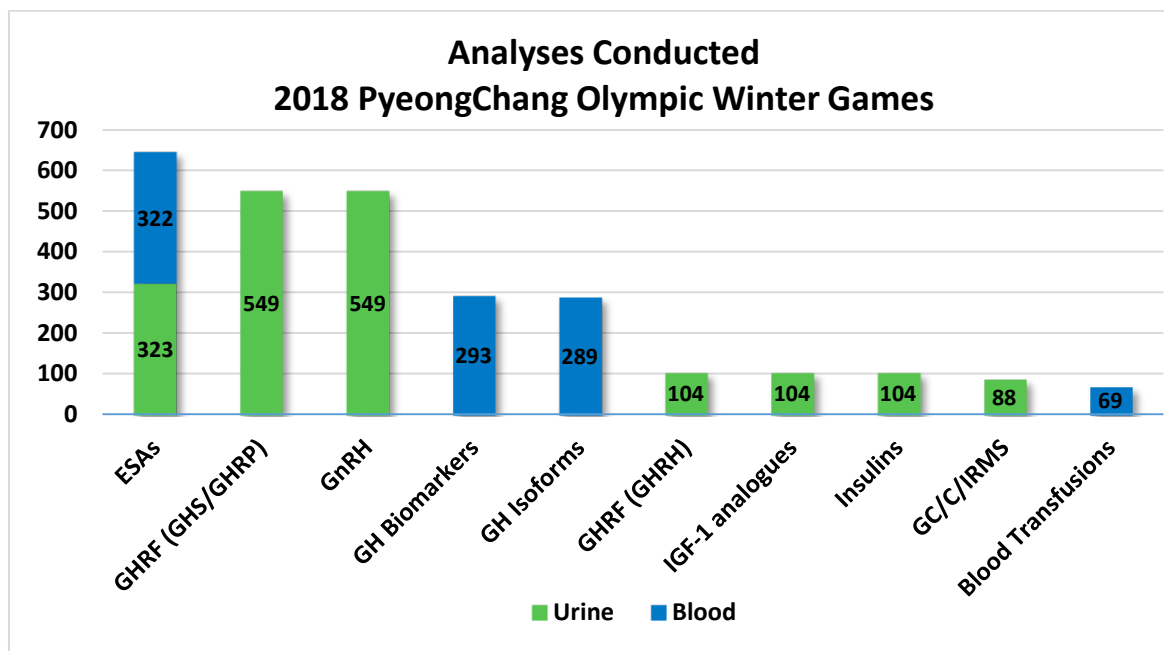
In addition to the standard testing menu in urine and specific mandatory tests (GC-C-IRMS, hGH isoforms, ESA, small peptides), the laboratory also implemented additional methods (including hGH biomarkers testing, large peptide analyses and HBT) and the associated state-of-the-art instrumentation (e.g., multi-stage and high resolution mass spectrometers) required by the IOC for testing during the Games. In this regard, confirmation of the decision by the IOC to perform HBT analysis was received by the laboratory only in December 2017, and the laboratory was not fully prepared to apply this optional method for the Games. This method being a non-mandatory one which was not applied by the laboratory on a routine basis, a huge effort was required from the laboratory in the days before the start of the Games Period, with the support of international experts, in order to ensure that the method was ready for analysis.

IOC Recommendation no. 21

The IOC should inform the laboratory of any additional methods to be implemented during the Games, which are not part of the standard testing menu (i.e., applied to all samples) or do not constitute specific mandatory methods as determined by WADA (applied to specific samples upon request by the testing authority, e.g., hGH isoforms, ESA, IRMS or small peptides) well in advance (at least six months) before the start of the Games testing.

The Seoul laboratory tested all urine samples for all substances on the standard sample analysis menu but also for small peptides (e.g., Growth Hormone Releasing Peptide [GHRP], Gonadotropin-releasing hormone [GnRH]). Where requested by the IOC, the laboratory also tested the urine samples for large peptides (Growth Hormone Releasing Hormone [GHRH], Insulin-like growth factor 1 [IGF-I] analogs, insulins) and ESAs, and/or conducted GC/C-IRMS analysis to establish the origin (endogenous or exogenous) of the steroids found in the sample. For blood samples, the laboratory also conducted testing for hGH in blood (isoforms test and biomarkers test on select samples) and for ESAs in serum, as well as for ABP markers, HBT and ESAs in whole blood/plasma.

Below is a graph outlining the numbers of samples that underwent additional analysis by the Seoul laboratory for the various prohibited substances that are not normally screened in a standard test menu.



12.7 Reporting results of analyses

The agreed turnaround times for reporting of negative analytical results was 24 hours (standard analytical menu) and up to 72 hours (ESAs/IRMS). The agreed turnaround times for AAFs was approximately 72 hours and they were reported in less than three days on average.

Approximately 77% of the results were reported by the next day after sample reception. A majority of these samples did not require ESA or IRMS analysis.

In total, 15 AAFs were reported by the Seoul laboratory, some of which were covered by TUEs, while 6 were pursued and upheld as ADRVs. For further detail, see section 16.5 of this report.

All results were reported into ADAMS.

In accordance with ISL Article 5.2.4.3.1.1, when a beta-2 agonist or a glucocorticoid was identified on initial testing of a sample, the laboratory did not proceed immediately to confirmation, but instead issued TUE enquiry forms to ask the IOC/GAISF DFSU whether the athlete in question had a TUE for the substance identified. Using this standardized request form allowed the IOC/GAISF DFSU to respond whether or not the laboratory should confirm the beta-2 agonist or glucocorticoid based on the existence of an appropriate TUE. The IOC/GAISF responses were received within a reasonable timeframe and the laboratory was able to report the results with minimal delay.

Further delays in the reporting of AAFs were mainly attributed to the IOC's/GAISF DFSU's requirement that the data be reviewed prior to reporting into ADAMS by the directors of other WADA-accredited laboratories that served as IOC/GAISF DFSU experts in the laboratory.

Four WADA-accredited laboratory experts, appointed by the IOC and reporting to the GAISF DFSU, were present in the Seoul laboratory for the Games based on various shifts (or on call). While the Rio IO report had noted that the roles and responsibilities of IOC-appointed laboratory experts in the laboratory as observers, as advisers to the IOC, or as advisers to the laboratory director on behalf of the IOC, were not always entirely clear and had recommended that terms of reference be set out for them and a careful review of any potential conflict of interests be conducted, the roles and responsibilities of these experts at the Seoul laboratory were again not entirely clear to the IO Team. These experts, although directors of WADA-accredited laboratories themselves, were appointed by the IOC and accepted by the GAISF DFSU, and therefore were not part of the pool of international anti-doping scientists (also from WADA-accredited laboratories) recruited by the laboratory to provide analytical testing and results review support during the Games

On at least one occasion, the IOC/GAISF DFSU experts were intimately involved in the data review and decision-making procedure of the laboratory director and deputy director prior to the test result conclusion and reporting into ADAMS¹¹. It is considered that such practice should be reserved only to the laboratory staff and the international scientific experts operating within the laboratory's Quality Management System for the Games. It is on this basis that the Seoul laboratory was evaluated in three separate pre-Olympic site assessments conducted by WADA. It is recognized that on some occasions, it is acceptable to seek a review from another WADA-accredited laboratory, such as one having more extensive experience with the application of a particular technique, the scientific interpretation of particular test results or reporting of a particular substance, for a second opinion (in the case of ESA or IRMS results as common examples). However, this process should not, in any case, involve experts representing or operating under the umbrella of the Testing Authority. For the sake of clarity, it must be noted that the IO Team did not observe any undue interference from the IOC or the DFSU in the conduct of the analyses.

IOC Recommendation no. 22

As was already noted in the Rio IO Report, it is strongly recommended that the practice of having external experts appointed by the IOC in the laboratory during the Games testing period is not continued at future Games. There should not be any experts in the laboratory representing or operating under the umbrella of the Anti-Doping Organization acting as Testing Authority. While the presence of external experts for support during the Games is encouraged due to the high number of samples to be analyzed, as well as the application of additional, complex testing methods and the short results reporting times, the appointment and scope of activity of such experts should be the responsibility of the laboratory director, and should be defined in the laboratory's Quality Management System for the Games. This ensures total operational independence of the laboratory from the Anti-Doping Organization acting as Testing Authority, as established in WADA's International Standard for Laboratories (ISL, Article 4.4.3).

12.8 B sample confirmation procedures

Only two 'B' confirmations were conducted, in which the athlete and athlete representatives were present for the opening of the sample. On one of those occasions, a member of the IO Team was also present. The laboratory director and deputy director conducted the 'B' sample opening, which allowed the athlete to verify the integrity of the sample

The athlete and representatives were brought into the laboratory through the basement vehicle secure zone, which provided a measure of anonymity for the athlete. The athlete and representatives were then taken into the dedicated 'B' confirmation room to witness the opening of the 'B' sample.

¹¹ On one occasion, the WADA IO laboratory expert was also consulted on the interpretation of a specific reporting requirement in a WADA Technical Document.

The 'B' sample was brought into the 'B' confirmation opening room from sample storage by the laboratory analyst. The 'B' sample had been transferred from the secure freezer to a secure refrigerator the night before so that the 'B' sample was thawed at the time of the opening. This process was duly recorded in the 'B' sample's laboratory internal chain of custody. The participants signed the laboratory's 'B' confirmation form confirming the integrity of the 'B' sample after being inspected by the athlete and finding the bottle to be intact. The laboratory then processed the sample in front of the athlete and representatives including the opening of the 'B' bottle and the pouring of a portion (aliquot) into a test tube. From the test tube, aliquots were taken for the analytical procedure. All test tubes were taken from new unopened (sealed) packaging. The athlete was provided a choice of numbered "green caps" to select in order to re-seal the 'B' bottle. The sample was then re-sealed by the laboratory deputy director using the selected green cap and then provided to the athlete to verify the integrity. The green cap number was recorded and signatures were placed on the form.

The athlete was provided the opportunity to witness the entire procedure but stayed until an aliquot of the sample was undergoing the extraction procedure.

The observed 'B' confirmation procedures were conducted in compliance with the ISL and no issues were identified by the relevant participants to the knowledge of the IO Team.

12.9 Double-blind External Quality Assessment Scheme Samples

The double-blind External Quality Assessment Scheme (EQAS) is an essential part of the quality control of laboratory processes during the Games. Six WADA EQAS double-blind samples (i.e. the laboratory assumes that these are doping control samples, being unaware that they constitute WADA EQAS samples or of their content) were sent to PyeongChang, to the attention of the IOC/GAISF DFSU, in order to be introduced anonymously into the sample collection procedure at the DCS for analysis by the Seoul laboratory. Unfortunately, on this occasion, the first batch of EQAS samples sent by the WADA EQAS sample provider did not contain sufficient urine volume to fulfil the minimum volume requirement for both the 'A' and 'B' bottles. This unexpected situation required that WADA (the IO Team laboratory expert) and the GAISF DFSU member present in the DCS introduce the first two EQAS samples with a less than required 'A' sample volume. The laboratory correctly reported this non-conformity to the GAISF DFSU and proceeded to analyze the samples. Subsequently, WADA arranged for a second set of EQAS samples to be delivered for the Games in order to meet the minimum volume requirements.

The process of introducing the double blind EQAS samples into the sample collection procedure was conducted by a member of the GAISF DFSU and was observed on several occasions by the IO Team representative in charge of observing laboratory operations. The Seoul laboratory correctly identified and reported all the prohibited substances present in the six EQAS samples within the established reporting deadlines, demonstrating the reliability in its analytical and reporting procedures and its compliance with the mandatory requirements of the ISL.

WADA Recommendation no. 4

WADA should double-check with its EQAS sample provider the protocol for preparation of double-blind EQAS samples for the Games, to ensure that they meet the sample volume requirements that guarantee the performance of all necessary tests.

13. Therapeutic use exemption procedures

As was done at prior Games, the IO Team reviewed the procedure and processes for the handling of TUEs in PyeongChang but did not review the content of the medical files or the rationale for the decisions made by the TUEC to recognize, grant or refuse a TUE. This is the role of WADA's Science and Medicine Department, which has a permanent right of review in these matters.

Under the IOC ADR, athletes were required to submit existing TUEs granted by their IF or their NADO for recognition by the TUEC, as well as requests to grant new TUEs in PyeongChang, prior to the Games. To avoid exchanges by email, the IOC only permitted new applications to be made either via ADAMS or in hard copy through a secure mailbox located in the pharmacy of the two Athlete Villages' polyclinics.

For these Games, the IOC outsourced the responsibility of putting in place a TUEC to the GAISF DFSU. The GAISF DFSU appointed before the Games six physicians from the IOC 'Games Group' – a larger group of international medical experts responsible for monitoring health issues at the Games. All six had previous Olympic Games' experience and robust medical expertise. For each TUE review, three members without any potential link to the athlete or the same nationality were selected. They were supported by a pharmacist with considerable anti-doping experience.

In total, the Games' TUEC reviewed 24 requests for TUE recognition and 13 new TUE applications in PyeongChang – a low number compared to the 69 recorded at the previous Winter Games in Sochi. The TUEC recognized all 24 previously granted TUEs and approved all 13 new TUE requests, such that 37 athletes in total held a TUE during the Games. Details of the substances and methods involved can be found in section 16.4 below. Given that a total of 2,963 athletes participated in the Games, the percentage of athletes who held a TUE during the Games was 1.2%.

The IO Team was impressed by the professionalism and thoroughness of the TUEC – which was welcomed in an environment of certain athlete mistrust towards TUEs (see section 6 above). The TUEC Chair requested permission from relevant ADOs to access medical information for all existing TUEs for review. This was, as far as the IO Team is aware, the first time that this was done at the Games in such a systematic way. However, this diligence resulted in a number of administrative challenges for the TUEC to receive all relevant medical files from ADOs in the short time between the arrival of its members in PyeongChang and the opening of the Games. Ultimately, the TUEC was able to review all medical files and create records of all their decisions. The new TUEs were then promptly entered into ADAMS by a KADA staff member seconded to assist the TUEC during the period of the Games, which enabled WADA to exercise its review rights in a timely manner.

IOC Recommendations no. 23-24

To ensure the TUEC has sufficient time and human resources to review thoroughly existing TUEs before the Games and new requests at Games time, the IOC should consider the following:

- Contacting all relevant IFs and NADOs ahead of the Games to ask permission to request athletes with an existing TUE who are included in the IOC shortlist (a list of participating athletes that is generally completed a few weeks before the start of the Games) to provide access to their medical information in ADAMS to the IOC or the body to which it outsources this activity; and
- For Olympic Summer Games, where the number of athletes is much higher than at Winter Games, increasing the number of appropriately qualified TUEC members, with appropriate geographic spread (a member cannot review the TUE of an athlete of the same country or nationality), and/or bringing the TUEC members together earlier before the opening of the Games.

WADA Recommendation no. 5

WADA's Science and Medicine Department could consider briefing the Games' TUEC ahead of the Games in order for the TUEC members to be aware of developing or recent issues or trends with respect to doping and TUEs.

14. Results management

The RM for potential ADRVs that arose during the Games was conducted in an efficient manner overall. The GAISF DFSU, the entity responsible for coordinating RM on behalf of the IOC, conducted the initial review as soon as an AAF was reported by the Seoul laboratory. This allowed for the prompt notification to the athletes concerned and their respective delegations, as well as the transfer of the file to the IOC's Legal Services, who were responsible for taking the case before the ADD-CAS, if necessary.

All of the potential ADRVs that occurred during the Games were 'presence' cases (article 2.1 of the IOC ADR) and many AAFs detected at low levels required careful expert review. The situations that arose that could have amounted to potential non-analytical ADRVs (e.g., evasion, refusal, failure to submit to sample collection, etc.) or disciplinary actions were considered by the GAISF DFSU in reasonable timeframes. However, given that such ADRVs often rely on witness evidence, for future Games, it would be useful if an investigator (and/or additional lawyer) was part of the IOC/GAISF DFSU staff assigned to evidence gathering who would ensure that follow-up actions and processing of the potential cases occur in a prompt and effective manner during the Games. Further, the review process should be formalized and include an audit trail.

While the RM processes generally worked smoothly, the IO Team was informed that communicating information became difficult due to information technology security concerns that arose at the outset of the Games, which resulted in a decision to not send confidential information via email. Instead, a secure file sharing system was set up so that information could be safely transferred. However, it should be noted that, due to the complexity of passwords and the need to encrypt all communications, the end result was a cumbersome process that compromised efficiency. The IO Team recognizes that information technology issues can sometimes be unpredictable; however, for future Games, the IO Team recommends that an efficient and secure communications system is put in place in advance of the Games so that communications can be conducted smoothly and efficiently.

IOC Recommendations no. 25-27

The IOC ADR should clearly include the possibility to request explanation with regards to the route of administration at the initial review stage in case of an AAF for glucocorticoids. More generally, additional time should be allowed for the initial review stage of all potential cases to avoid unnecessarily seizing the ADD-CAS for cases that could have otherwise been closed for valid reasons at an earlier stage.

The IOC should consider having an investigator/staff on site to follow up on potential non-analytical ADRVs. The review process pertaining to non-analytical ADRVs should be formalized and include an audit trail.

An efficient and secure communications and information technology system should be put in place in advance of the Games so that communications can be conducted securely and efficiently.

15. Case adjudication

The IOC used the same adjudication structure as the one put in place for the 2016 Summer Olympic Games in Rio. The ADD-CAS was once again used as the first instance level of adjudication for doping cases that arose during the Games. A new feature for these Games was that the relevant IFs could act as co-applicants before the ADD-CAS for the purpose of adjudicating the consequences that would apply to the ADRV beyond the scope of the Games (i.e., the appropriate period of ineligibility).

Although there were limited opportunities to test the effectiveness of the procedure described above, the IO Team noted that, in the cases that were heard before the ADD-CAS where the IF joined the proceedings as a co-applicant, there was a certain degree of confusion in the proceedings. For example, while it was acknowledged that the IOC ADR applied to establishing the ADRV and the disqualification of results obtained during the Games, as well as the athlete's removal from the Games, it was not always clear that the relevant IF's Anti-Doping Rules applied to the provisional suspension beyond the Games and the period of ineligibility to be imposed. It is the IO Team's understanding that some IFs had mistakenly believed that delegating the first instance proceedings to ADD-CAS included delegating the task of prosecuting the ADRV to the IOC and/or another body. Further, it is possible that having the IF as co-applicant could potentially lead to difficulties during the hearings in situations where the authority responsible for establishing the ADRV (the IOC) and the IF disagree on certain facts that are critical to the case.

Although the IO Team will not participate in the hearings that were postponed until after the Games, it is recognized that having the ADD-CAS rule on the entire case can have benefits from an efficiency perspective. The IO Team would encourage CAS and the IOC to ensure that the procedural aspects of this procedure are clarified for the next Games should it be decided to continue with this format.

The IO Team is of the view, noting there were relatively few cases, that CAS arbitrators and staff were sufficient in number and well-versed so that all cases could be handled fairly. Further, the IO Team notes that the parties to each case were provided with reasonable deadlines to make submissions and with the opportunity to be heard promptly. It should also be recognized that simultaneous translation was provided during hearings and CAS accommodated the athletes and their representatives as much as possible.

The IO Team also noted the common occurrence of postponing hearings with respect to the consequences to be imposed beyond the scope of the Games (and for certain cases, regarding establishment of the ADRV) until after the Games once an athlete had agreed to a provisional suspension and to leave the Games. In this regard, while the expedited nature of the ADD-CAS proceedings are fitting and justified in the context of the Games to ensure that immediate and appropriate action is taken in order to ensure that the Games are not unnecessarily disrupted, it must be said that it is often the case that more time is needed to prepare submissions and obtain the necessary expert opinions to properly handle a case. This applies to both establishing the ADRV and determining the consequences that apply beyond the scope of the Games.

One specific case could have benefited from additional time to determine the consequences applicable beyond the scope of the Games. After the IOC established the ADRV, the relevant IF withdrew the case before the ADD-CAS and entered into an acceptance of sanction agreement with the athlete after it accepted the athlete's explanation or the available evidence, which was not scrutinized by an adjudication body such as the ADD-CAS. In order to properly assess the conclusion in this case in the absence of a reasoned decision by the ADD-CAS, the parties with a right to appeal must request the case file to evaluate whether the IF's conclusion was appropriate and if not, an appeal may be necessary.

Notwithstanding the above, the IO Team encourages the ADD-CAS to pursue this approach for future Games, which protects all parties' right to fair proceedings provided that the postponement does not leave any Games-related issue unresolved.

In terms of the applicable rules, the IO Team found that it would have been helpful if the IOC ADR listed the grounds that must be considered by the ADD-CAS when it exercises discretion to impose an optional provisional suspension provided for in Article 7.6.2. of the IOC ADR. The IOC should also review Article 10.2 of the IOC ADR (Ineligibility and other consequences) to clarify whether the intent is to grant discretion to the ADD-CAS to determine the (in)eligibility of an athlete who has been found to have committed an ADRV during the Games.

Moreover, the provisional suspension, whether imposed or accepted under the IOC ADR, should include exclusion from the Games and loss of accreditation to align with the practice of postponing the hearing on the finding of the ADRV until after the Games¹².

¹² Article 10.2 of IOC ADR provides that exclusion from the Games and loss of accreditation are consequences once the athlete has been found to have committed an ADRV and thus declared 'ineligible'. In the event that a ruling on the finding of the ADRV is postponed until after the Games, which can be fair, the provisional suspension should include exclusion of the Games to ensure that the athlete with a pending case not only does not participate, but is also no longer present at the Games, based on the assumption that this approach is the IOC's intent.

Lastly, the IO Team notes that the confidentiality of the proceedings was not always respected by the parties. In certain instances, the ADD-CAS learned of a case through the media before it was officially seized by the IOC. The IO Team considers this to be unfortunate and would recommend that the IOC emphasize the need to ensure the confidentiality of proceedings and that it provide for the possibility of Games-related consequences to be imposed against parties that do not respect their obligations in this regard.

IOC Recommendations no. 28-31

The IOC should maintain the ADD-CAS adjudication framework.

The IOC should clarify provisions on provisional suspension and ineligibility.

The IOC/ADD-CAS/IFs should ensure clarification of rules and roles to ensure that all parties participating in proceedings understand the process.

The IOC should emphasize to all parties involved in a case the need to ensure the confidentiality of proceedings and enable the possibility of Games-related consequences to be imposed against parties that do not respect their obligations in this regard.

16. Appendices

16.1 IO Team pictogram



INDEPENDENT OBSERVER TEAM

2018 OLYMPIC WINTER GAMES
PYEONGCHANG, SOUTH KOREA

The pictogram for the Independent Observer Team is a large rectangular area with a light blue background featuring a repeating pattern of white, swirling, concentric circles. It contains ten circular portraits of team members, each with a caption below it. The team members are arranged in a grid-like fashion. The captions provide the names, titles, and previous roles of each member. A note at the bottom left indicates a shared role for one of the members.

Ben McDEVITT (Chair)
Former Chief Executive Officer, Australian Sports Anti-Doping Authority (ASADA) Australia

Frédéric DONZÉ (Vice Chair)
Chief Operating Officer, WADA Switzerland

Osquel BARROSO
Science and Medicine Deputy Director, WADA Cuba/Italy
* 31 January – 15 February

Thierry BOGHOSIAN
Laboratory Accreditation Senior Manager, WADA USA
* 14-25 February

Zhiyu CHEN
Executive Director General China Anti-Doping Agency (CHINADA) China

Karine HENRIE
Standards and Harmonization Manager, WADA Canada

Dominique LEROUX
Head of Legal Anti-Doping Services, International Cycling Union (UCI) Canada/Switzerland

Adam KLEVINAS
Legal Affairs Senior Manager, WADA Canada
15-25 February

Kadidiatou TOUNKARA
Retired Athlete and Member of WADA Education Committee Mali

Ilaria BAUDO (Manager)
Standards and Harmonization Manager, WADA Italy

*Shared Laboratory Observer role

16.2 Summary of IO recommendations

RECOMMENDATIONS TO THE IOC

IOC Recommendation no. 1

The IOC and the ITA (once operational) should fully clarify each party's roles and responsibilities for the next Olympic Games. In particular, they will need to determine if the IOC, as the Signatory of the Code and the organization responsible for its own compliance with the Code, remains operationally involved in the Games anti-doping program and if so, in what role.

IOC Recommendations no. 2-3

Consideration should be given to require every Olympic athlete and accredited athlete support personnel to complete an anti-doping educational workshop or quiz before attending the Olympic Games, as is the case with NOC physicians. The aim would be to ensure that all have a basic level of understanding of the doping control procedures and their roles and responsibilities.

Specific pre-Games briefings, particularly around Games rules and protocols and highlighting any changes from previous Games or protocols, should be delivered to athlete support personnel to discuss and clarify potential issues prior to the processes beginning.

IOC Recommendations no. 4-5

For the 2020 Tokyo Summer Olympic Games, the Expert Pre-Games Taskforce should involve both the ITA and the IOC as the 'owner' of the event and Code Signatory, and work in relation to the Tokyo Games should start at least two full years prior to the opening of the Games. In the long term, the ITA, in its leading role, should aim to ensure an efficient transfer of knowledge and experience in the anti-doping area between LOCs as well as a consistent approach from one edition of the Olympic Games to the next. In addition, the ITA and the IOC should continue to ensure that the LOC engages the local NADO as a part of this cooperation.

The IOC should ensure the implementation of all Expert Pre-Games Taskforce recommendations. Given the intensity and the very heavy workload faced by the LOC from the opening of the Athlete Village(s), substantial recommendations are much less likely to be implemented during Games time.

IOC Recommendations no. 6-7

While the Intel TF was a successful initiative which saw IFs and NADOs working together to implement recommendations, Olympic IFs and NADOs should be undertaking this type of gap analysis and testing themselves, in a collaborative manner, in the twelve months leading up to the Games. If the Intel TF initiative continues, it should continue to be set up well in advance of the Games (as was done for PyeongChang) and, if possible, at least 12 months ahead of the Games.

If such Intel TFs continue, thought should be given to incorporating IF members and the LOC (if the local NADO is not given responsibility for the Games anti-doping program as per LOC Recommendation no. 1). While POCOG joined the Taskforce in the fall of 2017, it might have been beneficial for them to have been a member from the start. This could have facilitated Games Period risk assessment and TDP development. Furthermore, while a member of AIOWF participated as an observer, the Intel TF could have benefited from the presence of IF members.

IOC Recommendation no. 8

The advances in test distribution planning based on intelligence-led risk assessment that were demonstrated in PyeongChang should be consolidated and expanded upon for future Games. In particular, if Pre-Games Intel TFs continue, the information and intelligence gained from this endeavor should be shared with the LOC in 'real-time'. Having a member of the LOC part of the Intel TF (from the start of the Intel TF operations), or having the NADO fulfil the role of the LOC, could address this and ensure that the risk assessment and TDP developed for the Games benefit, well ahead of time, from the information from the Intel TF. This will contribute to a seamless transition between pre-Games and Games Period risk assessment, planning and delivery.

IOC Recommendation no. 9

For future Games, the IOC should continue to work with different sample collection authorities for tests outside of Olympic venues. This mechanism should enable a greater proportion of the testing contemplated in the TDP to be conducted over a longer period of time, when necessary.

IOC Recommendations no. 10-12

For future Games, the IOC should continue to utilize the knowledge and expertise of specialized ABP experts. The IOC should also consider whether any Games Period experts could be involved in the Pre-Games Intel TF moving forward. The ABP program should continue to be coordinated with the relevant IFs and NADOs in advance of the Games.

The IOC should share any recommendations provided by its appointed experts with the athlete's relevant passport custodian (IF or NADO).

In addition, where a targeted athlete is ultimately not tested at the Games, or his/her Games Period Athlete Biological Passport (ABP) test results are suspicious, the IOC should provide full details to the relevant IF/NADO (and WADA) for follow-up testing after the Games as appropriate.

IOC Recommendation no. 13

The IOC should continue to work with each Olympic IF to develop detailed anti-doping protocols in advance of each Games. These protocols should be provided to the LOC as soon as practically possible in order to assist the DCSM to better understand the sport-specific requirements that must be followed during the Games. The IOC should develop a template that can be adapted for each IF but should aim to include the following:

- a broad description in terms of test type, number and timing (instead of committing to specific numbers);
- who the IF technical delegate will be (name and contact information) and his/her responsibilities during the Games;
- specific information on selection draw requirements and materials;
- procedures regarding testing athletes who achieve record performances;
- any additional accreditation requirements for access to the field of play;
- any sport-specific anti-doping procedures; and
- an agreed procedure for how information and intelligence held by the IF can be shared with the IOC as well as how the IF can request target tests during the Games (i.e., contact name, contact method – phone or secure email, etc.).

IOC Recommendations no. 14-19

To assist in the planning of OOC testing missions, doping control staff should have access to the IOC Sports Information System, which contains the training schedules at each venue.

At least one staff member from the IOC/ITA or the LOC should be dedicated to verifying the submission and accuracy of whereabouts information and tasked with following up with NOCs and IFs/NADOs with respect to any whereabouts failures.

Doping control staff should have access to GMS information if it is available. The information would be far more valuable if accreditation scanning was extended to include not only entry points, but also exit points of Olympic venues.

The IOC should liaise with NADOs and IFs to ensure that RTP athletes are reminded of their personal obligation to provide complete and accurate whereabouts during the Games, including their room numbers, to avoid reliance on the NOC rooming lists.

NOCs should be requested to provide the dates and times of athlete arrivals and departures from the host country ahead of the opening of the village. NOCs should also be requested to use the same template form to provide the rooming lists.

The IOC should include in its Anti-Doping Rules a mechanism for proportionate penalties for NOCs that fail to provide location information. The entity in charge of whereabouts management during the Games should notify the IOC of any instances where NOCs do not comply so that sanctions against NOCs who fail to provide the required information can be imposed by the IOC.

IOC Recommendation no. 20

As was recommended in previous Olympic Games' IO reports, the IOC should consider building a provision in the host city contract to cover all costs of IDCs, including travel, meals, per diems and accommodation.

IOC recommendation no. 21

The IOC should inform the laboratory of any additional methods to be implemented during the Games, which are not part of the standard testing menu (i.e., applied to all samples) or do not constitute specific mandatory methods as determined by WADA (applied to specific samples upon request by the testing authority, e.g., hGH isoforms, ESA, IRMS or small peptides) well in advance (at least six months) before the start of the Games testing.

IOC recommendation no. 22

As was already noted in the Rio IO Report, it is strongly recommended that the practice of having external experts appointed by the IOC in the laboratory during the Games testing period is not continued at future Games. There should not be any experts in the laboratory representing or operating under the umbrella of the Anti-Doping Organization acting as Testing Authority. While the presence of external experts for support during the Games is encouraged due to the high number of samples to be analyzed, as well as the application of additional, complex testing methods and the short results reporting times, the appointment and scope of activity of such experts should be the responsibility of the laboratory director, and should be defined in the laboratory's Quality Management System for the Games. This ensures total operational independence of the laboratory from the Anti-Doping Organization acting as Testing Authority, as established in WADA's International Standard for Laboratories (ISL, Article 4.4.3).

IOC Recommendations no. 23-24

To ensure the TUEC has sufficient time and human resources to review thoroughly existing TUEs before the Games and new requests at Games time, the IOC should consider the following:

- Contacting all relevant IFs and NADOs ahead of the Games to ask permission to request athletes with an existing TUE who are included in the IOC shortlist (a list of participating athletes that is generally completed a few weeks before the start of the Games) to provide access to their medical information in ADAMS to the IOC or the body to which it outsources this activity; and
- For Olympic Summer Games, where the number of athletes is much higher than at Winter Games, increasing the number of appropriately qualified TUEC members, with appropriate geographic spread (a member cannot review the TUE of an athlete of the same country or nationality), and/or bringing the TUEC members together earlier before the opening of the Games.

IOC Recommendations no. 25-27

The IOC ADR should clearly include the possibility to request explanation with regards to the route of administration at the initial review stage in case of an AAF for glucocorticoids. More generally, additional time should be allowed for the initial review stage of all potential cases to avoid unnecessarily seizing the ADD-CAS for cases that could have otherwise been closed for valid reasons at an earlier stage.

The IOC should consider having an investigator/staff on site to follow up on potential non-analytical ADRVs. The review process pertaining to non-analytical ADRVs should be formalized and include an audit trail.

An efficient and secure communications and information technology system should be put in place in advance of the Games so that communications can be conducted securely and efficiently.

IOC Recommendations no. 28-31

The IOC should maintain the ADD-CAS adjudication framework.

The IOC should clarify provisions on provisional suspension and ineligibility.

The IOC/ADD-CAS/IFs should ensure clarification of rules and roles to ensure that all parties participating in proceedings understand the process.

The IOC should emphasize to all parties involved in a case the need to ensure the confidentiality of proceedings and enable the possibility of Games-related consequences to be imposed against parties that do not respect their obligations in this regard.

RECOMMENDATIONS TO THE LOC

LOC Recommendation no. 1

Serious consideration should be given to utilizing the host country's NADO in the first instance for the provision of anti-doping services.

LOC Recommendations no. 2-4

Doping control personnel must be recruited and trained to be able to address athletes' questions during all phases of the doping control procedures.

DCS educational documents should be updated to ensure they are effective and utilized by the athletes. A phone application or video clip might be a more suitable communication platform aligned with current athlete lifestyles and communication patterns.

A safe communication platform could be made available and advertised to athletes to provide feedback on their experiences with the doping control procedures at the Games or to report any suspicious activity they may witness.

LOC Recommendation no. 5

The LOC should ensure that out-of-competition testing plans are unpredictable, i.e., athletes are tested in various locations and at different times each day. If, in the lead-up to the Opening Ceremony, athletes are only tested in the Athlete Village(s) and in the mornings or evenings, this becomes very predictable and less effective. To improve reaction time regarding target tests, the LOC should ensure testing can occur at all venues from the opening of the Athlete Village(s), ideally including training venues. Sufficient numbers of LOC staff should be assigned to out-of-competition and other targeted missions. LOC personnel should also be able to verify whereabouts information and adapt testing missions in a prompt manner.

LOC Recommendation no. 6

Multi-language cards should be available for use by chaperones at the point of athlete testing notification and those chaperones possessing the best language skills should be dedicated to the out-of-competition missions in the Athlete Village(s) and other venues.

LOC Recommendation no. 7

Specific role requirements should be stipulated to clearly define profiles and training requirements for each category of the doping control staff and should be standardized for Major Events. In particular, language proficiency and knowledge of the anti-doping procedures should be included in training and final selection of those fulfilling doping control roles. WADA's Guidelines for Major Events (<https://www.wada-ama.org/en/resources/world-anti-doping-program/guidelines-for-major-events>) could be utilized as a reference to help in this regard.

LOC Recommendations no. 8-9

Considering IDCs come from different ADOs, where the sample collection kits and specific procedures often differ slightly, it is recommended that a pre-Games on-site workshop attended jointly by IDCs and local DCOs, including scenario training and exams, be held to ensure consistency.

The LOC should also plan to keep some IDCs engaged until the very end of the Games.

LOC Recommendation no. 10

Establishment of a properly tasked, staffed and functioning DCCC can be a significant asset in ensuring effectiveness and efficiency across the entire doping control apparatus. The DCCC should be a hub for decision-making, intelligence and information analysis, and command and control. It should house all relevant doctrine and include facilities for daily management meetings.

LOC Recommendations no. 11-12

Whereas the IO Team finds that unpredictability of the target testing should be increased during the out-of-competition period and testing should thus not occur only in the morning, the DCSs in the Athlete Villages should have the capacity to process large numbers of athletes at the same time. The LOC should ensure that DCSs in the Athlete Villages have the capacity to process large influxes of samples within short time periods.

The LOC should also ensure that chaperone waiting areas are available in all high volume DCSs to avoid overcrowding of the DCS.

LOC Recommendation no. 13

DCS access control should be made more robust by adding security personnel, setting the access control at the entry and ensuring all persons entering or exiting sign the relevant register.

RECOMMENDATIONS TO WADA

WADA Recommendation no. 1

Initiate a comprehensive review of the approximately 50 IO Reports for Major Events conducted since 2000 with a view to focus attention on the most significant repetitive issues arising. The review should also make recommendations as to the most effective mechanisms for ensuring due consideration of IO Report recommendations and, where deemed appropriate, ensuring their adoption.

WADA Recommendation no. 2

Consideration should be given to ensuring there is adequate capacity and redundancy for sickness, special tasks or other unforeseen impact on the IO Team resources.

WADA Recommendation no. 3

Given its role in monitoring compliance of IFs and NADOs with the World Anti-Doping Code and related International Standards, WADA should reconsider whether it should be part of Intel TFs.

WADA Recommendation no. 4

WADA should double-check with its EQAS sample provider the protocol for preparation of double-blind EQAS samples for the Games, to ensure that they meet the sample volume requirements that guarantee the performance of all necessary tests.

WADA Recommendation no. 5

WADA's Science and Medicine Department could consider briefing the TUEC ahead of the Games in order for the TUEC members to be aware of developing or recent issues or trends with respect to doping and TUEs.

16.3 Sample collection statistics

Number of Athletes Tested

Number of Athletes Tested (as reported in ADAMS)	Number	% out of the 2963 Olympic Athletes Participating
Athletes Tested (once)	1160	39%
Athletes Tested (more than once)	455	15%
Total Number Athletes Tested	1615	55%

Type of Analyses by Sport – Discipline¹³

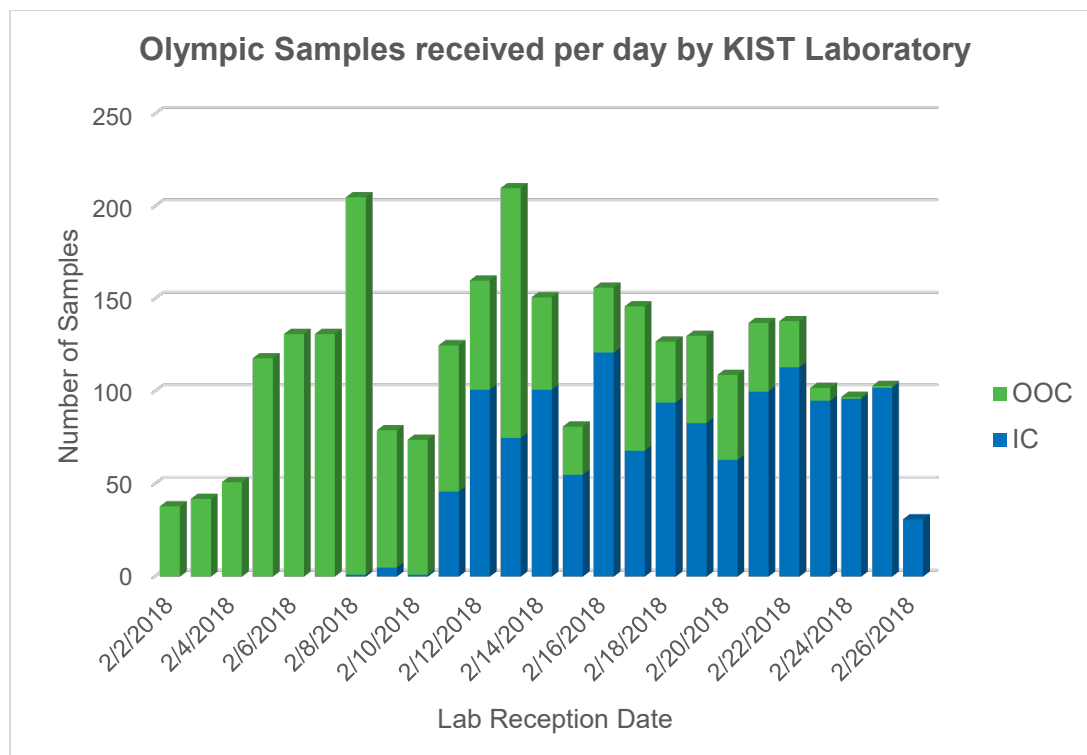
Sport – Discipline	Urine			Blood			ABP Blood Passport			Grand Total
	IC	OOB	Urine Total	IC	OOB	Blood Total	IC	OOB	ABP Total	
Skiing	392	354	746	88	119	207	26	69	95	1048
Cross-Country	115	129	244	43	89	132	26	49	75	451
Alpine	86	88	174	15	12	27	0	2	2	203
Snowboard	77	63	140	9	2	11	0	2	2	153
Freestyle	64	55	119	7	8	15	0	3	3	137
Nordic Combined	21	9	30	13	6	19	0	12	12	61
Ski Jumping	29	10	39	1	2	3	-	1	1	43
Skating	246	209	455	112	59	171	0	120	120	746
Short Track	78	52	130	47	18	65	0	45	45	240
Speed Skating greater than 1500m	77	59	136	39	18	57	0	43	43	236
Figure Skating	45	64	109	9	8	17	0	13	13	139
Speed Skating 1500m or less	46	32	78	17	14	31	0	19	19	128
Speed Skating	0	1	1	0	1	1	0	0	0	2
Synchronized Skating	0	1	1	0	0	0	0	0	0	1
Ice Hockey	174	335	509	23	54	77	0	18	18	604
Biathlon	102	111	213	40	77	117	0	60	60	390
Bobsleigh	67	138	205	9	46	55	0	1	1	261
Bobsleigh	47	131	178	8	44	52	0	1	1	231
Skeleton	20	7	27	1	2	3	0	0	0	30
Curling	66	10	76	0	0	0	0	0	0	76
Luge	28	30	58	2	3	5	0	1	1	64
Grand Total	1076	1187¹⁴	2262	274	358	632¹⁵	26	269	295¹⁶	3189

¹³ Data attributed to the IOC (as the Testing Authority) as recorded in ADAMS.

¹⁴ The Urine OOB total includes fourteen samples that were analyzed by the Lausanne laboratory and two samples by the Tokyo laboratory (with the IOC as the Testing Authority) during the Games Period.

¹⁵ Blood samples' total includes six blood samples that were analyzed by the Lausanne Laboratory (with the IOC as the Testing Authority) during the Games Period.

¹⁶ ABP samples' total includes two ABP samples that were analyzed by the Lausanne Laboratory (with the IOC as the Testing Authority) during the Games Period.



16.4 TUE statistics

The 37¹⁷ TUEs recognized or granted by the Games' TUE Committee covered the following substances or methods:

- IV Administration = 2
- Narcotics = 1
- Insulins = 3
- Diuretics = 5
- Beta-2 agonists = 5
- Stimulants = 11
- Glucocorticoids = 11

¹⁷ One TUE was for both a stimulant and a glucocorticoid.

16.5 AAFs and outcomes¹⁸

	Sample Collection Date	Sport	Substance(s) Found	Athlete Gender	Test Type	Sample Type	Outcome
1	4 February 2018	Speed Skating (Short Track)	Acetazolamide	M	OOC	Urine	ADRV upheld
2	6 February 2018	Hockey	Hydrochlorothiazide	F	OOC	Urine	ADRV upheld
3	10 February 2018	Curling	Triamcinolone acetonide	M	IC	Urine	No ADRV – permitted route
4	11 February 2018	Luge	Amphetamine	M	IC	Urine	TUE*
5	11 February 2018	Speed Skating (Long Track)	Prednisone	M	IC	Urine	TUE
6	12 February 2018	Curling (Mixed)	Meldonium	M	IC	Urine	ADRV upheld*
7	13 February 2018	Curling (Mixed)	Meldonium	M	IC	Urine	ADRV upheld*
8	14 February 2018	Hockey	Amphetamine	M	IC	Urine	TUE
9	15 February 2018	Luge	Amphetamine	M	IC	Urine	TUE*
10	15 February 2018	Hockey	Fenoterol	M	IC	Urine	ADRV upheld
11	18 February 2018	Bobsleigh	Trimetazidine	F	OOC	Urine	ADRV upheld
12	20 February 2018	Skiing (Freestyle)	Amphetamine	F	IC	Urine	TUE
13	21 February 2018	Bobsleigh	Triamcinolone acetonide	F	IC	Urine	No ADRV – permitted route
14	21 February 2018	Hockey	Triamcinolone acetonide	M	IC	Urine	No ADRV – permitted route
15	22 February 2018	Hockey	Amphetamine	F	IC	Urine	TUE

¹⁸ Entries marked * denote same athlete.